Teachers' Guide

Education Development Center
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Welcome — Introduction to the PBS KIDS Study

Welcome, educators! Thank you for participating in the PBS KIDS Study — a Ready To Learn Initiative — and for using the Math Curriculum Supplement. The Supplement is a 10-week experience that uses educational media — videos and games from the PBS KIDS and PBS KIDS LAB websites — in combination with other effective learning experiences, such as reading aloud and hands-on activities, to introduce preschoolers to important and age-appropriate math content.

Why Educational Media?

Research shows that developmentally appropriate educational media, such as short, engaging videos and interactive games, can help teachers prepare preschoolers for school success in a variety of subjects. The Math Curriculum Supplement uses educational media to provide preschool children with powerful alternative ways to explore and practice important math concepts. As part of this study, you will use two kinds of educational media.

- **Engaging videos** will help you introduce new math concepts and vocabulary, as well as provide children with models of how to apply their emerging math skills.
- **Interactive games** will provide opportunities for children to practice math skills in pairs and in small or large groups, and can scaffold and support children's learning.

As an early childhood educator, you play a critical role in supporting preschoolers' learning throughout the school day. Your role will be just as important when implementing the Math Curriculum Supplement and the educational media components.

To be sure you have access to educational media, and to ensure your children benefit from the videos and interactive games, we are providing the following technology for you to use in your classroom.

- **Interactive Whiteboards (IWBs)** allow you to project a computer display on a large interactive touch screen. You'll be using your IWB to show each week's video and to demonstrate how to play the week's interactive games. Displaying videos and games on the Interactive Whiteboard helps the whole class visualize math concepts and practice them together, as children will sometimes take turns using the IWB with you.
- **Laptop computers** let children experience and explore the interactive games with a partner. You will have three new laptop computers in your classroom. Each will include a mouse and two sets of headphones, as well as an audio "splitter" that will allow two children to listen to the same audio when playing a game together.
- **Wireless Internet routers**, where necessary, will ensure the Interactive Whiteboards and laptops have high-speed Internet access.

In addition to the new technology, we also will supply you with all of the necessary materials to implement the other classroom activities in the Math Curriculum Supplement, including hands-on objects such as dominoes, unifix cubes, and crayons, as well as printed materials (number lines and pattern signs) to facilitate large- and small-group activities.

Why Math?

Mathematics is a way of understanding our world. Mathematicians think of mathematics as the science of quantities and patterns. Quantities and patterns are found all around us. Children naturally use quantities and patterns when playing ("My tower is four blocks tall and is made from a red block, then a blue block, then a red block, then a blue block!"). For young children, building a deeper understanding of mathematics can help them better understand the world around them. With exposure to mathematical learning experiences, children can engage in important mathematical conversations and reasoning. They can say how many kids are on the playground, they can figure out if there are enough pieces of fruit for each person at the table, and they can better describe shapes they used to draw a family portrait. Young children frequently have mathematical abilities that are more sophisticated than we realize, and they often have a strong desire to engage in mathematical thinking. It is up to us, as their teachers, to support their mathematical growth and enjoyment.

Math Skills Targeted in the PBS KIDS Study Math Curriculum Supplement

The Math Curriculum Supplement targets various mathematics skills that are important in early childhood. Below we describe each of these skills and provide examples as needed.

Counting

By learning to count, children begin to understand the idea of "quantity," or "how many" things there are in a group. When children first come to preschool they have the ability (and desire!) to count small quantities. In order to become more sophisticated counters, children need opportunities to practice important counting skills, such as the following.

- **Verbal Counting.** Verbal counting involves learning the list of number words (saying "one," "two," and so on). Initially, children learn this through chanting and songs, and they may not yet understand how the words relate to quantities. As children become more sophisticated counters, they are able to count to higher numbers and understand that each number word represents a specific quantity.
- **Object Counting.** Object counting involves children learning to associate specific number words with individual objects as they count. Children learn to do this by practicing one-to-one correspondence — that is, counting objects one at a time. For example, when counting two toys, they point to the first and say "one" and then point to the second and say "two." Initially, when children are learning to count objects, they may skip objects or count objects twice. By scaffolding children's counting, teachers can help children keep one-to-one correspondence.
- **Cardinality.** Cardinality involves understanding that the last number reached when counting a set of objects answers the question, "How many objects are there altogether?" For example, when shown a group of five blocks and asked, "How many blocks are there altogether?" children learn to answer "five". Children who have not yet learned about cardinality may count the blocks, yet not know that the last number, five, describes how many there are.

Subitizing

Subitizing involves looking at a small set of objects and immediately recognizing the quantity without counting (e.g., recognizing the number of dots on a die that's shown *briefly* without having to count them). When children first come to preschool, they are able to subitize small quantities (e.g., one, two) in easy arrangements (e.g., in a line). In order to become more sophisticated subitizers, children need opportunities to practice with larger quantities and varied arrangements.

Identifying Numerals

During the preschool years, children begin to read numerals (0, 1, 2, 3, and so on). For example, they will verbalize "one" when they see "1." With practice, children also learn to associate quantities with their corresponding numerals. For instance, children learn to associate the symbol "2" with a set of two objects. In order to become familiar with numerals, children need opportunities to practice reading numerals out loud, as well as matching them to sets of objects.

Recognizing, Composing, and Representing Shapes

Early in childhood, children are interested and are to develop a rich understanding of shapes. In order to recognize, compose and represent shapes, children need opportunities to practice the following.

- **Identifying shapes and their properties.** During preschool, children learn to associate shapes with their corresponding names. In order for children to develop a richer understanding of shapes, it is important to help children recognize the geometric properties of shapes (for instance, that triangles have three sides). Properties include the number of sides and the number and kinds of corners (angles). Opportunities to compare and classify shapes can help children develop a richer understanding of shapes and their properties. With time and practice, children come to understand that the same shape can vary in size and orientation.
- **Building or drawing shapes.** Children often enter preschool with the ability to copy shapes. However, in order to draw or create shapes by name (for instance, "using these pencils, create a triangle"), children have to understand the properties of shapes. By providing students with opportunities to practice building or drawing shapes, they can come to a more sophisticated understanding of shapes and their properties.

Patterning

A pattern is an arrangement of repeated parts. Patterning is the search for mathematical regularities and structures. Children's understanding of patterns develops gradually during the early childhood years. Children often come to preschool able to copy simple patterns and, with practice, can learn to identify, copy, extend, and create simple patterns (e.g., AB patterns). However, as they develop a more sophisticated understanding of patterns, they also are able to identify, copy, extend, and create more complex patterns (e.g., ABB patterns).

In order for children to develop a better understanding of patterns, it is important to help them identify core elements of patterns (for example, to identify "red, blue" as the core elements in a "red, blue, red, blue, red, blue..." pattern). Once children identify core elements of patterns, they are able to develop richer understanding of patterns by copying patterns (using the same objects or different objects), finding missing core elements in patterns, extending or continuing patterns, or creating their own patterns.

This may be done in many spontaneous ways, such as lining up students in a boy-girl-boy-girl pattern for outside time, or copying or extending patterns they see in books, the block towers they build, or the clothes they are wearing.

Setting the Stage for Learning with Educational Media

In this guide, you will find instructions and scripts to help you integrate educational media and other activities into your classroom. Before you begin using the Math Curriculum Supplement, here are some tips for preparing yourself and your classroom to get the most out of technology as a tool for learning.

Familiarize yourself with the media ahead of time.

The more you know about the content of a video or interactive game, the easier it will be for you to interact with children and actively support their learning while they watch and play.

Introduce children to new technologies before you use the technologies to present math content.

Young children are often eager to touch and play with new technologies, but their enthusiasm may distract from learning the intended math ideas. Providing a brief introduction to your new equipment — how it is used and when children will have the opportunity to use it — can help children get comfortable with new technologies and understand that they are tools for learning. Your coach will provide tips for introducing the Interactive Whiteboard (IWB) and laptop computers to your class.

Set up the Interactive Whiteboard where all children can see and hear it.

Ensuring that the Interactive Whiteboard is situated where all children can see it comfortably will allow them to fully engage with the videos and interactive games. Likewise, using the two sets of headphones with the laptops will allow children to work in pairs when playing interactive games and will ensure that both benefit from the game's instructions and feedback.

Set clear rules for children's turn-taking and collaborative play.

To make sure all children have the opportunity to participate in interactive game play on the Interactive Whiteboard and on the laptops, use a system that gives all children a turn and helps them anticipate when they will get to play. Your coach will help you devise a system to keep track of computer use so each child can be assured that they will always get to play the easy and challenge games of the week. When they are using laptops in pairs, we recommend children alternate control of the mouse; every time a round of the game ends, the players can switch roles.

Learning with Videos

Videos are an important part of the Math Curriculum Supplement that help introduce children to the week's focal math skills and concepts. To get the most out of the video co-viewing experience, we recommend the following.

Establish a pre–video-viewing routine.

A consistent routine will prepare children to participate in the activity. For instance, get ready to view the videos in the same manner every week so children will be ready to actively listen and learn while they watch. You might, for example, choose to settle your class on the rug with a song, introduce the topic of a video, and dim the overhead lights to signal that the activity is about to begin.

Model active viewing.

When teachers, assistants, and other adults in the classroom focus their attention on the video, it signals to children that they should be watching and learning, too. Try to minimize the amount of other activity going on during video viewing to help maintain children's focus.

Use "pause points" and questions to support children's learning.

The videos provided have built-in points where you will pause the video to engage children in a short conversation. Each video has up to four "pause points," where you will pause the video and review the math content onscreen, ask questions or explain challenging concepts, and help children practice using math skills. This guide will provide information about what to focus on at each pause point. Pause points are numbered from 1 to 4, and the prompts in the guide use the same numbers. Just before the pause point, you will hear a beep and see a red dot flash onscreen. This dot is a cue to get ready to pause the video when the pause point icon appears  These pre-set pause points are placed to help you support your children's learning, but you can pause the video at other points as well. For example, if a child raises a question you feel is worth further discussion, or if there is something in the video you want to explain to your children, you should feel free to pause the video and take advantage of these opportunities for active learning.

Monitor and support children's engagement.

Look for behaviors that indicate children may be losing interest in the videos (e.g., turning around, playing with children next to them) and redirect children's attention with your own interest and excitement. For example, if children are getting squirmy, try asking them questions about what they see, or making comments about on-screen events. ("Oh, look! She's turning around and around in circles!") Don't be afraid to talk over the video, especially when it comes to pointing out learning content.

Supporting Interactive Game Play

To have a successful learning experience with interactive games, children must have a meaningful understanding of three components of game play.

- **How to use the laptops and accessories (headphones/mice).** For example, how to click and make things happen within a game, as well as how this is different from game play on the Interactive Whiteboard, where you use your finger to touch and select objects.
- **The rules and goals of the game.** For example, selecting the correct shape from the four shape choices on the left of the screen to match the shape on the Huff-Puff-a-Tron.
- **The target learning concepts that must be applied to complete the activity.** For example, all objects with three sides are called "triangles," and thus the shape on the Huff-Puff-a-Tron is a triangle and should be matched with a triangle.

The information and scripts included in this guide will help you present these concepts to children. For instance, you will have the chance to model playing a game on the Interactive Whiteboard before children play the game on a laptop. The games are designed to be age-appropriate and brief, but children may still require some direction and explanation about the game from you before they begin playing and during independent play.

We also recommend you do the following.

Observe children's progress while they play and ask questions to assess if they need help. To gauge whether children understand the interactive game and are practicing their math skills, watch them play and consider if they are clicking purposefully or randomly. If children appear to be clicking randomly or off-task, ask them to explain what they are doing or to explain the rules to you, then follow up with targeted directions, prompts, or strategies to help them move forward. For example, if a child repeatedly clicks on a shape that does not match the shape on the Huff-Puff-a-Tron in the matching game, you might ask, "Can you tell me which shape you're looking for?" and use the opportunity to review how many sides each shape has.

Use interactive games as opportunities to start rich conversations about math and other things you are learning about in your classroom. Interactive games not only give children opportunities to practice their skills, but also provide them with concrete experiences they can talk about with teachers and peers to solidify their math learning. Don't be shy about asking children math questions related to what they are playing, just as you might make math connections while working with children in the block or art area. Simple questions like "How many are there?" and "What shapes do you see?" can help reinforce children's learning.

About the Educational Media

Math learning often overlaps with science learning, and the Math Curriculum Supplement uses a variety of PBS educational media created as part of the Ready To Learn Initiative and designed to support math as well as science learning for preschool-aged children.

Sid the Science Kid

Sid the Science Kid features videos and games that are based on national science learning standards and on an existing preschool science curriculum. Sid utilizes music and humor to celebrate children's natural curiosity about science in everyday life. The interrelatedness of math and science in preschool learning mean that mathematical concepts relating to counting, shapes, and the measurement of objects are often included in these science-based videos and games. Energetic and inquisitive Sid also provides a foundation for the concept of being a detective by embarking on adventures that foster mathematical and scientific questioning and reasoning.

The Cat in the Hat Knows a Lot About That!

Based on the Dr. Seuss children's books, these videos and interactive games are designed to cultivate positive views about science and math among the children who will become tomorrow's citizens and innovators. In each video, Sally and Nick present a scientific question to be solved with the help of the Cat in the Hat by using various mathematical concepts, including patterning, shape identification, and counting. In the games, children have the opportunity to use their mathematical knowledge of shapes and pattern recognition to solve problems, gather clues, and make connections, all with the help and collaboration of The Cat, Sally, and Nick.

Curious George

Curious George is an animated series based on the popular books by Margret and H.A. Rey. The suite of *Curious George* videos and interactive games inspire preschool children to explore math, science, and engineering in the world around them, and what better guide is there for this kind of exploration than the world's most curious monkey? While George's curiosity sometimes gets him in a little trouble, it also fosters his understanding of a wide variety of preschool math concepts, including counting and reverse counting, comparing and contrasting shapes, identifying numerals and comparing different sets of numbers.

Dinosaur Train

Dinosaur Train embraces and celebrates the fascination that preschoolers often have with dinosaurs and trains, while also encouraging the use of basic scientific and mathematical thinking skills. Buddy, the curious young Tyrannosaurus Rex featured in the interactive games, seizes every opportunity to meet and discover the many different types of dinosaurs that exist in his world. While exploring various prehistoric environments, Buddy often needs to use mathematical concepts such as counting, recognizing numerals, and comparing the size and orientation of shapes to help make important discoveries along the way. along the way.

Weekly Activities

In the following sections, you will find scripts and activity descriptions for each of the 10 weeks of the Math Curriculum Supplement. The activities are designed to be simple and repetitive because children need to practice the same math skills many times and in many different situations to learn them. The content changes from week to week, but many activities remain the same or are similar to previous activities so you and your children will have a familiar routine to follow. Below is an overview of the activities you and your children will do each week.

Activity	Setting	Description
Video Co-Viewing (25 minutes)	Circle Time with the Interactive Whiteboard (IWB)	Each week, videos introduce new math concepts or review key math content preschoolers may already know. Pause points marked within the videos indicate places where you pause to explain the focal or review math concepts, ask questions, and open up discussions about math with children.
Math Detective Journal (20 minutes per small group)	Small Group	Every child will receive a Math Detective Journal to use during the 10 weeks of the Math Curriculum Supplement. Journal activities are written activities that take place in small groups and provide an opportunity to reinforce skills introduced or reviewed in the week's video.
Easy Game Play (10 minutes per small group)	Small group with the Interactive Whiteboard (IWB)	This is the first opportunity children have to interact with the IWB each week. In a small-group setting, model the easy interactive game of the week with a quick demonstration, then allow children an opportunity to play the game, reinforcing the skills covered in the week's video, or sometimes reviewing skills from previous weeks.
Math Circle Routine (10 minutes)	Circle Time	The Math Circle Routine combines traditional preschool activities of circle time learning with new materials and novel activities or games to reinforce math skills covered in the week's videos and games in a hands-on way. These activities are designed to encourage children to ask questions and to participate.
Guided Book Reading (15 minutes)	Circle Time	Keeping with familiar preschool routines, once a week you will read aloud a math storybook related to the focal math skills of the week. The books contain pause points to allow you to explain math concepts, ask questions, and open up discussion.
Challenge Game Play (25 minutes)	Circle Time with the Interactive Whiteboard (IWB)	The last whole-group activity of the week is the Challenge Game Play, where you model playing an interactive game and then provide an opportunity for children to practice their math skills in the more challenging game environment. As the name suggests, the game is meant to challenge children and may require varying degrees of support.
Computer Center (10 minutes)	Pairs of children at laptops	Throughout the week, children will team up to play interactive games on the laptops. The focal easy and challenge games of the weeks will be available, as well as games from previous weeks, to allow children to practice and apply the math knowledge they are gaining.
Hands-On Centers (10 minutes)	Pairs or small groups of children	Also throughout the week, pairs or small groups of children can play the hands-on games and activities introduced during the week or from previous weeks. The games allow children to practice concepts covered in the videos and interactive games in hands-on ways.

Sample Schedule

We realize you have many things to teach and that you'll need to fit the Math Curriculum Supplement into an already busy schedule. Keep in mind that the Supplement will be most effective if you use a consistent schedule from week to week. Your coach will help you figure out how to schedule the Supplement activities into your week, as well as support you when holidays and other school closures occur. We recommend spreading the activities over four days, as in the sample schedule below. Please use this as a guide to help you plan how best to integrate these activities into your classroom schedule.

Sample Schedule

Monday	Tuesday	Wednesday	Thursday
Video Co-Viewing (25 minutes)	Math Detective Journal (20 minutes)	Math Circle Routine (10 minutes)	Challenge Game Play (25 minutes)
	Easy Game Play (10 minutes)	Guided Reading (15 minutes)	
Computer Center (~10 minutes per pair of children)	Computer Center (~10 minutes per pair of children)	Computer Center (~10 minutes per pair of children)	Computer Center (~10 minutes per pair of children)
	Hands-on Centers (~10 minutes per pair of children)	Hands-on Centers (~10 minutes per pair of children)	Hands-on Centers (~10 minutes per pair of children)

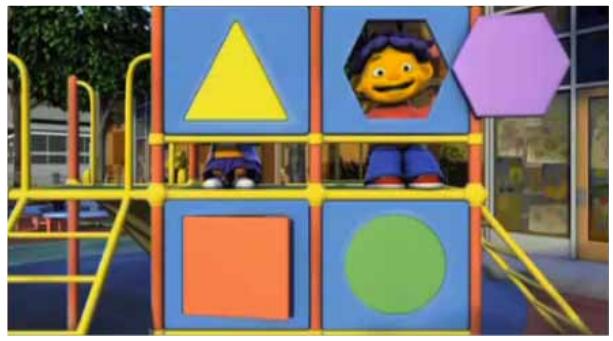
We have divided this guide into weekly units (10), each of which provides one or two activities for you to undertake each day of the week. Each activity is titled with some or all of the following information.

Name of the Activity

Video Co-viewing

Name of the Game with explanation box

The Dirt on Dirt (Sid the Science Kid)



Sid gets the math curriculum supplement started with an investigation. This video helps to introduce the role of children as "detectives," as Sid and his friends investigate what makes dirt, dirt. By counting Sid and all of his friends, the video helps to introduce counting to 5 and also helps to introduce shapes and geometric properties (circle, square, triangle, line, and curve).

Name of the Activity with Timing Goal

Video Co-Viewing Activity

Timing Goal: 25 minutes

Short scripts are provided to help you lead students through the activities.

- **What you do** is displayed by **bold black type**
- **What you say** to the class is displayed in *colored italic type* and marked with ❞.
- **What you say** is followed by comments in regular black type in parentheses ().

For Video Co-Viewing activities, the scripts correspond with specific pause points in the episode videos. We indicate these points with a button image (such as ⏸) that appears on the video and in the guide. You should pause the video and follow the corresponding script in the guide. See example script below.

What you do

Encourage children to figure out how many girls there are altogether and how many boys there are altogether in the video, again thinking out loud as you figure out the answers.

What you say

❝ *Now, let's just count the girls. How many girls are there? How many boys are there? How do we know how many there are?*
(Remind children that counting to find out how many is math and is part of being a Math Detective.)

Comment

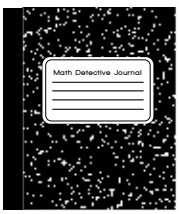
Resume video.

2. 6:44 — Suzy, the teacher, talks with the children about what it means to be a detective.

Pause and play buttons with corresponding information

Guide Icons

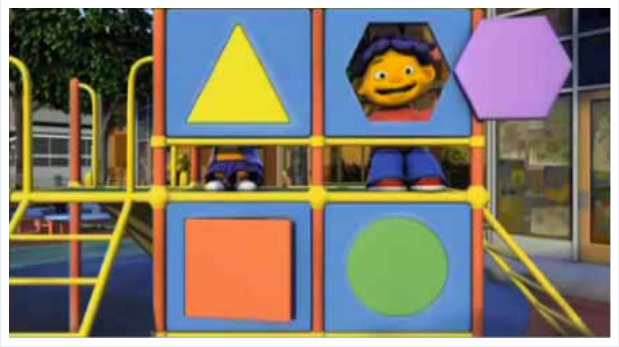
Throughout this guide we use icons to indicate different activities and instructions. Below are the most commonly used icons in the guide and what they represent.

Icon	Description
	Video Co-Viewing (Circle Time with the Interactive Whiteboard [IWB])
	Math Detective Journal (Small-Group Activity)

Icon	Description
	Math Circle Routine (Circle Time)
	Guided Book Reading (Circle Time)
	Easy Game Play (Small Group with Interactive Whiteboard [IWB])
	Challenge Game Play (Circle Time with Interactive Whiteboard [IWB])
	Hands-On Centers (Pairs of children)
	Computer Centers (Pairs of children)
	Skills and other important points to cover
	What you will need

Video Co-viewing

The Dirt on Dirt (Sid the Science Kid)



Sid gets the math curriculum supplement started with an investigation. This video helps to introduce the role of children as "detectives," as Sid and his friends investigate what makes dirt, dirt. By counting Sid and all of his friends, the video helps to introduce counting to 5 and also helps to introduce shapes and geometric properties (circle, square, triangle, line, and curve).

Overview

During **Circle Time**, watch "**The Dirt on Dirt**" with children on the **Interactive Whiteboard** (IWB). Look and listen for key pause points (marked with ⏸ and a "beep"), and use them as opportunities to ask questions to get children talking about math.

Skills and other important points to cover

- Introduce counting from 1 to 5
- Introduce simple shapes and geometric properties: circles, squares, triangles, lines, and curves
- Introduce and encourage children to be Math Detectives who listen for, observe, and talk about math

What you will need

- Interactive Whiteboard (IWB)
- Sid the Science Kid: *The Dirt on Dirt* video (14:46 minutes)
- Sample Math Detective Journal

Video Co-Viewing Activity

Timing Goal: 25 minutes

1. Pre-Video Viewing

Invite all children to the Interactive Whiteboard (IWB) area.

Spend a minute talking about the Interactive Whiteboard (IWB) and how you will use it for watching videos and playing games.

Talk about how you will watch a video with Sid the Science Kid, and that you'll stop the video several times to talk about what's happening with Sid and his friends and to talk about the math you and the children see in the video.

Provide children with examples of math — such as counting — and get ideas about "what math is" from them.

❞ *Today we're going to watch a short video about a boy named Sid. Do you know Sid?*
(Some children may be unfamiliar with the Sid character, so take time to provide background information to familiarize them.)

Who is Sid?

The Sid the Science Kid animated TV series is designed to promote exploration, discovery, and science readiness among preschoolers. Developed by the creators of the Muppets, Sid, the main character, starts each episode with a new question ("Why are my shoes shrinking?" "Why do bananas get mushy?") and spends the day finding answers with the help of family and friends.

❞ *While we watch, our job is to find math in the video. What are some examples of math? We can use math to find out things about the world. For instance, we can use numbers to find out "how many" by counting. Let's count the fingers we have on one hand.*
(Help children count to 5 using their fingers.)

Encourage children to tell you numbers that they know. Suggest other examples of math, such as shapes (circles and triangles) and patterns (something that repeats so that you can predict what comes next).

❞ *Shapes like circles, squares, and triangles are examples of math. Can anyone tell me some names of shapes? What about what comes next in the sound pattern "clap, stomp, clap, stomp, _____?"*
(Offer examples of specific math concepts if children have difficulty coming up with ideas.)

Remind children about the stopping (pause) points during the video, when they should be on the lookout for math.

Note: You can also pause the video any other time you or the children notice math to discuss.

Start the video.

2. Video Co-Viewing (with Pause Points)

1. 4:05 — Sid is in the playground dancing and singing with his friends.

Encourage children to figure out how many friends there are altogether, including Sid.

- *Let's figure out how many children there are here, with Sid and all of his friends. How can we do that?*
  (Practice wait time, and give children an opportunity to answer.)

- *We can count everyone — Sid and his friends.*
  (Count aloud with the children, pointing to each friend. Hold up the correct number of fingers (i.e., 4 fingers for Sid and 3 friends).

Encourage children to figure out how many girls there are altogether and how many boys there are altogether in the video, again thinking out loud as you figure out the answers.

- *Now, let's just count the girls. How many girls are there? How many boys are there? How do we know how many there are?*
  (Remind children that counting to find out how many is math and is part of being a Math Detective.)

Ask children to predict what will happen next in the video.

Resume video.

2. 6:44 — Suzy, the teacher, talks with the children about what it means to be a detective.

Talk about what it means to be a "detective" and the tools you will use to be detectives — eyes to look for and observe math, and ears to listen for math.

- *Let's talk about what a detective is and what a detective does.*
  (A detective is someone who looks for information to solve a problem. Children should listen for, observe, and talk about math.)

Remind children that Sid and his friends are dirt detectives, but that they are all going to be Math Detectives looking for math all around and recording the math they see in their Math Detective Journals (hold up a journal as an example).

- *For the next few weeks, we're going to be detectives like Sid and his friends, but we are going to look for math instead of dirt. You will each have your own Math Detective Journal to write down the math that you see and learn about.*
  (Hold up the Math Detective Journal to show the children, and let them know they each will have their own Journal to record the math they see and learn about.)

Encourage children to count how many people, including the teacher, there are altogether in Sid's classroom in the video, thinking out loud as you count.

- *Let's detect how many people there are altogether in Sid's classroom.*
  (Point to each person on the screen as you count. Use your fingers to indicate 5 total people.)

Ask children to predict what will happen next in the video.

Resume video.

3. 9:25 — Sid and his three friends play behind the shape doors on a piece of playground equipment.

Encourage children to count the number of shapes/doors there are altogether, thinking out loud as you count.

- *Did you notice that the children are behind some doors? How many doors do you see?*
  (Count the number of doors/shapes there are altogether. Point to each shape as you count; hold up 4 fingers to indicate 4 shapes all together.)

Name and describe the shapes on the doors — square, circle, triangle, and hexagon — with an emphasis on the circle and triangle. Guide the children in discovering what is different about the shapes.

- *Did you know learning about shapes like circles, triangles, squares, and hexagons are part of learning about math? Math Detectives, how are these shapes the same as one another? How are the shapes different from one another?*
  (Practice wait time, and give children an opportunity to answer.)

- *Something that makes these shapes different from one another is that they have different kinds of sides. A triangle is made of three straight lines.*
  (Model tracing and counting the sides. Encourage children to count out loud with you.)

- *A circle is made of one curve that goes all the way around. Do you see any sides or straight lines on the circle?*
  (Trace the curve of the circle. Note the lack of straight lines or sides on a circle)

Encourage children to listen to the funny jokes Sid and his friends are going to tell.

Resume video. End 14:46

3. Wrap Up

Encourage children to review the concepts covered in the video — counting and numbers, shapes and geometric properties, and the work of Math Detectives.

> *Let's think hard and think back to what we learned today. We talked about counting and numbers, we saw four different shapes, and we learned that we are going to be Math Detectives.* (Encourage children to tell you what they remember from the lesson.)

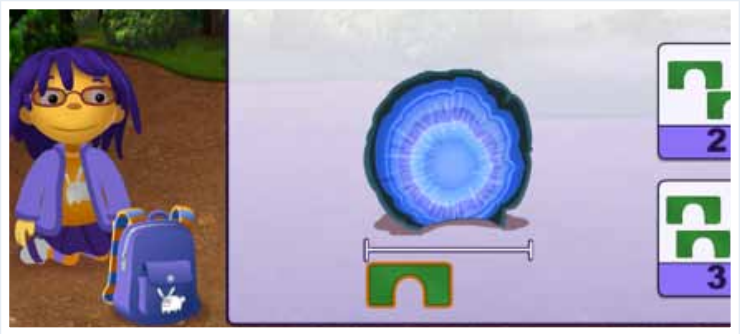
Practice counting out loud from 1–5, and have children count with their fingers.

Have the children sky-draw triangles, squares, and circles.

Remind children that, for the next couple of weeks, they're going to be Math Detectives, so to always listen carefully and keep their eyes open to find math all around!

Easy Game Play

Crystals Rule (Sid the Science Kid)



May loves to collect rocks, but needs help measuring them. Using every day objects, help May figure out how many paperclips long the purple rock is, or how many blocks long the green rock is. Helping May measure her rocks will help children review counting from 1 to 5 and introduce number identification.

Overview

During **Small Group Time,** demonstrate how to play ***Crystals Rule*** on the **Interactive Whiteboard** (IWB). Use game play as an opportunity to talk about **counting** and **number identification from 1 to 5** as you call on individual children to try out the game on the Interactive Whiteboard (IWB). Since this is the children's first time playing a game on the Interactive Whiteboard (IWB), establish **basic game play rules.**

Skills and other important points to cover

- Introduce number identification from 1 to 5
- Review counting from 1 to 5

What you will need

- Interactive Whiteboard (IWB)
- Sid the Science Kid: *Crystals Rule* game
- Classroom Number Line
- Sample Wireless Mouse

Easy Game Play

TIMING GOAL: 10 minutes

1. Warm-up

Invite children to the Interactive Whiteboard (IWB) area and review counting from 1 to 5 and the shapes identified in *The Dirt on Dirt* video — triangle, circle, square, and hexagon (focus on circle and triangle) before playing Crystals Rule on the Interactive Whiteboard (IWB).

- *Today, we're going to play a game on the Interactive Whiteboard. But first, can you count with me to 5?*
  (Use your fingers to count from 1 to 5. Count a second time pointing to the numerals on the number line.)

- *Who remembers the shapes we saw Sid and his friends hiding behind when they told their jokes?*
  (Help children name circle, triangle, square, and hexagon, briefly elaborating on the number of sides of a triangle and that a circle is a curve that goes all the way around.)

2. Introduce Easy Game

Introduce some basic game play rules — only one child can touch the Interactive Whiteboard (IWB) at a time, and children have to take turns playing.

- *Remember that we watched the Sid the Science Kid video on the Interactive Whiteboard before? Well we can also play games on it! But we have to be careful, only one of us can touch the screen at a time, and we have to take turns.*
  (Model how touching the Interactive Whiteboard (IWB) makes things happen by loading the game *Crystals Rule*.)

Listen to May's explanation of how to play the game. Then, thinking out loud as you play the game, model how to play Crystals Rule: Slide the objects at the bottom of the screen to get an estimate; name the two number choices; and select the number you think is correct — reinforcing the concept of "altogether."

- *Now, let's play Crystals Rule! We can use our finger to move the objects on the Interactive Whiteboard to help us figure out the answer to May's questions.*
  (Model sliding the measuring object to decide how many are needed altogether. Name the two number choices, and model tapping on the correct answer.)

- *How do we know how many objects are needed altogether?*
  (Encourage children to count out loud to verify the total number of objects needed.)

Walk children through a couple of examples, being sure to model recovering from making a mistake. Then call volunteers up to play the game, encouraging children to think out loud during their turns.

- *Whoops! I made a mistake. That's not the right answer. Let's count carefully as I slide the object to figure out how many we need altogether!*
  (Model recovering from making a mistake. Then have children take turns playing.)

Remind children that during Computer Center Time, they will play Crystals Rule with a partner on a computer using a mouse.

- *During Computer Center Time, you can play this game again with a partner! But instead of touching the screen, you'll use the mouse to slide the objects and click on your answer.*
  (Hold up a wireless mouse for children to see.)

3. Wrap Up

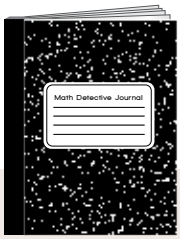
Review numbers 1–5 and the concept of altogether.

- *All right, Math Detectives! Let's think about what we learned today. What numbers did we spot while playing the game?*
  (Practice wait time, and give children an opportunity to answer.)

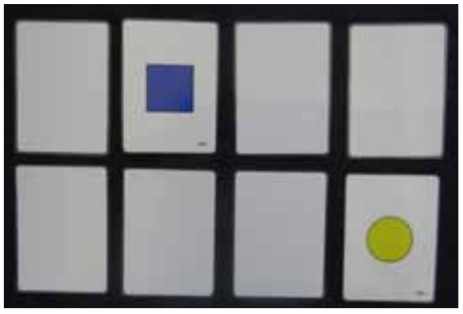
- *What can we do when we want to find out how many there are? What about when we want to know how many there are altogether? How did we figure it out for* Crystals Rule*?*
  (Review the meaning of "altogether" and that you can count to find out how many altogether.)

Model counting once with fingers, then count and point to numerals on the classroom number line.

- *Let's finish by counting to 5.*
  (Practice counting out loud, and have children count with their fingers. Then count pointing to the numerals on the number line.)



Math Detective Journal



Math Detective Journal

During Math Detective Journal Time, help the children identify shapes and geometric properties — circles, triangles, squares, rectangles, lines, and curves — around the classroom. Then have children draw examples of what they find around the classroom in their journals.

Simple Shape Concentration

This game helps children match shapes by recognizing geometric properties. To introduce the game, name the shapes on each of the cards and talk about shapes' geometric properties (lines, curves, number of sides). Place the cards face down in two rows. Model flipping over two cards, thinking out loud about whether or not the cards are a match (i.e. two triangles) and how you know (count the number of sides). Model finding a pair that matches and a pair that does not match — flipping the cards back over and allowing the next person a turn.

Overview

During **Small Group Time**, introduce and review simple shapes and geometric properties with children in the first **Math Detective Journal** activity. Help children identify shapes around the classroom to draw in their journals. Then, introduce the **Hands-On Activity**, "**Simple Shape Concentration**."

Skills and other important points to cover

- Introduce simple shape: rectangle; review simple shapes and geometric properties — circle, triangle, square, line, and curve
- Introduce counting sides of simple shapes: circle, triangle, square, and rectangle
- Introduce size and orientation of simple shapes: circle, triangle, square, and rectangle

What you will need

- Math Detective Journals (one per child)
- Crayons
- Dry erase boards, markers, and erasers
- Large shape and geometric properties cards (circle, triangle, square, rectangle, line, curve)
- Simple Shape Concentration card game

Math Detective Journal

TIMING GOAL: 20 minutes

1. Warm-up

Invite children to the Small Group area to review concepts from last week's video, including being detectives and identifying shapes (circle, triangle, square) and geometric properties (line, curve, number of sides).

- *Remember we had a special job while watching the Sid the Science Kid video last week? We were Math Detectives. Who remembers what Math Detectives do?*
  (Review being a Math Detective, who looks for information to answer a question or solve a problem with math.)

- *We saw different shapes in the video. Who remembers what shapes we saw?*
  (If children are having trouble naming shapes, use the dry erase board to draw the shapes or hold up shape cards encouraging children to name the circle, triangle, and square shapes from the video.)

Introduce the rectangle by showing the rectangle shape card or drawing one on the dry erase board. Help children describe what they see, using what they know about geometric properties (line, curves, number of sides).

- *Today we have a new shape to talk about. It's a rectangle. Who can tell me what you see when you look at this rectangle?*
  (Encourage children to talk about lines, sides, and how this shape might be similar to or different from a square.)

Introduce the concept that the different sizes and orientations of shapes — triangles as an example — still make them triangles . Do this by drawing a small "regular" triangle and a large triangle with each side a different length on the dry erase board.

- *Let's count the number of sides on this small triangle. Let's count the number of sides on this big triangle. They both have three sides, so they are both triangles!*
  (Be sure children count along with you as together you confirm that the two shapes are both triangles with the same number of sides.)

- *Now suppose I turned them upside down. Let's count the number of sides again. What do we think now, are they still triangles?*
  (Have children count the number of sides again to confirm the two shapes are still triangles no matter what direction they face. Count the sides one more time, reminding children that triangles always have three sides, and three sides always mean a triangle.)

2. Introduce Math Detective Journal Activity

Tell children their job as Math Detectives today is to hunt for shapes in the classroom (circles, triangles, squares, rectangles). Model identifying a shape from the classroom — a table in the shape of a circle, or a book in the shape of a square — and drawing it before the hunt.

- *Today, we're going to hunt for circles, triangles, squares, and rectangles around the classroom. I see a circle. It's the _____ (e.g., top of our table). Do you see any shapes around you?*
  (Guide discussion to talk about shapes of named objects. Model drawing shapes on the dry erase board.)

Leave shape cards on the table to help children draw the shapes of the objects they find in their Math Detective Journals.

- E*ach time you find a shape, come back to the Math Detective table to draw it in your journals.*
  (Help children find examples in the room. Some may be found in places like the block area and dramatic play area. Help children draw shapes found, using shape cards as necessary.)

Have children share drawings and talk about what they found. Use this discussion as a transition into playing Simple Shape Concentration.

- *Math Detectives, who wants to share the shapes you found in the classroom?*
  (Use the large shape cards or dry erase board to review shapes the children found. Point out the continuous curves of circles and the lines of triangles, squares, and rectangles.)

- *I also have another place where I see shapes — on a new game we will learn to play today!*
  (Hold up some of the Simple Shape Concentration cards.)

3. Introduce Simple Shape Concentration

Introduce the card game Simple Shape Concentration by holding up each card in the deck, naming each shape (circle, triangle, square, rectangle), and describing each one's geometric properties (lines, sides, and curves).

- *Let's name all of the shapes on our cards! Who sees a shape they know?*
  (Encourage children to identify shapes they know on the cards, and assist in naming shapes they do not know. Focus on key geometric ideas, like counting sides, and that squares have all sides the same length. Some children may note that triangles and rectangles *can* have sides that are the same length, but can also have sides of different lengths.)

Explain how to play the game, and remind children that it will be available during Center Time.

- *Now, let's learn how to play the game! First, mix the cards and put them with the shape side down on the table in rows.*
  (Align the cards in two even rows.)

- *When it's your turn, turn over two cards, and say the name of the two shapes. Then figure out if they match.*
  (Model turning cards face up, saying the shapes' names, and thinking out loud how you know the cards match or do not match. Focus on geometric properties, such as the number of sides, noting that squares have sides of the same length, and that circles are a curve that goes all the way around.)

- *If the cards match, pick them up and put them in front of you. If they don't match, turn them back over, but try to remember them for your next turn! You can play this with a partner during Center Time this week!*
  (Model picking up two matching cards and two non-matching cards.)

Computer Center

Crystals Rule

Skills

- Review counting from 1–5
- Review number identification 1–5

Ribbit

Skills

- Review counting from 0–10
- Review number identification 0–10

Overview

During **Computer Center Time**, pairs of children play focus games, reviewing math skills covered during the week. This week the focus games are ***Crystals Rule*** and ***Ribbit***. Since this is the first time children are using laptops to play games, model how to use the mouse to move and choose objects on the screen. Compare and contrast the movement of the mouse to the use of their fingers to move or choose objects on the Interactive Whiteboard (IWB). Encourage partner game play and help children focus on the math in the games.

1. Introduce the Computer Center

Introduce children to the area where they will regularly use the laptop computers, and establish Computer Center rules, such as: two children can play per computer; children should use headphones so they can hear the games; children should take turns choosing games and controlling the mouse.

Tell children that pairs are expected to collaborate, share, and take turns as they play, counting out loud or talking to each other to point out math in the games.

- *This is where we will set up laptop computers during Computer Center Time. You can work with a partner to play the games we try out on the Interactive Whiteboard. Here's how you get to the games.*
  (Model how to select a game from the website.)

- *Remember to work together and take turns using the mouse and choosing a game to play. I want to hear some good Math Detective talk when I come over, so be sure to talk to each other about the numbers, and shapes, and other math you see in the games.*
  (Model moving the mouse back and forth between the two children and make sure they know how to put on headphones.)

Model one example of how to count out loud while playing *Crystals Rule*, and how using a mouse is different than using your finger on the Interactive Whiteboard (IWB).

- *To answer May's question, I can use the mouse to click on the die and count as I slide it over to figure out how many I need altogether. One, two. I need two dice altogether. Now I need to click on the picture with the numeral 2 and two die.*
  (Model how to play one round of the game, talking about "clicking" the mouse and thinking out loud to figure out how to answer the question of "how many.")

Model one example of math talk out loud while playing *Ribbit*.

- *Let's count the frogs. One, two, three. There are three frogs altogether. Let's add one frog. Now there are four frogs altogether. Let's add another. Now there are five frogs.*
  (Model counting as you add frogs.)

- *Let's take away one frog. Now there are four frogs altogether. Let's take away another frog. Now there are three frogs altogether.*
  (Model counting as you take frogs away.)

Encourage children to work independently in pairs.

- *Now you try with a partner!*

Challenge Game Play

Ribbit (Curious George)

George is playing maestro with an orchestra of frogs. Help him create music by changing the number of frogs on the pond — you can add frogs to the pond orchestra with the + sign or subtract them with the – sign. Adding up to 10 frogs to the pond will help children review counting from 0–10.

Overview

During **Circle Time**, play ***Ribbit*** with children on the ***Interactive White Board*** (IWB). As you demonstrate how to play the game, use this opportunity to talk about **counting** and **number identification from 0 to 10** using a number line.

Skills and other important points to cover

- Introduce number line from 0 to 10
- Introduce counting from 0 to 10
- Introduce number identification from 0 to 10

What you will need

- Interactive Whiteboard (IWB)
- Curious George: *Ribbit* game
- Classroom Number Line

Challenge Game Play

TIMING GOAL: 25 minutes

1. Warm-up

Invite all children to the Interactive Whiteboard (IWB) area to play Ribbit, a new game on the Interactive Whiteboard (IWB).

Begin by reviewing counting from 1 to 5. Encourage children to count using their fingers. Then, introduce counting from 0 to 10 using a number line and then your fingers.

- *Let's practice counting to 5. How many fingers do we have altogether on this hand?*
  (Model counting pointing to your fingers on one hand from 1 to 5. Review the meaning of "altogether," using your fingers as an example.)

- *Okay, now, let's count higher, up to 10! Can you try counting with me?*
  (Model counting, pointing to the numerals on the number line first. Then count from 0 to 10 using your fingers. Remind children that 0 fingers means none of your fingers.)

2. Introduce Challenge Game

Model counting how many frogs there are altogether. Encourage children to count out loud with you.

- *Let's count the frogs. One, two, three. There are three frogs altogether.*
  (Model counting and pointing to each frog, emphasizing how many frogs there are altogether.)

Model adding and subtracting frogs to play *Ribbit*. Encourage children to count out loud with you when deciding how many frogs there are altogether.

Point to the numeral on the bottom right as a way to check how many frogs there are altogether on the screen.

- *Let's add one frog using this "+" sign. Now there are four frogs altogether. One, two, three, four. Let's add another. Now, there are five frogs.*
  (Model counting as you use the "+" button to add frogs all the way up to 10. Say the new number of frogs and point to the numeral on the screen each time you add a frog.)

- *Now, let's take away one frog. One, two, three, four, five, six, seven, eight, nine. Now, there are nine frogs altogether. Let's take away another frog. Now, there are eight frogs altogether.*
  (Model counting as you use the "-" button to subtract frogs one at a time. Say the new number of frogs and point to the numeral on the screen each time you subtract a frog.)

Allow children, or several volunteers, to have a turn playing *Ribbit*.

3. Wrap-up

Review the concepts covered in the challenge game — counting and number identification from 0 to 10.

- *Let's think back to what we learned today. We talked about counting, numbers, adding, taking away, and altogether.*
  (Encourage children to tell you what they learned from playing the game.)

Count out loud from 1 to 10, and have children count with their fingers. Model counting using a number line.

Remind children they will have another chance to play the game with a partner during Computer Center Time.

- *Remember you can play this game with a partner during Computer Center Time!*

Computer Center

Crystals Rule

Skills

- Review counting from 1–5
- Review number identification 1–5

Ribbit

Skills

- Review counting from 0–10
- Review number identification 0–10

Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Crystals Rule*** and ***Ribbit***. Children review math skills covered in the week.

Remind children to count out loud and to talk to each other about the math while paying the games. Encourage partner game play, and help children focus on the math in the games.

Video Co-viewing

Train Master (Curious George)

During a trip to the train station, George needs to place trains in order. In this video, George will help children review counting and identifying numbers from 5–9. As George plays "Train Master" for a day, he also will help children develop an understanding of the relative position and sequence of whole numbers, as well as review some simple shapes (triangles, rectangles).

Overview

During **Circle Time**, watch ***Train Master*** with children on the **Interactive Whiteboard** (IWB). Look and listen for key pause points (marked with ⏸ and a "beep"), and use them as opportunities to ask questions to get children talking about math.

Skills and other important points to cover

- Review counting sides of simple shapes: triangles and rectangles
- Review counting from 5 to 9
- Review number identification from 5 to 9

What you will need

- Interactive Whiteboard (IWB)
- Curious George: *Train Master* video (11:08 minutes)
- Classroom number line

Video Co-Viewing Activity

TIMING GOAL: 25 minutes

1. Warm Up

Invite all children to the IWB area to watch Train Master on the IWB.

- *Today we're going to watch a short video about a monkey named Curious George. Do you know George?*
  (If children are unfamiliar with Curious George, take time to provide quick background information to familiarize them.)

Who is Curious George?

Curious George is a little monkey who wants to know more about new things. Based on the popular children's book, George goes on adventures with his friend, the man in the yellow hat, to explore the curious things happening in the world around him.

Review examples of math you've covered so far — such as counting from 0 to 9, and naming simple shapes (triangles and rectangles).

- *Remember, Math Detectives, while we are watching, our job is to find the math in the video. Remember, shapes and numbers are examples of math. What shapes do you think we'll see? What numbers do you think we'll see?*
  (Encourage children to name simple shapes and predict numbers they may see in the video. Use a number line to point to numerals the children name.)
- *Let's get ready to do some math detecting by counting from 0 to 9.*
  (Have children count from 0 to 9 using their fingers. Count from 0 to 9 again, pointing to each numeral on the number line.)

Remind children that you'll stop the video several times to talk about what's happening and to talk about math they see in the video.

Start the video.

2. Video Co-Viewing (with Pause Points)

1. 0:35 — Bill is talking on the phone and flying a kite while waiting for his train at the train station.

Briefly talk about how a train schedule tells the times that trains leave and arrive at stations. Encourage children to count out loud from 5 to 9 while you point to the train numbers on the train schedule.

- *Math Detectives, Bill said he's arriving on the number 7 train at 3:00 pm. Do you know what a train schedule is? A train schedule tells you the time a train will arrive at and leave a station.*
  (Point to the train schedule, focusing on the number 7 train.)

- *Do you see the train numbers on the schedule? Let's say the numbers of the trains on the schedule.*
  (Model counting from 5 to 9, pointing to numerals on the schedule.)

Ask children to predict what will happen next in the video.

Resume video.

1. 4:22 — The Station Master and his brother are holding up a triangle sandwich and a rectangle sandwich.

Identify the shapes of the sandwiches (triangle and rectangle). Review what a "side" is, and model counting the sides of the triangle and rectangle sandwiches.

- *Look at the sandwiches. How many sandwiches are there altogether? Can you tell me about the shapes of the sandwiches?*
  (Model counting the total number of sandwiches. Guide the discussion to talk about the triangular and rectangular shapes of the sandwiches.)

- *The sides of the triangle and rectangle sandwiches look different. Let's look at the triangle sandwich. Let's count the sides. One, two, three. A triangle has three sides altogether.*
  (Model counting and tracing each side as you count out loud.)

- *A rectangle has two long sides and two short sides. Let's count the sides of the rectangle sandwich. One, two, three, four. A rectangle has four sides altogether.*
  (Model counting and tracing each side as you count out loud. Use two fingers to show the two long sides and two short sides.)

Think out loud while you compare and contrast the sandwiches' shapes (triangle and rectangle), focusing on the number of sides of each shape, that the sides are straight lines, and that neither shape has any curves.

- *The triangle sandwich has three sides. The rectangle sandwich has four sides. Which sandwich has more sides? Do either of these sandwiches have curves?*
  (Model comparing and contrasting the two sandwiches. Guide the discussion to talk about how the sandwiches have sides that are straight lines.)

Ask children to predict what will happen next in the video.

Resume video.

1. 5:11 — The number 8 train is ahead of the number 7 train. Trains number 7, 8, and 9 are out of order.

Point out that the number 8 train is out of order. Encourage children to count out loud from 0 to 9 while you point to the numerals on a number line.

- *Uh-oh! The number 8 train is out of order. Where should it go? Let's first practice counting to 9.*
  (Point to the number 8 train. Model counting from 0 to 9 while you point to each numeral on the number line.)

Use the number line to figure out where the number 8 train should be, using words like "before" and "after."

- *Where do you think the number 8 train should be? It should be after the number 7 train because eight comes after seven. Seven, eight, nine.*
  (Point to the number 8 train and then to the space between the 7 and 9 trains, indicating that is the correct location for the number 8 train. Use the classroom number line to show 7, 8, 9 in order.)

Ask children to predict what will happen next in the video.

Resume video.

1. 10:30 — Trains 5–9 are in numerical order, followed by train number 356.

Think out loud to help children figure out if these trains are in order. Encourage children to say the train numbers with you, using the classroom number line to compare order.

- *Let's say the train numbers together. Five, six, seven, eight, nine.*
  (Model counting and pointing to each train. Encourage children to count out loud.)

- *Detectives, are these trains in order? Let's use this number line to find out. Let's start at 5. Five, six, seven, eight, nine. Is this the same order as the trains?*
  (Model counting and pointing to each numeral on the number line. Encourage children to count out loud.)

Ask children to predict what will happen next in the video.

Resume video. End 11:08

3. Wrap Up

Review the concepts covered in the video — counting from 5 to 9 and shapes: triangles and rectangles. Encourage children to count out loud from 5 to 9 and then from 0 to 9. Have children count with their fingers.

- *Let's think back to the math we learned today. What are some numbers or shapes we talked about today?*
  (Encourage children to tell you what they remember from the lesson. Guide discussions to talk about numbers from 5 to 9 and shapes: triangle and rectangle.)

Encourage the children to sky-draw shapes (triangles and rectangles), and to count the sides of each shape.

- *Let's draw a triangle in the air. One, two, three. A triangle has three sides altogether.*
  (Model sky-drawing a triangle with the children. Count the sides as you sky-draw.)
- *Now, let's draw a rectangle. One, two, three, four. A rectangle has four sides altogether.*
  (Model sky-drawing a rectangle with the children. Count the sides as you sky-draw.)

Remind children that, as Math Detectives, they should always listen carefully and keep their eyes open to find math all around!

Computer Center

Count with Allie

Skills

- Introduce number words from 1 to 20
- Introduce numeral identification from 1 to 20
- Introduce counting and cardinality from 1 to 20

Apple Picking

Skills

- Introduce counting from 0 to 19
- Introduce number identification from 0 to 19
- Introduce identifying a missing number on a number line from 0 to 19

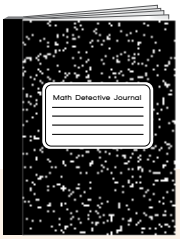
Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Count with Allie*** and ***Apple Picking.*** Children review math skills covered in the week.

Remind children to count out loud and talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*



Math Detective Journal

Math Detective Journal

During Math Detective Journal Time, help children hunt for quantities of items (1–5) around the classroom, then draw examples in their journals using shapes to represent the objects they've found. Children share what they've drawn and compare the quantities they've identified.

NUMBO 0–5

Children play this alternate version of the game BINGO to review identifying numbers 0–5. Children take turns selecting numbers from a pile and saying the number chosen out loud to their partner. The child finds the number on his/her NUMBO board and covers it with a cover chip. When the entire board is covered with chips the game is won, and partners switch roles and play again.

Overview

During **Small Group Time**, review shapes and counting as children search around the room for quantities of items up to five to represent as part of their **Math Detective Journal** activity. Help children identify numbers 0–5 as you introduce the **Hands-On Activity "NUMBO 0–5."**

Skills and other important points to cover

- Introduce one-to-one correspondence and cardinality for one to five objects
- Review simple shapes and geometric properties: circle, triangles, square, rectangles, lines, and curves
- Review number identification from 0 to 5

What you will need

- Math Detective Journals (one per child)
- Crayons
- Large shape and geometric properties cards (circle, triangle, square, rectangle, line, curve)
- Dry erase boards, markers, and erasers
- NUMBO 0–5 game boards and calling cards
- Cover chips

Math Detective Journal

TIMING GOAL: 20 minutes

1. Warm Up

Invite children to the Small Group area to review being Math Detectives.

Review some of the math concepts you've discussed previously — shapes (circle, triangle, square, and rectangle), geometric properties (lines, curves), and counting from 0–5 to find out how many altogether.

> *Today we are going to continue with our special job! Like last time, we are going to be Math Detectives! Who remembers some math we talked about?*
> (Review being a Math Detective, who looks for information to answer a question or solve a problem with math. Guide the discussion to the specific activities, such as playing *Ribbit* and how you counted to find out how many frogs there were altogether.)

Draw a circle, triangle, square, and rectangle on the dry erase board, or use the large shape cards and have children name the shapes and sky-draw them.

> *Last week we looked for different shapes and found circles, triangles, squares, and rectangles. Who can tell us which one is the triangle? The circle? The rectangle? The square?*
> (Using the dry erase board to draw shapes or holding up picture cards, pick volunteers to identify each shape and its geometric properties such as sides and curve.)

Using the dry erase board, model that triangles of different sizes are still triangles. Repeat with circles of different sizes.

> *What if I draw a really big triangle, or a really small one — is it still a triangle?*
> (Draw the shapes using the dry erase board, using different sizes and rotating the board upside down to show that it is still a triangle. Repeat with a large and small circle.)

2. Introduce Math Detective Journal Activity

Tell children their job as Math Detectives today is to hunt around the room for groups of objects. Describe how they will start by finding one item and work their way up to finding groups of five items, and draw each quantity or group in their journals.

Model the activity by offering an example to get them started, such as "one table."

> *Today, we're going to hunt for different quantities or groups of things in the classroom. We will start with "one." I see a table. It's one table. Do you see other things that we can count as one?*
> (Guide discussion to talk about the named objects valued as one.)

Model representing "one table" using a shape on the dry erase board, being sure to use a shape that is closest to the shape of the object (e.g. if the table is round, use a circle; if the table is rectangular, use a rectangle).

- *Now that we have "one" thing — our one table — I'm going to draw a circle to represent our one thing, our one table.*
  (Draw one circle on the dry erase board.)

Ask children to find their own quantities of items in the classroom, beginning with one. Remind children that each time they find an object or objects representing the quantity they are looking for, they should return to the table to draw the quantity (using shapes) in their Math Detective Journals.

- *Each time you find a group of things, come back to the Math Detective table to draw them in your journals. Then we'll figure out which quantity or group of things to look for next.*
  (Help children draw the quantities of items they find in their Journals. Then help them figure out what quantity they should look for next. For instance, two chairs, three plants, four crayons, five fingers.)

Have children share drawings and talk about the quantities they found. Use this discussion as a transition into NUMBO.

- *Math Detectives, who wants to share the quantities of things you found in the classroom?*
  (Find examples that can be shared with the group in children's Math Detective Journals.)

- *Do you know where else I found numbers? On a new game we're going to learn today: NUMBO!*
  (Hold up a NUMBO Board.)

3. Introduce NUMBO 0–5

Introduce the game NUMBO 0–5 by holding up a NUMBO board. As you point to each number on a NUMBO board, ask for a volunteer to identify it.

- *This game is called "NUMBO." It is about naming and identifying numbers. This is a NUMBO playing board. It has numbers printed on it. I want you to help me read all of the numbers on the NUMBO board.*
  (Have the children read each number out loud as you point to it.)

Explain how to play the game, selecting a child to be your playing partner. Remind children that the game will be available during Center Time.

- *Now, let's learn how to play the game! First, mix the cards and put them in a stack with the number side down on the table. When you play this game, you will play with a partner. You will take turns calling out the numbers and covering them on the NUMBO Board. Who will be my partner to help demonstrate the game?*
  (Stack cards in a pile. Select a child to play the game with you. Have your partner call out the numbers, while you cover them on the NUMBO board with a cover chip so that all can see.)

- *When all the numbers on the board are covered with cover chips, the game is won. Then I switch with my partner — I call out the numbers from the cards, and my partner covers the numbers on her NUMBO board.*
  (Model switching roles and playing the game again.)

Easy Game Play

Count with Allie (Curious George)

Allies' picture book is filled with all sorts of fun things, like trucks, dogs, and crayons! Click the numbers to reveal the picture on the page. Click on Allie to count along with her. Flipping through the pages of the book will introduce children to number words from 1 to 20, and numerals from 11 to 20.

Overview

During **Small Group Time**, demonstrate how to play ***Count with Allie*** on the **Interactive Whiteboard** (IWB). Use game play as an opportunity to talk about **number words from 1 to 20** and **numbers from 11 to 20** as you call on individual children to try out the game on the **Interactive Whiteboard** (IWB). Remind children of **basic game play rules**.

Skills and other important points to cover

- Introduce number words from 1 to 20
- Introduce counting and cardinality from 11 to 20
- Introduce numeral identification from 11 to 20

What you will need

- Interactive Whiteboard (IWB)
- Curious George: *Count with Allie* game

Easy Game Play

TIMING GOAL: 10 minutes

1. Warm Up

Invite children to the IWB area and review counting from 0 to 9 and the shapes identified in *Train Master* — triangles and rectangles.

- *Today, we're going to play a new game on the Interactive Whiteboard. But first, can you count with me from zero to nine?*
  (Point to the numerals on the number line as children count out loud.)

- *Who remembers the shapes Curious George saw at the train station? Can you name any of them?*
  (Help children name rectangle and triangle, drawing the shapes on a dry erase board if necessary.)

2. Introduce Easy Game

Remind children of basic game play rules — only one child can touch the IWB at one time, and they must take turns playing.

- *Today we are going to play another game on the Interactive White Board! But we have to be careful, only one of us can touch the board at a time, and we have to take turns.*
  (Model how touching the board makes things happen. Load the game *Count with Allie*.)

Model how to play *Count with Allie* by clicking on the number at the bottom of the screen. Think out loud as you click on Allie so she can count the objects on the page.

- *Now, let's play* Count with Allie. *We can use our finger to point to a number on the Interactive Whiteboard to hear Allie say a number. We can use our finger again to tap Allie to hear her count the objects so we can count along with her.*
  (Model pointing to a number and then to Allie. Say the number as you point to it, and model touching the objects on the page as they highlight as you count along with Allie.)

Walk children through two examples, then call volunteers up to play the game, asking them to count out loud during their turns.

- *How can we check that Allie is saying the right number?*
  (Encourage children to count the number of objects out loud to verify the number that Allie says. Encourage children to click on Allie so they can count along with her as the objects are highlighted.)

Remind children that during Center Time they will play Count with Allie with a partner on a computer using a mouse.

- *During Computer Center Time, you can play this game again with a partner! But instead of touching the screen, you'll use the mouse to click on numbers and to on Allie.*

3. Wrap Up

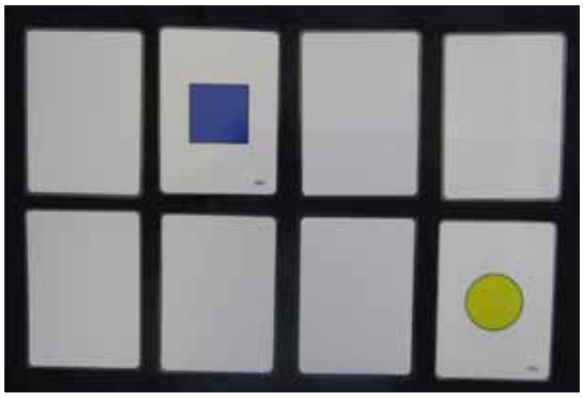
Review numbers from 1 to 20. Review counting as a way to find out how many objects you have altogether. Model counting from 1 to 20 by pointing to numerals on the number line.

- *All right, Math Detectives! Let's think about what we learned today. What numbers did we spot while playing Count with Allie? When we want to check how many we have altogether, can you remember what we have to do?*
  (Guide the discussion to talk about counting, using fingers or a number line, and pointing to objects while counting.)

- *Let's finish by counting together from 1 to 20!*
  (Model counting out loud, pointing to the numerals on the number line.)

Hands-on Center

Simple Shape Concentration



Skills

- Review simple shapes and geometric properties: circles, triangles, squares, and rectangles

Materials

- Simple Shape Concentration cards

NUMBO 0–5

Skills

- Review numeral identification from 0 to 5

Materials

- NUMBO 0–5 game boards and calling cards
- Cover chips

Overview

During **Hands-On Center Time**, small groups or pairs of children play **Simple Shape Concentration** and **NUMBO 0–5**, reviewing math skills covered in the week. Since this is the children's first time doing activities in the Hands-on Centers, walk around the room to encourage partner game play and facilitate math talk.

1. Introduce the Hands-On Centers

Introduce children to the Hands-On Center area.

Establish Hands-On Center rules such as: work in pairs or small groups; share games; take turns; and talk out loud to count or point out math in the games.

Let children know that all Hands-On activities you play during the week will be available to them in the Hands-On Center area.

Model how to play Simple Shape Concentration, naming each shape on the cards.

> *Remember that to play this game, I have to mix the cards and put them with the shape side down on the table. When it's my turn, I turn over two cards, say the name of the two shapes, and then figure out if they match.*
> (Model turning cards face up, saying shapes' names, describing the shapes, and how you know if they match or don't match.)

Model how to play NUMBO 0–5 with a partner, naming the numbers drawn from the NUMBO calling card deck.

> *Now my partner has a NUMBO game board. I'm going to take a card from the pile of NUMBO calling cards and say the number I see — I could use help from my partner, too, saying the name of the number. Next, my partner finds the number on his/her NUMBO board and covers it with a chip.*
> (Select a child to be your partner as you demonstrate how to play NUMBO. Model taking a number off the top of the pile and saying the number. Model saying the number again as your partner covers the number with a chip on his/her board.)

Computer Center

Count with Allie

Skills

- Review number words from 1 to 20
- Review numeral identification from 1 to 20
- Review counting and cardinality from 1 to 20

Apple Picking

Skills

- Review counting from 0 to 19
- Review numeral identification from 0 to 19
- Review identifying a missing numeral on a number line from 0 to 19

Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Count with Allie*** and ***Apple Picking.*** Children review math skills covered in the week.

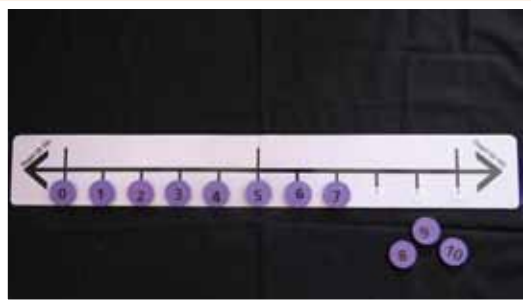
Remind children to count out loud and to talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*

Math Circle Routine

Oops! Number Line 0–10



Using the **Oops! Number Line 0–10,** help children create a number line by placing all of the number tiles in the correct sequence. To introduce the activity this week, begin with a completed Oops! Number Line 0–10 and first remove two tiles. Keep the tiles hidden while you discuss which numbers are missing. Reveal the missing tiles and think out loud as you figure out where the missing tiles belong, using the classroom number line and the numbers before and after the missing numbers as reference. Repeat the activity by removing three tiles and have child volunteers place the three tiles back on the Oops! Number Line. If a child makes a mistake, say, "Oops!" and remove the misplaced tile using the opportunity to discuss how you know the tile was misplaced. When the Oops! Number Line is completely filled with numbers in the correct sequential order, the activity is completed.

Overview

During **Circle Time,** demonstrate how to use the **Oops! Number Line 0–10** and **number tiles** as a number line to **count, recognize numbers,** and **place numbers 0–10 in the correct sequence**.

Skills and other important points to cover

- Introduce Oops! Number Line 0–10
- Introduce assigning appropriate relative values (greater/less/more than, before, after) from 0 to 10 using a number line
- Introduce identifying a missing number on a number line from 0 to 10

What you will need

- Oops! Number Line 0–10
- Oops! Number Tiles 0–10
- Classroom Number Line

Math Circle Routine

TIMING GOAL: 10 minutes

1. Warm-up Activity

Invite all children to the Circle Time area.

Using the classroom number line and completed Oops! Number Line 0–10, review the concept of a number line. Ask children to identify a number they know on the number line, and the numbers that come before and after it.

- *Who can tell me something you see on this number line?*
  (Help children talk about how there are numbers on a number line and that the numbers always go in order. Demonstrate this by running your fingers along the edge of the completed Oops! Number Line from left to right.)

- *Can someone find a number on the number line for me? What number is right after that number? What number is right before?*
  (Use any number selected to demonstrate that a number comes before or after it on a number line.)

2. Complete the Oops! Number Line 0–10

Introduce the Oops! Number Line as a type of number line. This one starts with 0 and ends with 10. Remind children that number lines can start or end with any number, but that the numbers always go in order.

Count from 0–10, saying each number on the number line out loud with the children.

- *Our OOPS! Number Line starts with zero and ends with ten, but a number line can start and end with any number. What number does this number line begin with? End with?*
  (Use the Oops! Number Line as an example of a number line that begins with 0 and ends with 10.)

- *Math Detectives, today we are going to complete our Oops! Number Line. Before we play, let's count the numbers out loud together.*
  (Count out loud from 0 to 10 with the children as you point to the numerals on the Oops! Number Line.)

Remind children that the Oops! Number Line is a complete 0–10 number line.

Then remove any two number tiles from the Oops! Number Line and hold them in your hand. Think out loud as you model how to figure out where the missing tiles go to complete the Oops! Number Line. Use language such as which numbers are before and after the missing number.

- *I'm going to take two numbers off the Oops! Number Line. Now, I need to put these two numbers back in the correct place. I have the numbers ___ and ___. How can I figure out where I should put them on the number line?*
  (Remove two tiles, and show the children the tiles while reading the numerals on the tiles. Allow children to talk about where they think the tiles should go without saying whether they are correct or incorrect.)

- *Those were some good ideas. One way I know to figure out where the number tiles go is to count. I'm going to count until I get to a missing number and figure out which number I should put there. I can use the numbers that come before and after my missing number to help me figure it out.*
  (Model counting from 0 and when you encounter a missing number, say the name of the number that is missing and then identify the tile that belongs in the missing place. Repeat the process to replace the second tile. Review your answer by counting the number before the replaced tile, the replaced tile and the number after the replaced tile.)

Repeat the activity, removing three number tiles from the Oops! Number Line and hiding them in your hands. Mix the three tiles and give one to each of three children, asking them to identify the number tile they received.

- *Now I'm going to take three numbers off the Oops! Number Line. We have three places on the number line that are missing numbers. How can we figure out which number tiles are missing from the number line?*
  (Remove three number tiles that are not all next to each other from the Oops! Number Line, hiding the tiles in your hand. Allow children to offer their predictions without saying whether they are correct or incorrect.)

- *Can I have three volunteers? I'm going to give each of you a number tile to put on the correct place on the number line. Can you tell me what number you have?*
  (Pass out the number tiles to three children. Help the children read the numerals on their tiles out loud.)

Invite the children to place their tiles on the Oops! Number Line, thinking out loud as you help them figure out where the tiles go. Use strategies like counting, identifying the number before and after their tile, and using the classroom number line as a guide.

If a child makes a mistake replacing a tile, say "Oops!" and remove the tile, using the opportunity to explain how you know the child made a mistake.

- *If you have a number tile in your hand, come up to put it on the correct place on the number line. You can help each other figure out where to put the tiles.*
  (Invite children to come up to place the tiles on the number line. Encourage children to talk to one another to figure out where to place the tiles.)

- *Let's see, what number is before this missing number? What number is after this missing number?*
  (Help children figure out the missing numbers by asking questions such as, "Does the number come before/after the missing number?" If children need more help, tell the children to look at another completed number line. Use this strategy for each of the three missing numbers.)

Encourage children to check the tiles are correctly placed by counting from 0 to 10 on the completed Oops! Number Line. Consult the classroom number line as a reference.

- *Let's count to check if we're correct. Let's also look at this number line to compare and check if we're correct. Are we correct?*
  (Model counting, using the number line created by the children. Use the classroom number line to compare if the children have created a number line that is correct.)

3. Wrap Up

Review that the numbers on a number line go in order. Talk about how the farther from the zero you go, the bigger the numbers get, and how the closer you get to the zero, the smaller the numbers get.

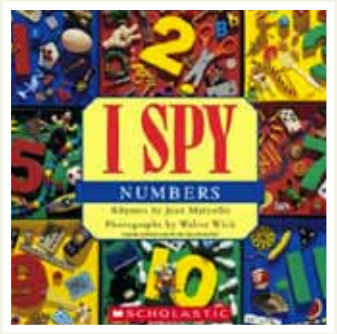
- *Who remembers what number our number line begins with? Ends with? The numbers on the number line between 0 and 10 always have to be in order.*
  (Help children remember that this number line begins with 0 and ends with 10. Guide discussion to talk about how the numbers on a number line are always in order.)

- *Looking at our completed number line, who can find a number MORE than the number 5?*
  (Point to the numeral 5 and talk about how you can tell that a number is more than 5 — it comes after the 5 on the number line. Talk about how a number bigger than 5 is farther from 0 and closer to 10.)

- *Looking at our completed number line, who can find a number that is LESS than the number 8?*
  (Point to the numeral 8 and talk about how you can tell that a number is less than 8 — it comes before 8 on the number line. Talk about how a number less than 8 is farther from 10 and is closer to 0.)

Guided Book Reading

I SPY NUMBERS



Embark on an I Spy adventure as your Math Detectives search for numbers from 1 to 9 hidden in a collection of objects. Then help children look for and count items that add up to the number they've found on each page.

Overview

During **Circle Time**, read ***I Spy Numbers,*** helping children search for and identify **numerals from 1 to 9**. Count objects one by one on each page, reinforcing that the last number you say when counting is how many objects there are **altogether**. Key pause points in the teacher's guide and book pages are included as opportunities to ask questions to get children talking about math.

Skills and other important points to cover

- Introduce cardinality for six to nine objects (review for one to five)
- Introduce one-to-one correspondence for six to nine objects (Review for one to five)
- Review numeral identification from 1 to 9

What you will need

- *I Spy Numbers* (book)
- Nine unifix cubes

Guided Book Reading

TIMING GOAL: 15 minutes

1. Warm Up

Invite all children to the Circle Time area to read the book, *I Spy Numbers.*

Review counting from 1 to 9 using unifix cubes. Point to each unifix cube as you count out loud, and remind children that the last number you say when counting is the number of objects altogether.

- *Let's warm up by doing some counting. Let's count how many unifix cubes I have altogether. 1-2-3-4-5-6-7-8-9 … there are 9 unifix cubes altogether.*
  (Place unifix cubes in a row in front of the children. Point to each cube as you count out loud with the children. Repeat the last number counted to indicate how many unifix cubes there are altogether.)

Hold up the *I Spy Numbers* book. Talk about what the word "spy" means. As you point, ask children to identify the numbers on the cover and ask them what they think the book will be about.

- *Today, we're going to read the book "I Spy Numbers." Does anyone know what it means to "spy" something? As Math Detectives, we're going to "spy" the numbers in this book!*
  (Talk about how "spying" means to observe or search for something. Tell children that, as Math Detectives, their job will be to observe and search for information about numbers.)
- *Who can help me find or "spy" a number on the cover of our book?*
  (Point to the numbers identified by the children.)
- *Looking at the cover of this book, what do you think this book will be about?*
  (Allow children to share their thoughts.)

2. Guided Book Reading (with Pause Points)

Pause at pages 5–6:

Have a volunteer point to the numeral 3 on the page as you say the name, and think out loud as you count the number of pigs (three pigs altogether).

- *Can my Math Detectives find the number three?*
  (Choose a volunteer to point to the numeral 3 on the page.)
- *I spy pigs, but I wonder how many there are altogether. Let's count them to figure it out.*
  (Point to each pig as you count out loud, reinforcing that the last number you say is how many pigs there are altogether.)

Pause at pages 11–12:

Point to the numeral 6 and ask for a volunteer to identify the number.

Then ask for another volunteer to count the number of colored blocks on the page. Reinforce that the last number counted is the number of blocks there are altogether

- *Let's look at this picture together. I spy a number. Can anyone tell me what that number is?*
  (Point to the numeral 6 as you ask for a volunteer to name the number.)

- *Which Math Detective can count how many colored blocks there are on the page?*
  (Have a different volunteer count the number of colored blocks out loud, pointing to each block as he/she counts. Reinforce that the last number counted is the number of blocks there are altogether.)

Pause at pages 15–16:

Ask for a volunteer to find the number 8 on the page as you say the name.

Ask children to estimate how many paint colors there are on the page, and guide discussion to how you can figure out how many there are altogether (by counting).

Have a volunteer count the paint colors to confirm, reinforcing that the last number counted is how many paint colors there are altogether.

- *Who can find the number eight on this page?*
  (Have a volunteer point to the numeral 8 on the page).

- *How many paint colors do you think there are on this page? How do you know?*
  (Point to the paint set and give children the opportunity to respond.)

- *How can we find out how many paint colors there altogether? By counting! Who can count the paint colors?*
  (Call on a volunteer to count the number of paint colors, reinforcing that the last number counted is the total number of paint colors altogether.)

3. Wrap Up

Review counting objects from 1 to 9 using the unifix cubes. Remind children that the last number you say when you count is the number of objects altogether.

- *Today we read a book about looking for, or "spying," numbers and counting groups of things. Does anyone remember what number we counted up to? Let's use our unifix cubes to count out loud again.*
  (Model counting the 9 unifix cubes out loud, pointing to each cube as you count it. Reinforce that the last number you say when counting is the amount of unifix cubes altogether.)

Computer Center

Count with Allie

Skills

- Review number words from 1 to 20
- Review number identification from 1 to 20
- Review counting and cardinality from 1 to 20

Apple Picking

Skills

- Review counting from 0 to 19
- Review number identification from 0 to 19
- Review identifying a missing number on a number line from 0 to 19

Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Count with Allie*** and ***Apple Picking.*** Children review math skills covered in the week.

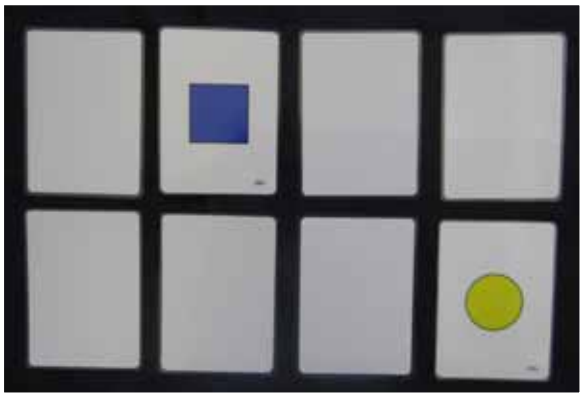
Remind children to count out loud and to talk to each other about the math while paying the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*

Hands-on Center

Simple Shape Concentration



Skills

- Review simple shapes and geometric properties: circles, triangles, squares, and rectangles

Materials

- *Simple Shape Concentration* cards

NUMBO 0–5

Skills

- Review numeral identification from 0 to 5

Materials

- NUMBO 0–5 game boards and calling cards
- Cover chips

Keep in Mind...

During **Center Time**, small groups or pairs of children play focus games ***Simple Shape Concentration*** and ***NUMBO 0–5.*** Children review math skills covered in the week.

Challenge Game Play

Apple Picking (Curious George)

George and Jumpy love apples, but some apples are missing! One of the floating apples in the water belongs in the number line. Find the floating apple with the correct number to complete the number line sequence. Filling in the missing numbers on a number line from 0 to 9 will help children understand how to identify missing numbers, and also will help children review number identifications from 0 to 9.

Overview

During **Circle Time**, play ***Apple Picking*** with children on the **Interactive Whiteboard** (IWB). As you demonstrate how to play the game, use this opportunity to talk about **counting, missing numbers,** and **number sequence** using a number line.

Skills and other important points to cover

- Review counting from 0 to 19
- Review numeral identification from 0 to 19
- Review identifying a missing number on a number line from 0 to 9 (Introduce from 10 to 19)

What you will need

- Interactive Whiteboard (IWB)
- Curious George: *Apple Picking* game
- Classroom number line

Challenge Game Play

TIMING GOAL: 25 minutes

1. Warm Up

Invite all children to the IWB area to play *Apple Picking*, a new game on the IWB. Before playing, review counting from 0 to 9 using a number line.

Have children identify the numbers after 7 and before 5, using the number line.

- *Let's use our number line to count! Math Detectives, let's count to nine!*
  (Point to each numeral on the number line as you count from 0 to 9.)

- *Now, let's find some numbers on our number line! Who can tell me what number comes after seven? What about the number that comes before five?*
  (Using the number line, point to the number 7 and then point to the number before and after it, saying the names of the numbers as you point. Repeat for the number 5, using the words "before" and "after'.")

2. Introduce Challenge Game

Model strategies for finding the missing number on the number line in *Apple Picking*, such as counting, figuring out the number that comes before and after the missing number, and using the classroom number line to compare.

- *This number line is missing a number! Let's count, using the number line to try to figure out what number is missing.*
  (Model counting out loud, pointing to each number on the number line, pausing at the missing number.)

- *Which apple do you think goes in here? I think we are missing the number three, because the number is after the number two, and before the number four. Which one of the apples floating in the water has a three on it?*
  (Point to each floating apple and read the number on each out loud. Model touching the apple with 3 on it to complete the number line.)

Model completing the next number line using a different strategy from the first example — for instance, reference the classroom number line to figure out what number is missing. Remind children that the numbers on the number line are always in order, but they can start and end with any number.

- *This time I'm going to use our classroom number line to compare and see what number is missing from George's number line.*
  (Model comparing each number on the classroom number line to the numbers on the number line in *Apple Picking* to determine which number is missing.)

❝ *Remember, Math Detectives, our number lines can start and end with any numbers, but the numbers always go in order!*
(Run your finger from left to right along the bottom of the classroom number line.)

Allow children, or several volunteers, to have a turn playing *Apple Picking*.

3. Wrap Up

Review the concepts covered in the challenge game — using a number line and finding a missing number on a number line.

❝ *Let's think back to what we learned today. We talked about counting, about using a number line, and about finding missing numbers on a number line.*
(Encourage children to tell you what they learned from playing the game.)

Remind children they will have another chance to play the game with a partner during Computer Center Time.

Computer Center

Count with Allie

Skills

- Review number words from one to twenty
- Review numeral identification from 1 to 20
- Review counting and cardinality from 1 to 20

Apple Picking

Skills

- Review counting from 0 to 19
- Review numeral identification from 0 to 19
- Review identifying a missing number on a number line from 0 to 19

Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Count with Allie*** and ***Apple Picking.*** Children review math skills covered in the week.

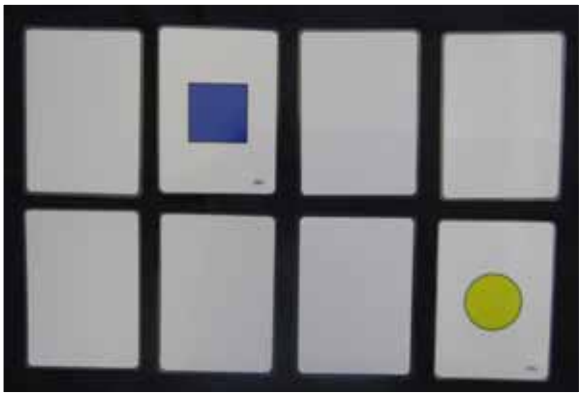
Remind children to count out loud and to talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*

Hands-on Center

Simple Shape Concentration



Skills

- Review simple shapes and geometric properties: circles, triangles, squares, and rectangles

Materials

- *Simple Shape Concentration* cards

NUMBO 0–5

Skills

- Review numeral identification from 0 to 5

Materials

- NUMBO 0–5 game boards and calling cards
- Cover chips

Keep in Mind…

During **Center Time**, small groups or pairs of children play focus games ***Simple Shape Concentration*** and ***NUMBO 0–5.*** Children review math skills covered in the week.

Video Co-viewing

Shutter Monkey (Curious George)

While helping a friend take pictures for a photography contest, George shows children that shapes are all around us. With his photographs of shapes in everyday life, children can review simple shapes and geometric properties (circles, triangles, squares, and curves).

Overview

During **Circle Time**, watch ***Shutter Monkey*** with children on the **Interactive Whiteboard** (IWB). Look and listen for key pause points (marked with ⏸ and a "beep"), and use them as opportunities to ask questions to get children talking about math. Introduce children to creating **pipe cleaner shapes** using ***Shutter Monkey* shape cards**.

Skills and other important points to cover

- Review simple shapes and geometric properties (circle, triangle, square, line, curve)
- Introduce counting corners (angles)
- Review counting sides

What you will need

- Interactive Whiteboard (IWB)
- Curious George: *Shutter Monkey* video (11:06 minutes)
- Classroom number line
- *Shutter Monkey* shape cards (circle, triangle, square, curve)
- Pipe cleaners (4)

Video Co-Viewing Activity

TIMING GOAL: 25 minutes

1. Warm Up

Invite all children to the Circle Time area to watch Shutter Monkey on the IWB.

Review examples of math covered so far, such as shapes, numbers, and counting. Ask children to tell you what they remember so far of all of your Math Detective work.

- *We've talked about a lot of math so far! I remember talking about shapes, like circles and triangles. I also remember we used our number line to count together. What other things do my Math Detectives remember us talking about?*
  (Offer examples of the math you've covered so far, and elicit ideas from children about what they remember learning.)

Review triangles and circles by sky-drawing both. Count the sides of the triangle as you sky-draw, and describe a circle as "a curve that goes all the way around."

- *Let's sky-draw a triangle and count the sides at the same time. Remember a triangle has three sides, or three lines that make it up. One, two, three. A triangle has three sides altogether.*
  (Model sky-drawing a triangle and counting the number of sides.)

- *Now, let's sky-draw a circle. Remember, a circle is a curve that goes all the way around.*
  (Model sky-drawing a circle, talking about the curve of a circle.)

Remind children you will pause the video to talk about the math they see.

Start the video.

2. Video Co-Viewing (with Pause Points)

1. 6:55 — George takes a photo of three firemen holding a hose in the shape of a triangle. A red dotted line outlines the triangle.

Identify the shape of the hose as a triangle. Sky-draw triangles with children.

- *Math Detectives, I see some math here! What shape do you see in George's photo? Can you sky-draw a triangle with me?*
  (Draw children's attention to the hose shaped like a triangle, tracing its three sides on the screen. Model and encourage children to sky-draw triangles.)

Encourage children to talk about the geometric properties of a triangle (sides and corners [angles]). Think out loud to figure out how many sides and corners (angles) a triangle has altogether.

- *Remember, this is a side. Let's count the sides. One, two, three. A triangle has three sides altogether.*
  (Point to and trace a side of the triangle on the IWB. Then model tracing and counting each side out loud. Encourage children to count out loud with you.)

- *This is called a corner (angle). A corner (angle) is where two lines, or two sides, come together. Let's count to see how many corners (angles) a triangle has. One, two, three. A triangle has three corners (angles) altogether.*
  (Point to a corner (angle) of the triangle on the IWB. Use your hands to model two lines coming together to make a corner (angle). Point and count the corners [angles] of the triangle out loud. Encourage children to count out loud with you.)

Ask children to predict what will happen next in the video.

Resume video.

7:43 — George takes a photo of the sidewalk in the shape of a circle. A red dotted line outlines the circle.

Identify the shape of the sidewalk as a circle. Sky-draw circles with children.

- *George took another photo. What shape do you see here? Can you sky-draw a circle with me?*
  (Draw children's attention to the sidewalk shaped like a circle, tracing its curve on the screen. Model and encourage children to sky-draw circles.)

Encourage children to talk about the geometric properties of a circle (curve). Think out loud to help children figure out if the circle has any sides or corners (angles).

- *Remember, a side is a straight line. Remember, a curve is a line that bends, like this. Does a circle have a side or a curve?*
  (Model sky-drawing a side and a curve. Guide discussion to talk about how a circle has a curve.)

Ask children to predict what will happen next in the video.

Resume video.

3. 8:30 — George takes a photo of trashcan lids that form a square. A red dotted line outlines the square.

Ask children to identify the shape of the trashcan lids (square). Sky-draw squares with children.

- *What shape do you see in this photo? Can you sky-draw a square with me?*
  (Guide discussion to talk about the trashcan lids that form a square. Model and encourage children to sky-draw squares.)

Encourage children to talk about the geometric properties of a square (sides and corners [angles]). Think out loud as you figure out how many sides and corners (angles) a square has altogether. Briefly mention a square is special because all its sides are the same length.

- *Remember, this is a side. Let's count the sides on the square. One, two, three, four. A square has four sides altogether. A square is special because all of the sides are the same size.*
  (Point and trace a side of the square on the IWB. Trace each side of the square as you count out loud. Encourage children to count with you. Briefly discuss how a square has four sides of the same length.)

- *Remember, this is a corner (angle). Let's count the corners (angles) on the square. One, two, three, four. A square has four corners (angles) altogether.*
  (Point to a corner [angle] of the square. Point to each corner [angle] of the square as you count out loud. Encourage children to count with you.)

Ask children to predict what will happen next in the video.

Resume video.

4. 9:06 — George takes a photo of himself as a curve. A red dotted line outlines the curve.

Encourage children to talk about George creating a curve with his body. Practice sky-drawing a curve or forming a curve with hands. Help children figure out which shape has a curve (circle).

- *How clever! George took a photo of himself. What shape is he making with his body? Can you make a curve with your hand?*
  (Guide discussion to talk about George forming a curve with his body. Model and encourage children to form a curve with their hands.)

- *Can you think of some things that have curves?*
  (Guide discussion to talk about things that have curves, such as wheels, spoons, round glasses, etc.)

Ask children to predict what will happen next in the video.

Resume video. End 11:06

3. Wrap-Up with Preview of Pipe Cleaner Shapes

Model bending pipe cleaners to make a curve and then a triangle. Hold up Shutter Monkey shape cards to compare the pipe cleaner shapes to the shapes seen in the video (triangle hose, George's body as a curve).

- *Math Detectives, do you see what I have here in my hand? It's a pipe cleaner. It can bend in any way I want it to bend. I'm going to bend it into a curve.*
  (Hold one pipe cleaner up high as you make a curve with it.)

- *Now, I'm going to make a triangle. I need three pipe cleaners to do that because a triangle has three sides altogether!*
  (Count as you join three pipe cleaners together to make the three sides of triangle.)

- *Let's look at these shape cards and the pipe cleaner curve (triangle). How are they similar? How are they different?*
  (Hold the Shutter Monkey shape card up in one hand and the pipe cleaner curve/triangle in the other hand. Rotate the cards and or pipe cleaners to vary the orientation. Guide discussions to talk about size and orientation of the curves/triangles.)

Tell children they will have the opportunity to make their own pipe cleaner shapes and geometric properties during Hands-On Center Time.

- *Let's review what we learned today. We saw three shapes and a curve! Let's name the shapes together: triangle, circle, square.*
  (Encourage children to tell you what they remember from the video. Hold up each Shutter Monkey shape card to review each shape and geometric property [curve].)

Remind children that, as Math Detectives, they should always listen carefully and keep their eyes open to find math all around!

Computer Center

Bug Catcher

Skills

- Review subitizing numbers 1–10
- Review comparing sets of numbers 1–10

Huff-Puff-a-Tron

Skills

- Review simple shapes (circle, triangle, square, and rectangle)

Keep in Mind...

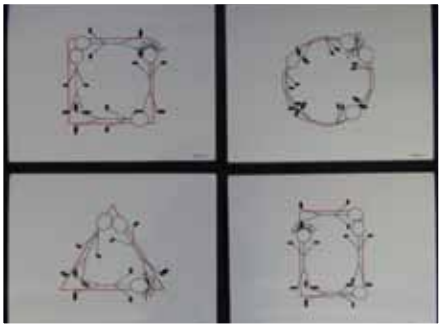
During **Computer Center Time**, pairs of children play focus games ***Bug Catcher*** and ***Huff-Puff-a-Tron***. Children review math skills covered in the week.

Remind children to count out loud, identify simple shapes, and talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Count with Allie*
- *Apple Picking*

Math Detective Journal



Math Detective Journal

During Math Detective Journal time, help children examine the construction and deconstruction of shapes. By reviewing straight lines, corners (angles) and curves, children review how they can draw circles, triangles, squares, and rectangles by combining the component parts (lines, curves) that make them. Children then translate the sides and curves of the shapes into representations of bodies to create body shape plans (pictures) that they draw in their journals and use to guide the physical enactment of **Body Shapes**, their second activity.

Body Shapes

Children select a shape plan from their Math Detective Journal to recreate using classmates' bodies. By combining bodies as straight and curved lines based on plans created in their Math Detective Journals children represent circles, triangles, squares, and rectangles. Briefly review making **Pipe Cleaner Shapes** using the Body Shape cards. Remind children the **Pipe Cleaner Shapes** activity will be available during Center Time.

Overview

During **Small Group Time**, review simple shapes and geometric properties with children to help them develop plans for shapes composed of body arrangements in their **Math Detective Journals**. Then, introduce the **Hands-On Activity, "Body Shapes,"** when children try out their plans on the classroom floor. Conclude with reviewing the **Pipe Cleaner Shapes** activity.

Skills and other important points to cover

- Introduce constructing and deconstructing shapes (circles, triangles, squares, rectangles)
- Review creating simple shapes with geometric properties: lines and curves (circle, triangle, rectangle, square)
- Review counting sides and corners (angles) of simple shapes (circles, triangles, squares, rectangles)

What you will need

- Math Detective Journals (one per child)
- Crayons
- Dry erase board, marker, and eraser
- Body Shape cards (circle, triangle, square, rectangle)
- Pipe cleaners (4)

Math Detective Journal

TIMING GOAL: 20 minutes

1. Warm Up

Invite children to the Small Group area to review shapes (circles, triangles, squares, rectangles) and geometric properties (lines, sides, and curves). Use the dry erase board to draw shapes to guide discussion.

- *Shapes are an important part of math. We have been learning about different properties of shapes. We know that some shapes are made of straight lines or sides and some are made from curves. Who can show me a shape that is made from straight lines? How many sides does it have? What is the name of the shape?*
  (Use the dry erase board to draw shapes so children can identify shapes with sides or with curves. Make sure they identify the shapes by name.)

Review the concepts of sides and corners (angles) of shapes, comparing sides to straight lines and corners (angles) to the place where sides meet. Help children count the sides and corners (angles) of those same shapes.

- *Straight lines make the sides of most of our shapes. Let's count the number of sides for each of the shapes. The corners (angles) of shapes are the places where sides meet. Let's count the number of corners (angles) for each shape.*
  (Help children count the number of sides for each shape using shapes drawn on the dry erase board. Review corners [angles] asking similar questions.)

2. Introduce Math Detective Journal Activity

Encourage children, as Math Detectives, to use what they know about the sides and corners (angles) of shapes to draw plans (or a picture) for shapes they will create with their bodies on the classroom floor. Encourage children to think about making shapes out of human bodies, just like George made a curve with his body.

- *Today, we are going to think about what it would take to make shapes using your bodies, just like George made a curve with his body. Let's look at the triangle. If we took this triangle apart what would we have?*
  (Help children focus on the straight lines that are the sides that make up the triangle drawn on your dry erase board. If they have trouble, on the dry erase board, draw the three sides in the shape of a triangle but with the lines disconnected. Ask children what they see.)

Encourage children to try to visualize the sides of the triangle as bodies put together to make the shape. Show children the example of a triangle composed of children's bodies on the Body Shape card.

- *Now, think if these lines were your bodies. How many sides are there in a triangle? How many bodies would we need to make a "body triangle?"*
  (Help children think about what they would need to know to be able to compose each body shape. Continue using a triangle as an example, help children think about decomposing the shapes.)

Briefly discuss the importance of plans. Highlight George using the damaged photos as a plan to take new photos.

- *Let's talk about plans. Why is it important to make plans? Plans are important because they help us think about what we need to do or look for before taking action. George used the ruined photos as a plan to think about which shapes he needed to take pictures of.*
  (Help children think and talk about what plans are, and the importance of having a plan for their body shapes.)

Show the children the remaining Body Shape cards (square, rectangle, circle). Develop and model drawing a sample plan together for the triangle before children draw their own plans using lines or stick figures. Encourage children to use what they know about shapes and geometric properties to create their own plans in their Math Detective Journals.

- *Let's look at this card– what do you see? What do we need to think about to make this shape using bodies?*
  (Help children identify and count the number of sides and corners [angles] in each shape using the Body Shape cards. Use that information to help them figure out how many bodies they need to make the shape and how the bodies would have to be placed to create a representation of the shape.)

- *In your journals, you're going to draw a plan. Let's first draw one together for a triangle. How many lines should I draw? I'm going to change these lines into people's bodies or "stick figures" by adding a circle for a head facing in the direction I want the body to go. How many children do we need to make a triangle out of our bodies?*
  (Model drawing stick figures, with a circle for the head, for the sides of a triangle. Tell children they can choose to draw their plans using just lines or stick figures. Talk about how many lines they need to draw and how that translates into bodies.)

3. Introduce Body Shapes Activity

Invite children to the Circle Time area or another space where children can create body shapes on the floor. Help children count and identify the number of bodies needed to create a triangle in one of the children's plans. Ask for volunteers to execute the plan.

- *Now that you've drawn your plans, we're going to make some body shapes. Before we create this shape, let's count out loud how many sides there are in this triangle.*
  (Help children count out loud the number of sides in the triangle drawn in one of the journals. Help children get into small groups and assign groups if necessary.)

- *I need three volunteers to help me show our friends how to make this shape. Look at this picture and use your bodies to make this shape on the floor. Make sure to hold hands or touch each other's feet to "close" the shape.*
  (Help children lie down on the floor to form a triangle. Talk about how the corners [angles] have to be closed.)

Encourage children to work in small groups to create some of the body shape plans. Help children execute plans by figuring out, selecting, and combining the number of needed children to create a shape on the floor.

❝ *We're going to work in small groups to make some shapes. Look at your plan and talk to each other about how many bodies you need to make the shape before trying to make the shape.*
(Help children form groups or assign them if necessary. Help children decide how many bodies are needed and help them lie down on the floor to create the shapes.)

When children finish making their body shapes, demonstrate making a shape using pipe cleaners, with the Body Shape cards as plans. Remind children they will be able to make pipe cleaner shapes during Center Time.

❝ *Remember we made shapes with pipe cleaners after we watched the video? Let's make a pipe cleaner square of the body shape you see on this card. One, two, three, four. A square has four sides, and my pipe cleaner square also has four sides altogether.*
(Demonstrate bending a pipe cleaner into the shape of a square or combing four pipe cleaners to make a square. Compare the pipe cleaner shape to the Body Shape square card. Model and talk about how a square has four sides altogether.)

Easy Game Play

Bug Catcher (Curious George)

Are there more blue bugs or red bugs? George is using a net to collect bugs of all colors and needs help figuring out if there are more blue or red bugs. Identifying which group of bugs has more, and then catching and counting the bugs to confirm, will introduce children to subitizing and comparing sets.

Overview

During **Small Group Time**, demonstrate how to play ***Bug Catcher*** on the **Interactive Whiteboard** (IWB). Use game play as an opportunity to practice **subitizing** and **comparing sets from 1 to 10** as you call on individual children to try out the game on the Interactive Whiteboard (IWB). Remind children of **basic game play rules**.

Skills and other important points to cover

- Introduce subitizing from 1 to 10
- Introduce comparing sets from 1 to 10

What you will need

- Interactive Whiteboard (IWB)
- Curious George: *Bug Catcher* game
- Classroom number line

Easy Game Play

TIMING GOAL: 10 minutes

1. Warm Up

Invite children to the IWB area and review counting from 1 to 20 using the number line.

- *Today, we're going to play a game on the Interactive Whiteboard. But first, let's count from 1 to 20 using our number line!*
  (Count out loud with children from 1 to 20, pointing to each numeral on the number line.)

2. Introduce Easy Game

Remind children of basic game play rules– only one child can touch the IWB at one time, and take turns playing.

- *Today we are going to play another game on the Interactive Whiteboard! But we have to be careful, only one of us can touch the screen at a time, and we have to take turns.*
  (Model how touching the board makes things happen, and load the game Bug Catcher.)

Think out loud as you model how to play Bug Catcher– help children to make quick estimates of which is more (yellow or pink bugs) and help George catch the bugs by moving him from side to side.

- *Now, let's play Bug Catcher. First, we have to decide which group of bugs has more; how can we decide? Then we make our selection and catch the bugs to find out.*
  (Think out loud as you figure out which group you think has more bugs. Model selecting the bug group that has more, and model moving George back and forth with your finger to catch the bugs.)

When the two jars appear with numbers, focus children's attention on the numbers on the jars and talk out loud as you decide which number is more, and thus, which group has more bugs.

Model guessing correctly, and model recovering from a mistake where you count the bugs in the jar.

- *Were we right? How can we tell?*
  (Draw children's attention to the numbers of the jars and which number is more.)

- *Uh-oh. We weren't right. Let's count the bugs to figure out which group has more.*
  (Model counting each jar of bugs, and talk out loud as you figure out which number is more).

Call volunteers up to play the game, asking children to think out loud during their turns.

- *Which group has more? How do you know?*
  (Encourage children to count out loud the number of bugs in each jar to verify which jar has more.)

Remind children that during Center Time they will play Bug Catcher with a partner on a computer using a mouse.

❞ *During Computer Center Time, you can play this game again with a partner! But instead of touching the screen, you'll use the mouse to move George around so he can catch bugs.*

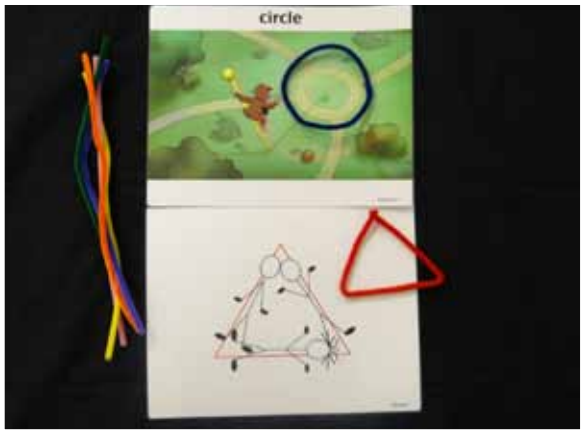
3. Wrap-Up

Review strategies for figuring out which group has more when comparing two groups, and strategies such as counting to check your answers.

❞ *All right, Math Detectives! Let's think about what we learned today. We learned that when you look at two groups of things, like bugs, you can say which group has more. Can you think of ways to check your answer?*
(Guide the discussion to talk about strategies for making a guess on which group has more and then counting to verify.)

Hands-on Center

Pipe Cleaner Shapes



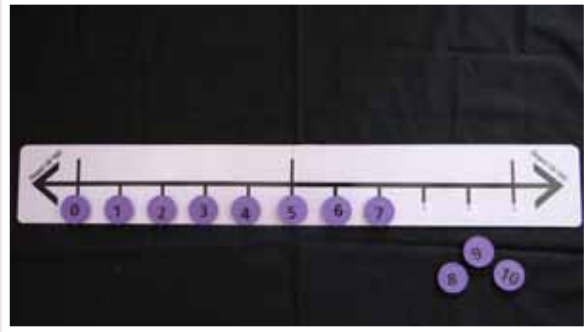
Skills

- Review identifying simple shapes and geometric properties (circle, triangle, square, curve)
- Review creating simple shapes and geometric properties with lines and curves (circle, triangle, rectangle, square, line, curve)

Materials

- *Shutter Monkey* shape cards (circle, triangle, square, curve)
- Pipe cleaners

Oops! Number Line 0–10



Skills

- Review identifying a missing number on a number line 0–10
- Review assigning appropriate relative value (greater/less/more than/before/after) 0–10 using the number line

Materials

- Oops! Number Line 0–10
- Oops! Number tiles 0–10
- Small number line 0–10

Keep in Mind…

During **Center Time**, small groups or pairs of children play focus games **Pipe Cleaner Shapes** and **OOPS! Number Line 0–10**. Children review math skills covered in the week.

Additional games also available during this time:

- Simple Shape Concentration
- NUMBO 0–5

Computer Center

Bug Catcher

Skills

- Review subitizing numbers 1–10
- Review comparing sets of numbers 1–10

Huff-Puff-a-Tron

Skills

- Review simple shapes (circle, triangle, square, and rectangle)

Keep in Mind ...

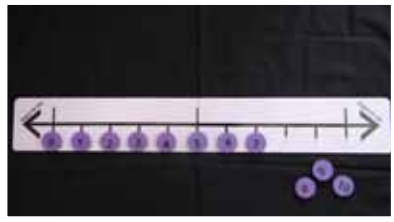
During **Computer Center Time**, pairs of children play focus games ***Bug Catcher*** and ***Huff-Puff-a-Tron.*** Children review math skills covered in the week.

Remind children to count out loud and to talk to each other about the math while paying the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

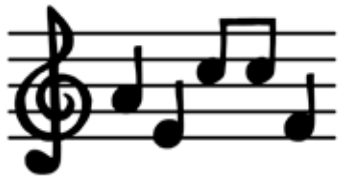
- *Crystals Rule*
- *Ribbit*
- *Count with Allie*
- *Apple Picking*

Math Circle Routine



Oops! Number Line 0–10

Use the Oops! Number Line 0–10 to help children create a number line by placing all of the number tiles in the correct sequence. Begin the activity by removing three number tiles from the number line. Keep the tiles hidden while you discuss which numbers are missing. Reveal the missing tiles and think out loud as you figure out where the missing tiles belong, using the classroom number line and the numbers before and after the missing numbers as reference. Once children have had an opportunity to witness the strategies for figuring out how to place missing number tiles, the activity is theirs to do. In the next round, remove five number tiles, asking for child volunteers to place the missing tiles back on the Oops! Number Line. If a child makes a mistake, say, "Oops!" and remove the misplaced tile. Think out loud to help children figure out how to place the tiles correctly. When the board is completely filled with numbers in the correct sequential order, the activity is complete.



10 Little Numbers Song

Children learn to sing a traditional number song emphasizing counting from 1 to 10.

Overview

During **Circle Time**, demonstrate how to use the **Oops! Number Line 0–10** and **number tiles** as a number line to **count, recognize numbers**, and **place numerals 0–10 in the correct sequence.** In support of counting, children sing a traditional number song**: 10 Little Numbers**.

Skills and other important points to cover

- Review assigning appropriate relative values (greater/less/more than/before/after) from 0 to 10 using a number line
- Review identifying a missing numeral on a number line from 0 to 10
- Review counting from 1 to 10

What you will need

- Oops! Number Line 0–10
- Oops! Number Tiles 0–10
- Classroom Number Line

Math Circle Routine

TIMING GOAL: 10 minutes

1. Warm Up

Invite all children to the Circle Time area.

Use the classroom number line and completed Oops! Number Line to review the concept of a number line. Briefly discuss how numbers on a number line always go in order. Ask children to identify a number they know on the number line and the numbers that come before and after it.

- *Who can tell me what you see on this number line?*
  (Help children talk about how there are numbers on a number line and that the numbers always go in order. Demonstrate this by running your fingers along the edge of the completed Oops! Number Line from left to right.)

- *Can someone find number seven on the number line for me? What number is right after seven? What number is right before seven?*
  (Use number seven to talk about a number that comes before or after it on a number line.)

2. Complete the Oops! Number Line 0–10

Review that the Oops! Number Line is a complete number line that starts with 0 and ends with 10. Remind children that number lines can start or end with any number, but that the numbers always go in order.

Count out loud with the children from 0 to 10 as you point to the corresponding numbers. Hold the Oops! Number Line so all children can see.

- *Math Detectives, do you remember the last time we completed the Oops! Number Line? Today we're going to complete it again, but before we do, let's count together, saying the numbers out loud .*
  (Help children remember the last time they worked with the Oops! Number Line to place missing numbers. Model counting and point to each numeral on the number line from 0 to 10.)

- *Numbers on a number line always go in order. What number does our number line start with? What number does this number line end with?*
  (Guide discussion to talk about how the Oops! Number Line begins with 0 and ends with 10.)

Remind children that the Oops! Number Line is a complete 0–10 number line before you remove any three number tiles from it. Hold the three number tiles in your hand. Read the numbers on the picked tiles. Think out loud as you model how to figure out where the missing tiles go to complete the Oops! Number Line. Use language such as which numbers are before and after the missing number.

- *I'm going to take three numbers off of the Oops! Number Line. Now, I need to put these three numbers back in the correct place. I have the numbers ___, ___, and ___. How can I figure out where to put them on the number line?*
  (Remove three tiles, and show the children the tiles while reading the numerals on the tiles. Allow children to talk about where they think the tiles should go, without saying whether they are correct or incorrect.)

- *Those are some good ideas. One way I know to figure out where the number tiles go is to count. I'm going to count until I get to a missing number and figure out which number I should put there. I can use the numbers that come before and after my missing number to help me figure it out.*
  (Model counting from 0 and when you encounter a missing number, say the name of the number that is missing. Then, identify the tile that belongs in the missing place. Repeat the process to replace the remaining tiles. Review your answer by naming the number before the replaced tile, the replaced tile, and the number after the replaced tile.)

Repeat the activity by removing five number tiles from the number line, hiding them in your hand. Mix the tiles up, and invite children to come up, take a number tile, and identify it before replacing it on the Oops! Number Line.

- *Now I'm going to take five number tiles off the Oops! Number Line. We have five places on the number line that are missing numbers. Our job is to put all the numbers back on the number line in the correct order. How can we figure out which number tiles are missing from the number line?*
  (Remove five number tiles that are not all next to each other from the Oops! Number Line. Hide them in your hand and mix them carefully. Encourage children to think about counting, and looking for the number before and the number after to help figure out where to place missing tiles on the number line.)

- *Can I have five volunteers to put each tile in the correct place on the number line? Can you tell me what number you have? Where should it go? You can help each other figure out where to put the tiles.*
  (Invite five children to come up to pick a number tile to place on the number line. Help the children read the numerals out loud. Encourage children to talk to one another to figure out where to place the tiles.)

If a child makes a mistake replacing a tile, say "Oops!" and remove the tile, using the opportunity to explain how you know the child made a mistake.

- *Let's see, what number is before this missing number? What number is after this missing number?*
  (Help children figure out the missing numbers by asking questions such as, "Does the number come before/after the missing number?" If children need more help, tell the children to look at another completed number line. Use this strategy for each of the five missing numbers.)

Encourage children to check that the tiles are placed correctly by counting from 0 to 10 on the completed Oops! Number Line. Consult the classroom number line as a reference.

Have children identify a number that is more than 8, and a number that is less than 1.

- *Let's count to check if we're correct. Let's also look at this number line to compare and check if we're correct. Are we correct?*
  (Model counting using the number line created by the children. Use the classroom number line to compare to see if the children have created a number line that is correct.)

- *Looking at our number line, what number is more than the number eight? ___ is farther from zero, so the number is bigger.*
  (Point to the numeral 9 and talk about how you can tell that a number is more than 8– it comes after the 8 on the number line. Talk about how a number bigger than 8 is farther from zero and closer to ten.)

- *Looking at our number line, what number is less than the number one? Zero is less than one. It's far from ten, so zero is smaller than ten.*
  (Point to the numeral 0 and talk about how it's less than 1– it comes before 1 on the number line. Talk about how a number less than 1 is farther from the 10. In this case, it is actually 0.)

Remind children they can play with the Oops! Number Line with a partner during Center Time.

3. Sing "10 Little Numbers"

"10 Little Numbers" Lyrics (to the tune of "10 Little Indians")

Verse 1
One little, two little, three little numbers
Four little, five little, six little numbers
Seven little, eight little, nine little numbers
Ten little numbers

Introduce and sing the "10 Little Numbers" song with the children, using your fingers to count.

- *Today we are going to sing a song called, "10 Little Numbers." The words are very simple. I will say them first, and then you repeat them after me.*
  (Introduce the song lyrics line by line. Say one line and have the children repeat the line after you.)

- *Have you heard this melody before? Now, let's sing the words to this melody.*
  (Hum the melody of the first line of the song. Lead the children in singing the song, using your fingers to count from 1 to 10)

Guided Book Reading

Round is a Mooncake: A Book of Shapes

A little girl's neighborhood becomes a discovery ground of things round, square, and rectangular. Review these shapes and geometric properties and ask your Math Detectives to be on the lookout for circles, squares, and rectangles.

Overview

During **Circle Time**, read ***Round is a Mooncake*** with children. As you read, review and talk about **shapes and geometric properties** found in the book. Focus math talk around **circles, squares, and rectangles**. Key– marked with a pause points ⏸ in the teacher's guide and book pages– are included as opportunities to ask questions to get children talking about these shapes.

Skills and other important points to cover

- Review simple shapes and geometric properties (circle, square, rectangle, and round)
- Review counting sides and corners (angles) of simple shapes (circle, square, and rectangle)
- Review comparing sets (1 and 3)

What you will need

- *Round is a Mooncake* (book)
- Simple Shape cards (circle, square, and rectangle)

Guided Book Reading

TIMING GOAL: 15 minutes

1. Warm Up

Invite children to the Circle Time area to read the book, Round is a Mooncake.

Review circles, squares, and rectangles with children. Use shape cards to prompt children through the identification of these shapes as well as the counting of their sides and corners (angles).

- *Let's look at some shapes together. Can anyone tell me what this one is?*
  (Help children identify each shape as you hold up circle, square, and rectangle shape cards one by one for children to see.)

- *I wonder how many sides this shape has. Let's see if we can figure it out together.*
  (Hold up each shape card and use your finger to count each side out loud with children while pointing. When holding up the circle card, remind children that circles are a curve that goes all the way around, or round, and do not have any sides.)

- *Now that we've counted the sides of our shapes, are there any Math Detectives who think they can count the corners (angles)?*
  (While holding up each shape card, have children count the corners [angles] in unison or call up individual volunteers. Remind children that circles have no corners [angles].)

Hold up the *Round is a Mooncake* book and point to the picture of the moon in the shape of a circle. Tell children that "round" is another way to describe a circle. Ask children to find other round, or circle-shaped, items on the cover.

- *Today we're going to read Round is a Mooncake. Round is another way to describe a circle. I see a round moon and a little girl holding up a round cake. Does anyone see anything else round on the cover?*
  (As you hold the book up, prompt children to identify the round lanterns and round pattern on the girl's shirt.)

Ask children to predict what the book will be about.

- *Looking at the cover of this book, what do you think this book will be about?*
  (Allow children to share their thoughts. There is no right or wrong answer.)

2. Guided Book Reading (with Pause Points)

Pause at pages 5–6:

Remind children that round is another way to describe a circle. Point to the rice bowl and the mouse's eyes as being round, and prompt children to find an additional round item on these pages.

- *I see that the rice bowl is round and so are the mouse's eyes. Let me see if I can find something else round in this picture. Does anyone think they can help me? What shape have we been talking about that is round?*
  (Point to the rice bowl and mouse's eyes. Have children find the round plate on the page. Remind children that a circle is round.)

Pause at Pages 17–18:

Point to the square box and square basket. Ask children if they can find something else that is square on the pages. Then, think out loud as you guide children through counting the number of kittens in and outside the basket, comparing the numbers to figure out where there are more kittens.

- *So the box is a square and the basket the kittens are in is a square, too. Does anyone think they can find another square?*
  (Help children identify the square tiles on the floor and the square necklace on the kitten's neck.)

- *I see one kitten outside the basket, but I wonder how many kittens are inside the basket. Let me count to find out how many there are. One, two, three … so, there are three kittens inside the basket. Can anyone tell me if there are more kittens inside the basket or outside the basket?*
  (Think aloud and point while you count the number of kittens inside the basket. Say the number three when you finish counting to remind children that the last number you say when counting is the total number of items altogether. Talk out loud about how you know which number is bigger, 1 or 3.)

Pause at pages 23–24:

Point to the rectangular pencil case and ask children to find something else that is shaped like a rectangle on the pages.

- *Now we are looking for rectangles, Math Detectives. The pencil case is a rectangle, but can anyone find something else that is a rectangle?*
  (Model searching for another rectangle, and ask children to help you find one. If they have trouble, point to the rectangular-shaped earring.)

3. Wrap Up

Review shapes included in the book: circles, squares, and rectangles.

- *In our book today we looked for things that are round like a circle, square, and rectangle-shaped. We also talked about curves, sides, and corners (angles). Let's remember how these shapes look and sky-draw them.*
  (Talk about how circles are round and have a curve that goes all the way around. Talk about how squares and rectangles have sides and corners [angles]. Prompt children to sky-draw a circle, a square, and a rectangle.)

Computer Center

Bug Catcher

Skills

- Review subitizing numbers 1–10
- Review comparing sets of numbers 1–10

Huff-Puff-a-Tron

Skills

- Review simple shapes (circle, triangle, square, and rectangle)

Keep in Mind ...

During **Computer Center Time**, pairs of children play focus games ***Bug Catcher*** and ***Huff-Puff-a-Tron.*** Children review math skills covered in the week.

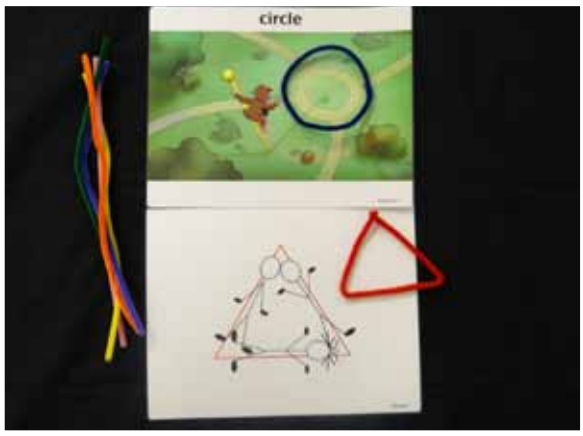
Remind children to count out loud and to talk to each other about the math while paying the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Count with Allie*
- *Apple Picking*

Hands-on Center

Pipe Cleaner Shapes



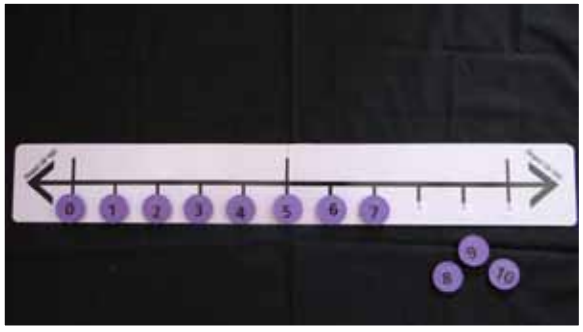
Skills

- Review identifying simple shapes and geometric properties (circle, triangle, square, curve)
- Review creating simple shapes and geometric properties with lines and curves (circle, triangle, rectangle, square, line, curve)

Materials

- *Shutter Monkey* shape cards (circle, triangle, square, curve)
- Pipe cleaners

Oops! Number Line 0–10



Skills

- Review identifying a missing number on a number line 0–10
- Review assigning appropriate relative value (greater/less/more than/before/after) 0–10 using the number line

Materials

- Oops! Number Line 0–10
- Oops! Number tiles 0–10
- Small number line 0–10

Keep in Mind ...

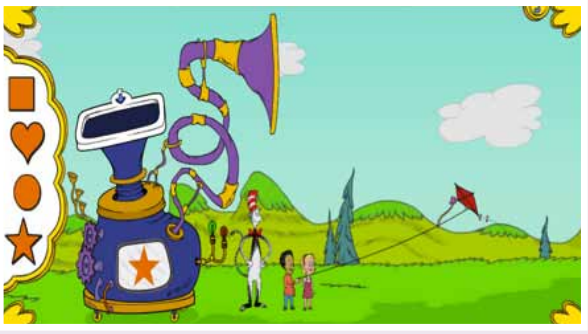
During **Center Time**, small groups or pairs of children play focus games ***Pipe Cleaner Shapes*** and ***OOPS! Number Line 0–10.*** Children review math skills covered in the week.

Additional games also available during this time:

- *Simple Shape Concentration*
- NUMBO 0–5

Challenge Game Play

Huff-Puff-a-Tron (The Cat in the Hat)



Nick and Sally want to fly their kite but there is no wind! Fortunately, the Cat in the Hat has a Huff-Puff-a-Tron that produces wind. To make the machine work, children must match shapes. The more shapes they match, the stronger the wind blows. Matching shapes helps children review simple shapes and shape names, like circles and triangles, and introduces children to challenging shapes like hexagons and trapezoids.

Overview

During **Circle Time**, play ***Huff-Puff-a-Tron*** with children on the Interactive Whiteboard (IWB). As you demonstrate how to play the game, use this opportunity to talk about different shapes that the children have practiced making with their bodies: **circles, triangles, rectangles, squares, and curves and lines.** Introduce children to the names of challenging shapes: **trapezoid, rhombus, hexagon, pentagon, octagon.**

Skills and other important points to cover

- Introduce challenging shapes: trapezoid, rhombus, hexagon, pentagon, octagon
- Review simple shapes and geometric properties: circle, triangle, rectangle, square, curves, lines, corners (angles)

What you will need

- Interactive Whiteboard (IWB)
- Cat in the Hat: *Huff-Puff-a-Tron*

Challenge Game Play

TIMING GOAL: 25 minutes

1. Warm Up

Invite children to the IWB area to play, Huff-Puff-a-Tron, a new game on the IWB.

Review the names of shapes and geometric properties that children have learned during other activities. Use a dry erase board to draw the shapes: circle, triangle, rectangle, square.

- *Let's think about the different shapes we talked about this week. Can you tell me the names of any shapes you remember?*
  (Draw shapes on the dry erase board to help children remember: circle, triangle, rectangle, square. Talk about the geometric properties of the shapes like curve, corner [angle] and line or side.)

2. Introduce Challenge Game

Encourage children to think out loud with you as you identify and select shapes to feed the Huff-Puff-a-Tron. Model using your finger to slide the shapes to the Huff-Puff-a-Tron.

Model describing the geometric properties of the shapes that help you know which ones match — for instance, a circle is a curve that goes all the way around, and a triangle has three sides and three corners (angles).

- *Let's say the name of the shape we need to feed into the Huff-Puff-a-Tron so that it can make wind for Sally and Nick's kite.*
  (Model pointing to the shapes and saying their names.)

- *I remember that this is a triangle because it has three sides and three corners (angles).*
  (Model pointing to the triangle, tracing the three sides, and pointing to the three corners [angles].)

Name the complex shapes children encounter as the game progresses: trapezoid, rhombus, hexagon, pentagon, octagon.

- *Wow, look at these shapes! This one with six sides is called a hexagon!*
  (Point to the hexagon and trace each side with your finger as you count out loud.)

Model recovering from a mistake.

- *Whoops! That's not the correct shape. Let's describe the shape we're looking for and then find a shape with the same properties to feed into the Huff-Puff-a-Tron!*
  (Count the sides and corners [angles] of the target shape, or describe its curve. Then describe the properties [sides/corners (angles)/curves] of shape choices to find the matching shape with the same properties.)

Allow children, or several volunteers, to have a turn playing Huff-Puff-a-Tron.

3. Wrap Up

Review the shapes and their geometric properties covered in the game by drawing them on the dry erase board: circle, triangle, rectangle, square, curves, lines, corners (angles), trapezoid, rhombus, hexagon, pentagon, octagon.

❞ *Let's think back to what we learned today. We talked about different shapes; can you name some of the shapes we talked about?*
(Encourage children to tell you the names of the shapes from Huff-Puff-a-Tron. Draw shapes children haven't named on the dry erase board and help children name the shapes.)

Remind children they will have another chance to play the game with a partner during Computer Center time.

Computer Center

Bug Catcher

Skills

- Review subitizing numbers 1–10
- Review comparing sets of numbers 1–10

Huff-Puff-a-Tron

Skills

- Review simple shapes (circle, triangle, square, and rectangle)

Keep in Mind ...

During **Computer Center Time**, pairs of children play focus games ***Bug Catcher*** and ***Huff-Puff-a-Tron.*** Children review math skills covered in the week.

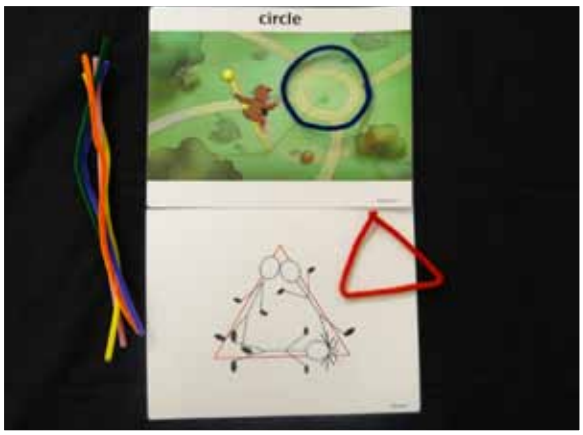
Remind children to count out loud and to talk to each other about the math while paying the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Count with Allie*
- *Apple Picking*

Hands-on Center

Pipe Cleaner Shapes



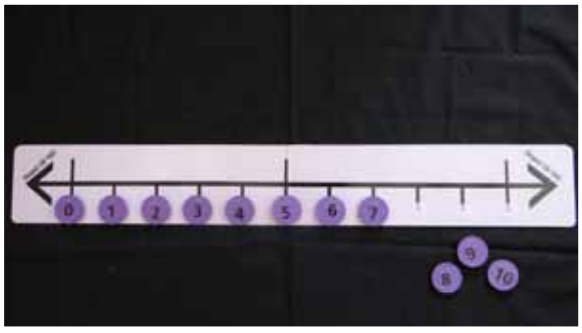
Skills

- Review identifying simple shapes and geometric properties (circle, triangle, square, curve)
- Review creating simple shapes and geometric properties with lines and curves (circle, triangle, rectangle, square, line, curve)

Materials

- *Shutter Monkey* shape cards (circle, triangle, square, curve)
- Pipe cleaners

Oops! Number Line 0–10



Skills

- Review identifying a missing number on a number line 0–10
- Review assigning appropriate relative value (greater/less/more than/before/after) 0–10 using the number line

Materials

- Oops! Number Line 0–10
- Oops! Number tiles 0–10
- Small number line 0–10

Keep in Mind ...

During **Center Time**, small groups or pairs of children play focus games ***Pipe Cleaner Shapes*** and ***OOPS! Number Line 0–10.*** Children review math skills covered in the week.

Additional games also available during this time:

- *Simple Shape Concentration*
- NUMBO 0–5

Video Co-viewing

LET'S GO FLY A KITE (The Cat in the Hat)

Using the power of wind in the Valley of Huff-Puff-Maguff, the Cat in the Hat, Nick, and Sally fly kites with patterns on them. The kites, along with the Cat's hat, introduce children to the concept of AB patterns. Children also can review counting from 1 to 13, and a simple shape (circle).

Overview

During **Circle Time**, watch ***Let's Go Fly a Kite*** with children on the **Interactive Whiteboard** (IWB). Look and listen for key pause points (II and a "beep"), and use them as opportunities to ask questions to get children talking about math.

Skills and other important points to cover

- Introduce identifying AB patterns
- Review counting and cardinality from 1 to 13

What you will need

- Interactive Whiteboard (IWB)
- The Cat in the Hat: *Let's Go Fly a Kite* video (11:29 minutes)

Video Co-Viewing Activity

TIMING GOAL: 25 minutes

1. Warm Up

Invite all children to the IWB area to watch Let's Go Fly a Kite on the IWB.

Review counting from 1 to 13 using a number line, and the simple shape — circle.

- *Math Detectives, remember math includes numbers and counting. Let's practice counting from 1 to 13.*
  (Model counting from 1 to 13, pointing to the numerals on a number line.)

- *We also learned about circles. A circle is a curve that goes all the way around. Let's practice sky-drawing a curve. Now, let's sky-draw a circle.*
  (Model sky-drawing a curve. Then sky-draw a circle, reminding children that circle is a curve that goes all the way around.)

Remind children you will pause the video to talk about the math you see.

Start the video.

2. Video Co-Viewing (with Pause Points)

1. 1:08 — Sally, Nick, and the Cat are in the yard. The Cat is holding a striped kite.

Introduce the concept of a "pattern" by pointing out the pattern on the kite. Tell children that a pattern is something that repeats and is predictable, meaning that once you read the pattern you can tell what is going to come next.

- *Math Detectives, I see some new math here! Do you see the kite? The Cat is holding a striped kite with colors red, white, red, white, red, white. The colors keep repeating over and over, so we can predict or tell what comes next. This is called a pattern.*
  (Model the new concept "pattern" by pointing to the red-white pattern on the kite.)

Encourage children to talk about the kite's pattern by color (red, white, red, white, red, white), then help the children name the pattern using AB terminology (A, B, A, B, A, B).

- *Let's say the pattern together. Red, white, red, white, red, white. Another name for this kind of pattern is called AB pattern. If we label the colors on the kite with A and B, the pattern would be A, B, A, B, A, B. Let's say that together: A, B, A, B, A, B.*
  (Model describing the pattern, first calling it red, white, red, white. Then introduce and model the pattern saying, "A, B, A, B, A, B," reinforcing the pattern by pointing to the colors on the kite.)

Encourage children to find another pattern on the screen — the Cat's hat. Identify the pattern by color (red, white, red, white), then help the children name the pattern using AB terminology (A, B, A, B).

❝ *The kite has a pattern. Do you see something else that has a red-white or AB pattern? The Cat's hat also has a pattern. The colors red and white keep repeating. Let's say the pattern together, first with colors: red, white, red, white. Now, let's say the pattern together using letters A and B: A, B, A, B.*
(Guide the discussion to point out the pattern on the Cat's hat. Model describing the pattern first by colors, then by using AB terminology.)

Ask children to predict what will happen next in the video.

Resume video.

2:38 — Sally, Nick, and the Cat are in the Thingamajigger.

Encourage children to count the ladder rungs on the tree from 1 to 13 out loud. Reinforce the concept of how many ladder rungs there are altogether.

❝ *Before we take off to the land of Huff-puff-maguff, I see some counting we can do. Do you see the tree house's ladder rungs? Let's count them to find out how many there are altogether.*
(Model counting from 1 to 13, pointing to each of the ladder rungs. Reinforce the idea that the last number you count is how many ladder rungs there are altogether.)

Ask children to predict what will happen next in the video.

Resume video.

3. 4:52 — Sally and the Cat are looking up in the sky at the kite.

Encourage children to talk about how the kite does a barrel roll, or makes a circle-like or round shape, in the sky. Model and encourage children to sky-draw a circle.

❝ *Did you see the shape the kite made in the sky? It looked like this (model sky-drawing a circle). What shape is that?*
(Guide discussion to name the shape of the circular motion of the kite [circle]. Model sky-drawing a circle and encourage children to sky-draw circles.)

Make connections between the shape of a circle and the shape of the number zero. Encourage children to think and talk about a number that looks like a circle (zero).

❝ *I remember a number that looks like a circle. We've seen it at the beginning of our number line. What is that number?*
(Guide discussion to talk about zero and how it looks like a circle. Point to the zero on the classroom number line. Model sky-drawing a circle or zero, and encourage children to sky-draw circles and zeros.)

Ask children to predict what will happen next in the video.

Resume video. End 11:29

3. Wrap-Up with Preview of Pipe Cleaner Shapes

Review the concepts covered in the video — patterns (red-white and AB), counting (1 to 13), and a shape that looks like a number (circle and zero).

> *Let's think hard and think back to what we learned today. Who wants to share about what we learned?*
> (Encourage children to tell you what they remember from the lesson. Talk about the Cat's hat pattern, again naming it by colors — red, white, red, white — and by AB terminology. Talk about counting the ladder rungs from 1 to 13. Also review how the number zero looks like a circle.)

Remind children that, as Math Detectives, they should always listen carefully and keep their eyes open to find math all around!

Computer Center

Vegetable Patterns

Skills

- Review identifying AB and ABB patterns
- Review extending and identifying missing core elements in AB and ABB patterns

Vegetable Harvest

Skills

- Review combining numbers from 1 to 9
- Review counting and numeral identification from 1 to 9

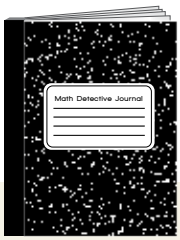
Keep in Mind...

During **Computer Center Time**, pairs of children play the focus games ***Vegetable Patterns*** and ***Vegetable Harvest***. Children review math skills covered in the week.

Remind children to identify the core elements of the AB and ABB patterns, and to count the vegetables out loud. Also, remind children to talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

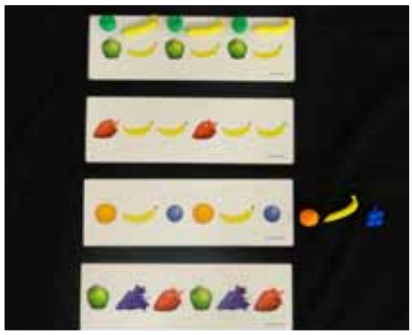
- *Crystals Rule*
- *Ribbit*
- *Count with Allie*
- *Apple Picking*
- *Bug Catcher*
- *Huff-Puff-a-Tron*



Math Detective Journal

Math Detective Journal

During Math Detective Journal Time, help children make AB patterns using shape stickers and the Shape Sticker Pattern cards. Children share the patterns they make with each other by showing and naming the shapes, then asking friends to name the next shape in the pattern.



Fruit Patterns

Support children as they practice copying and extending AB and ABB patterns using plastic fruit and the Fruit Pattern cards. Those children comfortable with patterns can create their own fruit patterns that their partner can copy and extend.

Overview

During **Small Group Time**, review shapes and geometric properties with children by helping them create, copy, and extend AB **Shape Sticker Patterns** in their **Math Detective Journals**, using simple and complex shape stickers. When children are comfortable making, copying, and extending patterns with stickers, help them make AB and ABB patterns using plastic fruit in the **Hands-On Activity, "Fruit Patterns."**

Skills and other important points to cover

- Introduce identifying ABB patterns (review identifying AB patterns)
- Introduce comparing and contrasting AB and ABB patterns
- Introduce creating, copying, extending, and identifying missing core elements in AB and ABB patterns

What you will need

- Math Detective Journals (one per child)
- Shape stickers
- Shape sticker pattern cards
- Blank paper and pen (for teacher)
- Plastic fruit
- Fruit pattern cards

Math Detective Journal

TIMING GOAL: 20 minutes

1. Warm Up

Invite children to the Small Group area to review the concept of AB patterns. Encourage children to talk about patterns seen in the video co-viewing lesson.

- *In the video we saw yesterday, we learned about a new math idea. We learned about patterns. A pattern is something that repeats so we can tell what will come next. Who remembers what patterns we saw in the video?*
  (Review the patterns seen in the previous day's co-viewing lesson. Help children recall the red, white, red, white pattern on the kite and on the Cat's hat.)

Demonstrate an AB pattern that involves physical movement. Encourage children to predict what comes next in the pattern and to extend the pattern by continuing with it.

- *Now, I'm going to make my own pattern. Watch and listen: (clap), (stomp), (clap), (stomp), (clap). What comes next in this pattern? Can you continue the pattern?*
  (Demonstrate the pattern by clapping and stomping as you say the words "clap" and "stomp," and encourage children to predict what comes next in the pattern. Help the children extend the pattern by keeping it going once they've predicted what will come next.)

Help children name the core elements in the clap, stomp as you demonstrate it again — clap and stomp. Encourage them to copy the patterns and say the core elements as they act them out.

- *The parts or "core elements" in this pattern are clap and stomp. Can you copy the pattern? I'll show you the pattern, and then let's say it together while we do it. (Clap),(stomp), (clap), (stomp).*
  (Lead the children in the clap, stomp pattern.)

Remind children that the clap, stomp pattern is also an AB pattern. Encourage the children to label the clap A and the stomp B as you act out the pattern again.

- *Do you remember another name for this kind of pattern? It's an AB pattern. Let's say A and B as I act out the pattern again.*
  (Help children name the pattern using AB terminology. Model the 'clap, stomp' pattern saying, "A, B, A, B" while acting out the pattern.)

Briefly introduce ABB patterns as a different example of a pattern, using clap, stomp, stomp.

- *There are other kinds of patterns. Let me show you an example of another pattern.(Clap), (stomp),(stomp), (clap), (stomp), (stomp). Who could tell me what the next three core elements in this pattern are?*
  (Model and repeat the clap, stomp, stomp, ABB pattern a few times. Help children name the next three core elements.)

2. Introduce Shape Sticker Patterns

Identify and name the different patterns on the Shape Sticker Pattern cards.

- *Let's look at these cards. What pattern do you see? Can you name the core elements?*
  (Help children talk about and name the core elements in the patterns in the Shape Sticker Pattern cards.)

Model making a sticker pattern from a Shape Sticker Pattern card, and ask children to recreate the same pattern in their journals.

- *You're going to create your own AB patterns in your journals using different shape stickers, but let's try one together first, using this Shape Pattern card to help us. Circle, triangle, circle, triangle. Make this pattern in your journal.*
  (Model making the AB pattern — circle, triangle, circle, triangle — on a sheet of paper. Hold it up for all the children to see. Help children copy the pattern into their journals. Encourage children to name the core elements out loud.)

Model creating the same AB sticker pattern (circle, triangle) but with a missing core element. Draw a line in the space for the missing core element. Think out loud to help children identify the missing core element.

- *Now, look at this shape pattern. It's an AB pattern but something is missing. Circle, triangle, circle, triangle, _____, triangle. What core element is missing from this pattern?*
  (Help children name and identify the missing core element in the pattern.)

Encourage children to copy or extend patterns from the Shape Sticker Pattern cards or, if they are able, to create their own AB patterns in their journals.

- *Can you think of another AB shape pattern? Try creating that AB pattern by yourselves with the stickers in your journals. If you want, you can copy the patterns on the Shape Pattern cards.*
  (Encourage children to talk about different AB shape patterns. Help children create AB patterns using stickers in their journals.)

Encourage children to share and practice naming the core elements of their patterns out loud with a partner.

- *Now, let's share our patterns with our neighbors. When you show your patterns to your neighbors, point and say each shape's name.*
  (Help children share their patterns with a partner, and name the core elements in their patterns as they point.)

3. Introduce Fruit Patterns

Introduce creating AB and ABB patterns with the plastic fruit.

- *We just made AB patterns with our shape stickers. Now, we're going to make AB and ABB patterns with this fruit.*
  (Hold up the plastic fruit for the children to see. Remind children not to eat the fruit.)

- *Who can tell me an AB pattern we can make with the fruit?*
  (Help children think of examples of AB patterns using the fruit, e.g., apple-banana. Model making the patterns the children suggest. Place the fruit pattern in a place where all children can see.)

- *Let's look at some other examples of AB and ABB patterns on these cards.*
  (Use the Fruit Pattern cards to encourage children to name the core elements out loud. Talk about the different AB and ABB patterns on the cards.)

Encourage children to copy or extend patterns from the Fruit Pattern cards or, if they are able, to create their own AB and ABB patterns using the plastic fruit.

- *Now, try making your own AB or ABB patterns with the fruit. Say your pattern out loud as you make it. You can also copy and extend the patterns from our Fruit Pattern cards.*
  (Encourage children to talk out loud as they create their own AB and ABB patterns or copy and extend patterns from the Fruit Pattern cards with the plastic fruit.)

Remind children they can work with a partner to make patterns with the plastic fruit during Center Time.

Easy Game Play

Vegetable Patterns (Curious George)

Tomato, pepper, tomato, pepper; Gabriella is in the kitchen making patterns using vegetables, and she need help completing her pattern. Repeat the pattern with Gabriella and place the vegetables on the counter to complete the pattern. This will help children identify missing core elements and complete patterns.

Overview

During **Small Group Time**, demonstrate how to play ***Vegetable Patters*** on the **Interactive Whiteboard** (IWB). Use game play as an opportunity to practice **identifying patterns and missing pattern core elements** as you call on individual children to try out the game on the IWB. Remind children of **basic game play rules.**

Skills and other important points to cover

- Review identifying AB and ABB patterns
- Review extending and identifying missing core elements in AB and ABB patterns

What you will need

- Interactive Whiteboard (IWB)
- Sid the Science Kid: Vegetable Patterns game

Easy Game Play

TIMING GOAL: 10 minutes

1. Warm Up

Invite children to the IWB area and review the red-white or AB pattern from the Let's Go Fly a Kite video. Encourage children to find AB patterns in the classroom.

- *Today, we're going to play a game on the Interactive Whiteboard.But first, who remembers the patterns we saw when watching Lets Go Fly a Kite?*
  (Help children remember the AB or red-white pattern of the Cat's hat and kite from the video.)

- *Does anyone see an AB pattern in our classroom?*
  (Help children identify and read an AB pattern in the classroom — e.g., stripped pattern on someone's shirt, or a boy-girl pattern of children on the carpet.)

2. Introduce Easy Game

Remind children of basic game play rules — only one child at a time can touch the IWB, and they must take turns playing.

- *Today we are going to play another game on the Interactive Whiteboard! But we have to be careful, only one of us can touch the screen at a time, and we have to take turns.*
  (Model how touching the board makes things happen; load the game Vegetable Patterns.)

Think out loud as you model how to play Vegetable Patterns . Help children "read" the pattern by labeling the vegetables and by using AB terminology. Model how to complete the pattern by touching and dragging the correct vegetable to its place on the counter.

- *Now, let's play Vegetable Patterns. First we have to figure out what the pattern is. Then we can use our finger to point to the vegetable that completes the pattern made by Gabriella.*
  (Model reading the vegetable pattern and then moving one vegetable from the basket to the counter to complete the pattern.)

Walk children through a few examples. Model how to recover from a mistake

- *Whoops! That's not right. How can we check to see what comes next in the pattern?*
  (Encourage children to say the pattern out loud, reading either object names like carrot, corn, or by labeling the pattern ABAB.)

Call volunteers up to play the game, ask children to think out loud during their turns.

Remind children that during Center Time they will play Vegetable Patterns with a partner on a computer using a mouse.

- *During computer center time, you can play this game again with a partner! But instead of touching the screen, you'll use the mouse to move vegetables around to complete the patterns.*

3. Wrap Up

Review ways to read patterns - by labeling the core elements in the pattern or using AB (or ABB) terminology.

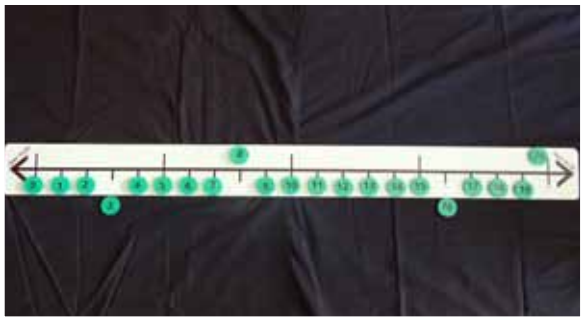
Encourage children to identify and extend the clap-snap and clap-snap-snap, patterns you model.

- *All right, Math Detectives! Let's think about what we learned today. We learned about patterns and how to extend or find a missing piece of a pattern. If we see a pattern, what are some ways that we can read it?*
  (Guide the discussion to talk about labeling the names of the core elements in a pattern or using AB or ABB terminology.)

- *Can you practice with me? What comes next: (clap), (snap), (clap), (snap)? How about in this one: (clap), (snap), (snap), (clap), (snap), (snap)?*
  (Encourage children to complete the patterns you model and label the core elements with AB and ABB terminology.)

Hands-on Center

OOPS! Number Line 0–20



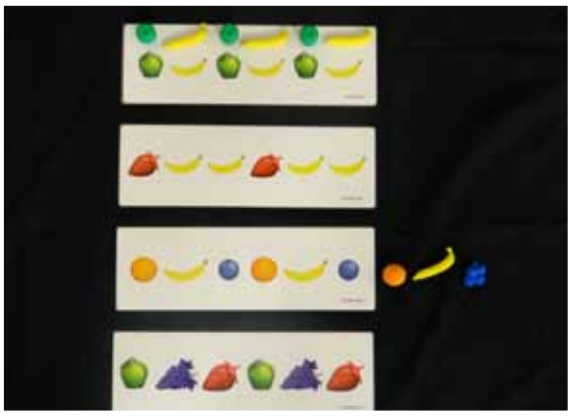
Skills

- Review Oops! Number Line 0–20 as a number line 0–20
- Review identifying a missing numeral on a number line 0–20

Materials

- *Oops! Number Line 0–20*
- *Oops! number tiles 0–20*
- *Small number line 0–20*

Fruit Patterns



Skills

- Review identifying, creating, copying, and extending AB and ABB patterns

Materials

- Plastic fruit
- Fruit Pattern cards

Keep in Mind...

During **Center Time**, small groups or pairs of children play the focus games **OOPS! Number Line 0–20** and **Fruit Patterns**. Children review math skills covered in the week.

Additional games also available during this time:

- *Simple Shape Concentration*
- *NUMBO 0–5*
- *Pipe Cleaner Shapes*
- *Oops! Number Line 0–10*

Computer Center

Vegetable Patterns

Skills

- Review identifying AB and ABB patterns
- Review extending and identifying missing core elements in AB and ABB patterns

Vegetable Harvest

Skills

- Review combining numbers from 1 to 9
- Review counting and numeral identification from 1 to 9

Keep in Mind ...

During **Computer Center Time**, pairs of children play focus games ***Vegetable Patterns*** and ***Vegetable Harvest.*** Children review math skills covered in the week.

Remind children to count out loud and to talk to each other about the math while paying the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Count with Allie*
- *Apple Picking*
- *Bug Catcher*
- *Huff-Puff-a-Tron*

Math Circle Routine

Oops! Number Line 0–20

Use the **Oops! Number Line 0–20** to help children create a number line by placing all of the number tiles in the correct sequence. Begin by removing two number tiles from the 10 to 20 section of the number line. Reveal the missing tiles and think out loud as you figure out where the two missing tiles belong, using the classroom number line and the numbers before and after the missing numbers as reference. Once children have had an opportunity to witness the strategies for figuring out how to place missing number tiles, remove all 11 number tiles from 0 to 10 and call on child volunteers to replace the tiles. If a child makes a mistake, say, "Oops!" and remove the misplaced tile. Think out loud to help children figure out how to place the tiles correctly. When the board is completely filled with numbers in the correct sequential order, the activity is complete.

Number Scene

Using an oversize die, one child rolls while the others watch to see what dot arrangement comes up. With only a short period of time to identify the number of visible dots, children offer their ideas and then count to check. Using the common dot representations for numbers 1 to 6 encourages children to recognize the visual arrangements that numbers may have.

Overview

During **Circle Time**, demonstrate how to use the **Oops! Number Line 0–20** and number tiles as a **number line** to **count, recognize numbers**, and **place numbers 0 to 20 in the correct sequence**. Additionally, children are introduced to recognizing number arrangements (**subitizing**) for numbers 1 to 6 that appear on an oversized die when tossed.

Skills and other important points to cover

- Review subitizing from 1 to 6
- Review Oops! Number Line 0–20 as a number line 0–20
- Review identifying a missing numeral on a number line 0–20

What you will need

- Oops! Number Line 0–20
- Oops! number tiles 0–20
- Classroom number line
- Dry erase board, markers, and eraser
- Large foam die

Math Circle Routine

TIMING GOAL: 10 minutes

1. Warm Up

Invite all children to the Circle Time area.

Use the classroom number line and completed Oops! Number Line 0–20. Review the concept of a number line. Remind children that number lines can start and end with any number, but that the numbers always go in order.

Note the difference between last week's number line — starting at 0 and ending at 10 — and this week's number line — starting at 0 and ending at 20.

- *Who can tell me what you see on this number line? How is this number line the same as last week's? How does this number line look different from last week's?*
  (Guide the discussion to how there are numbers on a number line, and that the numbers always go in order [run your finger along the edge of the number line from 0 to 20]. Talk about how both number lines start at 0, but last week's ended with 10 and this week's ends with 20.)

Ask children to identify a number larger than 10 on the number line and the numbers that come before and after it.

- *Can someone find a number on the number line that is larger than 10? What number is right after that number? What number is right before?*
  (Use any number identified by the children to talk about the number that comes before it and after it on a number line.)

Count out loud with the children from 0 to 20 as you point to the corresponding numerals on the number line. Hold the Oops! Number Line so all children can see.

2. Complete the Oops! Number Line 0–20

Begin the activity by removing two number tiles between 10 and 20 from the Oops! Number Line and hold them in your hand. Think out loud, asking what comes before and after the missing number, and count using the classroom number line to figure out where the missing tiles go to complete the Oops! Number Line.

- *Let's review how to do this activity. I'm going to take two number tiles off the Oops! Number Line. Now, I need to put these two numbers back in the correct place. I have the numbers ___ and ___. Do you remember how I can figure out where to put them on the number line?*
  (Review the activity by removing two tiles and showing the children the tiles while reading the numerals on the tiles. Encourage children to talk about where they think the tiles should go without saying whether they are correct or incorrect.)

- *Those are some good ideas. One way I know to figure out where the number tiles go is to count. I'm going to count until I get to a missing number and figure out which number I should put there — I can use the numbers that come before and after my missing number to help me figure it out.*
  (Model counting from zero and, when you encounter a missing number, say the name of the number that is missing. Then, identify the tile that belongs in the missing place. Repeat the process to replace the remaining tile. Review your answer by counting, naming the number before the replaced tile, the replaced tile, and the number after the replaced tile.)

Next, remove all tiles from 0 to 10 on the Oops! Number Line. Invite child volunteers to select a number tile and read the numeral on it. Help children think out loud to figure out where the tiles go, using strategies like counting, identifying the number before and after the tile, and using the classroom number line as a guide.

- *Now, let's try something different. I'm going to take the numbers from 0 to 10 off of the Oops! Number Line. Can I have volunteers to help me put the number line back together? Can you tell me what number you have?*
  (Have each child choose a number tile. Help children read the numerals on their tiles out loud before placing them on the Oops! Number Line. Encourage children to talk to one another to figure out where to place the tiles.)

Encourage children to check that the tiles are correctly placed by counting from 0 to 10 using the completed Oops! Number Line. Consult the classroom number line as a reference.

- *Let's count to check if we're correct. Let's also look at this number line to compare and check if we're correct. Are we correct?*
  (Model counting using the number line created by the children. Use the classroom number line to compare if the children have created a number line that is correct.)

If a child makes a mistake replacing a tile, say, "Oops!" and remove the tile, using the opportunity to explain how you know the child made a mistake.

- *Let's see, what number is before this missing number? What number is after this missing number?*
  (Help children figure out the missing numbers by asking questions such as, "Does the number come before or after the missing number?" If children need more help, tell the children to look at another completed number line. Use this strategy for each of the missing numbers.)

Encourage the children to check that the tiles are placed correctly by counting from 0 to 20 using the completed Oops! Number Line. Count out loud while pointing to each numeral on the number line.

3. Play Number Scene

Introduce the Number Scene activity by displaying each side of the die and describing the dot arrangement for each number.

Then recreate each dot arrangement on the dry erase board. Encouraging children to

count along with you as you draw the dots.

- *Math Detectives, today we're going to play a new game called Number Scene. For this game we use a large-sized die. Let's take a close look at each side of our die.*
  (Hold up the die for all of the children to see, and describe each side of the die:
  1 — a single dot in the middle of the die face
  2 — two dots arranged on a diagonal at opposite corners of the die face
  3 — three dots in a row arranged on a diagonal, with two at opposite corners of the die face
  4 — four dots, one at each corner of the die face
  5 — five dots, one at each corner of the die face with a single dot in the middle
  6 — two rows of three dots along opposite sides of the die face)

- *I'm going to draw the dots on my dry erase board. Count with me as I draw all of the dots!*
  (Recreate the six different dot arrangements of the die on the dry erase board. Have children count as you draw the dots.)

After exploring the faces of the die, explain that once the die is rolled, there will be only five seconds to see the dots before saying out loud how many dots there are.

- *We're going to practice our Math Detective skills to identify the number arrangement of dots on the face of a die. But we have to be quick! You'll only see the dots for a few seconds!*
  (Show the children all six faces of the die one more time).

Select a volunteer to come up and roll the die. Show the children the face of the die that was rolled for five seconds. Hide the die behind you so the children cannot see it.

Ask children to say how many dots they saw, recording answers on the dry erase board under the corresponding dot arrangement.

- *Our volunteer is going to roll a die. I will show you the face of the die that was rolled for five seconds. Try to remember how many dots there are. Pay close attention to how they are arranged!*
  (Have the volunteer roll the die. Pick it up and show the children the dot arrangement that was rolled; after five seconds, hide the die.)

- *How many dots did you see? Can you raise your hand to tell me how many dots there were?*
  (Call on volunteers and keep a record of the number each child guesses under the dot arrangements you drew on the dry erase board, so that you and the children can see which numbers children guessed the most.)

- *Now let's count the number of dots on the face of the die that our volunteer rolled. There are ___ dots. We have some different answers because it's hard to see how many dots there are when you don't have time to count each dot. We'll keep playing this game to practice!*
  (Model counting the dots on the face of the die. Compare to the children's answers recorded on the dry erase board.)

Repeat the activity several times, having a volunteer roll the die and show the face to the children for five seconds. Hide the die as you collect answers for how many dots there were. Then reveal the die and counts the dots to confirm answers.

Guided Book Reading

Busy Bugs: A Book about Patterns

The bugs are celebrating a special day and making patterns to prepare for their show. Review patterns, focusing on AB patterns. Ask your Math Detectives to be on the lookout for AB patterns as they watch the bugs prepare.

Overview

During **Circle Time**, read ***Busy Bugs*** with children. As you read, review and talk about **patterns** found in the book. Focus math talk around **AB patterns**. Key– marked with a pause points ⏸ in the teacher's guide and book pages– are included as opportunities to ask questions to get children talking about AB patterns.

Skills and other important points to cover

- Review identifying AB patterns
- Review copying and extending AB patterns

What you will need

- *Busy Bugs (book)*

Guided Book Reading

TIMING GOAL: 15 minutes

1. Warm Up

Invite children to the Circle Time area to read the book *Busy Bugs*.

Review what a pattern is and encourage children to find patterns in the room. Then act out a simple AB pattern (e.g., clap, pat, clap, pat), asking children to copy and extend it.

- *Who remembers what a pattern is? Can someone find a pattern in the room?*
  (Review that a pattern is something that repeats and is predictable, meaning that once you read the pattern you can tell what is going to come next. Help the children identify a pattern in the room and name its parts — e.g., red stripe, blue stripe, red stripe, blue stripe)

- *Let's name this pattern. Can you copy it? Can you figure out what comes next?*
  (Act out an AB pattern: (clap), (pat), (clap), (pat). Name the pattern core elements and use AB terminology. Have children copy and then extend the pattern.)

Hold up the Busy Bugs book, and point to the AB brick pattern on the cover. Use "ABAB" terminology or "small brick, large brick, small brick, large brick" to describe the pattern, and ask children to extend the pattern, or tell you what comes next.

- *Today, we're going to read Busy Bugs. Can you spot the AB pattern here? What comes next?*
  (Point to the cover. When the children have spotted the pattern, point and name each core element together, saying, "ABAB" or "small brick, large brick" and then extend the pattern)

Ask children to predict what the story will be about.

- *Looking at the cover of this book, what do you think this book will be about?*
  (Allow children to share their thoughts. There is no right or wrong answer.)

2. Guided Book Reading (with Pause Points)

Pause at pages 4–5:

Point to the purple, yellow, purple, yellow bug body pattern. Ask children to read the pattern, using color names and then AB terminology, and to extend the pattern by telling you what comes next.

- *Can you find the AB pattern on one of the bugs? Who can read the pattern for me?*
  (Point to the bug with the purple and yellow body, name each core element together saying, "purple, yellow, purple, yellow" and "ABAB." Have the children tell you what comes next in the pattern.)

Pause at pages 14–15:

Help children find open eyes, closed eyes, open eyes, closed eyes pattern and then extend the pattern by telling you what comes next.

- *Math Detectives, do you see any patterns here? Who can read me a pattern they see?*
  (Give children the opportunity to answer, and point to the bugs' eyes and name each core element together, saying, "open, closed, open, closed" and "ABAB." Have the children tell you what comes next in the pattern.)

Pause at page 32:

Help children find the small rectangle, large rectangle, small rectangle, large rectangle pattern and then extend the pattern by telling you what comes next.

- *Remember this shape is a rectangle. Can you name the shape pattern here? What comes next?*
  (Name the shape and give children the opportunity to find the pattern, naming each core element together, "small rectangle, large rectangle, small rectangle, large rectangle" and "ABAB." Encourage the children to extend the pattern.)

3. Wrap Up

Review what an AB pattern is. Create an AB pattern and ask children to copy and extend it.

- *Today we found several patterns in our book. What kind of patterns did we find today in Busy Bugs? Who can tell me what comes next in my pattern?*
  (Review what an AB pattern is, then create an AB pattern — e.g., smile, frown, smile, frown — and have children copy and extend it.)

Computer Center

Vegetable Patterns

Skills

- Review identifying AB and ABB patterns
- Review extending and identifying missing core elements in AB and ABB patterns

Vegetable Harvest

Skills

- Review combining numbers from 1 to 9
- Review counting and numeral identification from 1 to 9

Keep in Mind ...

During **Computer Center Time**, pairs of children play focus games ***Vegetable Patterns*** and ***Vegetable Harvest.*** Children review math skills covered in the week.

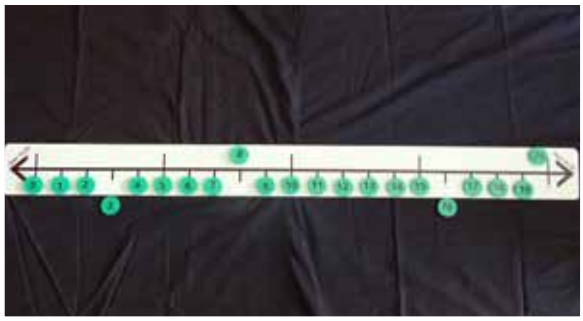
Remind children to count out loud and to talk to each other about the math while paying the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Count with Allie*
- *Apple Picking*
- *Bug Catcher*
- *Huff-Puff-a-Tron*

Hands-on Center

OOPS! Number Line 0–20



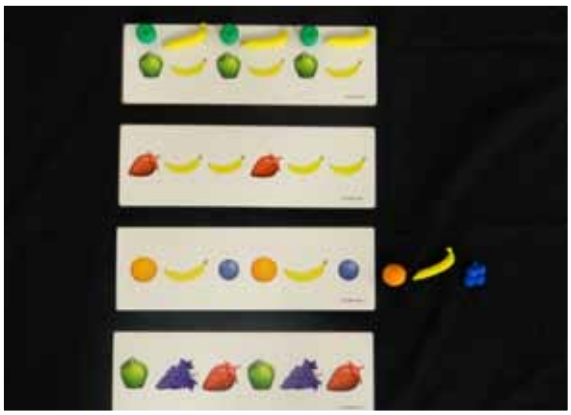
Skills

- Review Oops! Number Line 0–20 as a number line 0–20
- Review identifying a missing numeral on a number line 0–20

Materials

- *Oops! Number Line 0–20*
- *Oops! number tiles 0–20*
- *Small number line 0–20*

Fruit Patterns



Skills

- Review identifying, creating, copying, and extending AB and ABB patterns

Materials

- Plastic fruit
- Fruit Pattern cards

Keep in Mind...

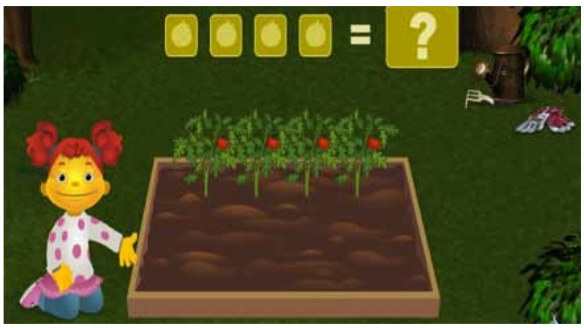
During **Center Time**, small groups or pairs of children play the focus games **OOPS! Number Line 0–20** and **Fruit Patterns**. Children review math skills covered in the week.

Additional games also available during this time:

- *Simple Shape Concentration*
- *NUMBO 0–5*
- *Pipe Cleaner Shapes*
- *Oops! Number Line 0–10*

Challenge Game Play

Vegetable Harvest (Sid the Science Kid)



Gabriella has done a wonderful job gardening and now she needs our help collecting the vegetables she has grown. Picking the vegetables and counting how many she has altogether will introduce children to combining numbers, while also reviewing numbers and counting from 1 to 9.

Overview

During **Circle Time**, play ***Vegetable Harvest*** with children on the **Interactive Whiteboard** (IWB). As you demonstrate how to play the game, use this opportunity to talk about **counting and grouping things together** when you want to know how many **altogether,** or when you want to know how many there are **in total.**

Skills and other important points to cover

- Introduce combining numbers from 1 to 9
- Review counting from 1 to 9
- Review numeral identification from 1 to 9

What you will need

- Interactive Whiteboard (IWB)
- Sid the Science Kid *Vegetable Harvest*
- Classroom number line

Challenge Game Play

TIMING GOAL: 25 minutes

1. Warm Up

Invite children to the IWB area to play Vegetable Harvest, a new game on the IWB.

Review counting from 1 to 9, and that the last number you count is how many there are altogether or "in total'.."

- *Let's count so we have nine children altogether, or nine children in total. Count with me.*
  (Model counting nine children. Emphasize that the last number you count is how many children there are altogether or 'in total'.)

2. Introduce Challenge Game

Model playing Vegetable Harvest by clicking on all of the vegetables and counting along with Gabriella to find out how many vegetables there are "in total." Read the numeral choices out loud as you figure out which answer is correct.

- *Let's count the vegetables that Gabriella harvested!*
  (Model pointing to each vegetable as you count.)
- *How many vegetables are there altogether or in total? Which one of these choices has the correct number?*
  (Repeat the number of vegetables you counted. Read the two numeral choices and model tapping the correct answer with your finger.)

Model recovering from a mistake.

- *Whoops! That's not the right answer. Let's count all of the vegetables altogether again. Now let's read our two number choices.*
  (Count the number of vegetables in total again, and say the number choices as you think out loud to find the correct answer.)

Allow children, or several volunteers, to have a turn playing Vegetable Harvest.

3. Wrap Up

Review the concepts covered in the challenge game — finding out how many there are altogether or in total, and counting from 1 to 9.

- *Let's think back to what we learned today. We talked about counting and about finding out how many there are altogether — can you remember how we did this?*
  (Guide the discussion to counting all objects or vegetables, and that the last number you count is how many there are altogether or in total.)

- *Math Detectives, let's finish by counting from 1 to 9 using our number line!*
  (Point to each numeral on the number line as you count out loud from 1 to 9.)

Remind children they will have another chance to play the game with a partner during Computer Center time.

Computer Center

Vegetable Patterns

Skills

- Review identifying AB and ABB patterns
- Review extending and identifying missing core elements in AB and ABB patterns

Vegetable Harvest

Skills

- Review combining numbers from 1 to 9
- Review counting and numeral identification from 1 to 9

Keep in Mind ...

During **Computer Center Time**, pairs of children play focus games ***Vegetable Patterns*** and ***Vegetable Harvest.*** Children review math skills covered in the week.

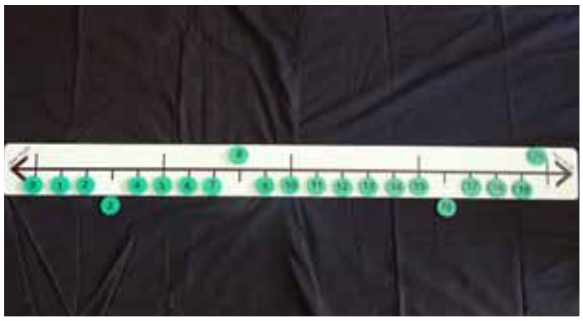
Remind children to count out loud and to talk to each other about the math while paying the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Count with Allie*
- *Apple Picking*
- *Bug Catcher*
- *Huff-Puff-a-Tron*

Hands-on Center

OOPS! Number Line 0–20



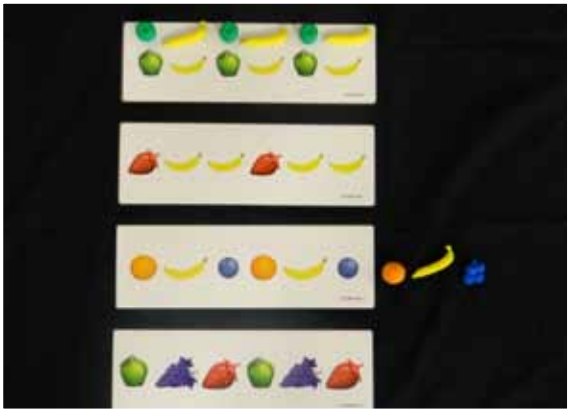
Skills

- Review Oops! Number Line 0–20 as a number line 0–20
- Review identifying a missing numeral on a number line 0–20

Materials

- *Oops! Number Line 0–20*
- *Oops! number tiles 0–20*
- *Small number line 0–20*

Fruit Patterns



Skills

- Review identifying, creating, copying, and extending AB and ABB patterns

Materials

- Plastic fruit
- Fruit Pattern cards

Keep in Mind...

During **Center Time**, small groups or pairs of children play the focus games **OOPS! Number Line 0–20** and **Fruit Patterns**. Children review math skills covered in the week.

Additional games also available during this time:

- *Simple Shape Concentration*
- *NUMBO 0–5*
- *Pipe Cleaner Shapes*
- *Oops! Number Line 0–10*

Video Co-viewing

Termite Towers (The Cat in the Hat)

After their block towers continue to fall, The Cat in the Hat, Nick, and Sally pay a visit to Terry the Termite for some building advice. During their trip, The Cat and Terry help children review simple shapes and geometric properties (triangle, square, side). As Sally and Nick help plug holes in the termite tower, children will also review counting from 1 to 15.

Overview

During **Circle Time**, watch ***Termite Towers*** with children on the **Interactive Whiteboard** (IWB). Look and listen for key pause points (marked with ⏸ and a "beep"), and use them as opportunities to ask questions to get children talking about math.

Skills and other important points to cover

- Review identifying simple shapes and geometric properties (triangle, square, side)
- Review counting sides of simple shapes (triangle)
- Review counting from 1 to 15

What you will need

- Interactive Whiteboard (IWB)
- The Cat in the Hat: *Termite Towers* video (11:29 minutes)
- Classroom number line

Video Co-Viewing Activity

TIMING GOAL: 25 minutes

1. Warm Up

Invite all children to the IWB area to watch Termite Towers on the IWB.

Review identifying shapes (triangle, square), counting sides of simple shapes (triangle), and counting from 0 to 15.

- *Math Detectives, let's think about shapes! Who remembers the name of this shape?*
  (Model sky-drawing a triangle and a square. Help children identify each shape by name.)
- *Let's sky-draw a triangle together, and count the sides. One, two, three. A triangle has three sides altogether.*
  (Model sky-drawing a triangle, and count how many sides there are altogether.)
- *Before we watch the video, let's practice counting from zero to 15. Ready?*
  (Model counting from 0 to 15 and pointing to each numeral on the number line. Encourage children to count with you.)

Remind children you will pause the video to talk about the math they see.

Start the video.

2. Video Co-Viewing (with Pause Points)

1. 0:44 — The Cat is stacking blocks.

Encourage children to name the shapes of the blocks (square and triangle) and to count how many blocks there are altogether (5).

- *Math Detectives, do you see the math I see? What shapes do you see here? How many blocks are there altogether?*
  (Guide discussion to talk about the triangle and squares on the faces of the blocks. Encourage children to count out loud how many blocks there are altogether as you point to the shapes on the screen.)

Encourage children to predict whether the blocks The Cat stacks will stay up or fall down.

Take a poll of the children's prediction, encouraging them to count with you how many children think the tower will stay up and how many think the tower will fall down.

- *We're going to take a vote, but raise your hand only once to vote. Who thinks the blocks are going to stay up? Keep your hands up and when I touch your hand, you can put your hand down. Count with me!*
  (Model counting and encourage children to count out loud with you.)

- *Now, who thinks the blocks are going to fall down? Again, don't raise your hand if you already did. Keep your hands up and when I touch your hand, you can put your hand down. Count with me!*
  (Model counting and encourage children to count out loud with you.)

Resume video.

2. 5:13 — The Cat, Sally, and Nick walk into the termite tower with Terry the Termite.

Encourage children to count the total number of holes (15) that have to be fixed.

- *Look at all the holes that have to be fixed! How many holes are there altogether?*
  (Model counting, and encourage children to count out loud with you as you point to each hole. Reinforce the idea that the last number you count is how many holes there are altogether.)

Ask children to predict what will happen next in the video.

Resume video.

3. 7:48 — Two termites are standing next to the triangular entrance of the tower as Raymond, the desert mole rat, walks away.

Encourage children to name and describe the shape of the hole into the termite tower (triangle). Think out loud to help children figure out how many sides the triangle has altogether.

- *That's a large hole! Can you tell me about the shape of the hole? Let's sky-draw a triangle.*
  (Guide discussion to name the shape of the hole — a triangle — made by Raymond. Model and encourage children to sky-draw a triangle.)

- *Do you remember how many sides a triangle has altogether? Let's count to find out. One, two, three. A triangle has three sides altogether.*
  (Count out loud as you point to each side of the triangle. Reinforce the idea of altogether.)

Ask children to predict what will happen next in the video.

Resume video. End 11:29

3. Wrap-Up.

Review the concepts covered in the video — identifying shapes (triangle, square), counting sides of a triangle, and counting (1 to 15).

> *Let's think back to the math we learned today. Who wants to share about what we learned?* (Encourage children to tell you what they remember from the lesson. Guide discussions to talk about shapes, triangles and squares, counting sides of the shapes, and counting holes from 1 to 15.)

Remind children that, as Math Detectives, they should always listen carefully and keep their eyes open to find math all around!

Computer Center

Flower Garden

Skills

- Review counting from 0 to 19
- Review one-to-one correspondence and cardinality from 0 to 19
- Review numeral identification from 0 to 19

Sketch-a-Mite

Skills

- Review simple and challenging shapes (triangle, circle, square, rectangle, trapezoid, octagon, and pentagon)
- Review counting sides and corners (angles) of simple and challenging shapes

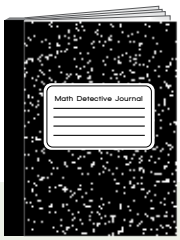
Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Flower Garden*** and ***Sketch-a-Mite.*** Children review math skills covered in the week.

Remind children to count out loud, identify shapes, and talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Apple Picking*
- *Count with Allie*
- *Bug Catcher*
- *Huff-Puff-a-Tron*
- *Vegetable Patterns*
- *Vegetable Harvest*



Math Detective Journal

Math Detective Journal

During Math Detective Journal Time, review with children the AB and ABB patterns from previous activities (*Let's Go Fly a Kite* video; *Busy Bugs* book, Shape Sticker and Fruit Patterns activities). Then have children search the classroom looking in the center areas, on the walls, at classmates' clothing, and even in their own Math Detective Journals to find AB and ABB patterns to copy and extend in their Journals.

NUMBO 1–20

Children play this alternate version of the game BINGO to review identifying numbers 1–20. Children take turns selecting number cards from a pile and saying the chosen number out loud to their partner. The child finds the number on his/her NUMBO board and covers it with a cover chip. When the entire board is covered with chips the game is won, and partners switch roles and play again.

Overview

During **Small Group Time**, review **AB** and **ABB patterns** to help children look for, identify, copy, and extend the AB and ABB patterns found around the classroom in their **Math Detective Journals**. Remind children there is a new game, **NUMBO 1–20**, available for them to play in the Hands-On Center.

Skills and other important points to cover

- Review identifying AB and ABB patterns
- Review copying and extending AB and ABB patterns

What you will need

- Math Detective Journals (one per child)
- Crayons
- NUMBO 1–20 board (as an example)

Math Detective Journal

TIMING GOAL: 20 minutes

1. Warm Up

Invite children to the Small Group area to review AB and ABB patterns.

Demonstrate an AB pattern that involves physical movement and ask the group to predict what comes next. Then ask children to copy the pattern and name the core pattern elements.

- *I'm going to demonstrate a pattern that we worked with before. Watch and listen: (clap), (stomp), (clap), (stomp), (clap). Can you tell me what comes next?*
  (Demonstrate the pattern by clapping and stomping as you say the words "clap" and "stomp," and encourage children to predict what comes next in the pattern.)

- *Can you copy the pattern? Let's do the pattern again together: (clap), (stomp), (clap), (stomp). What are the core pattern elements?*
  (Help children copy the pattern. Have children name the core elements — clap and stomp — that make up the pattern.)

Encourage children to think back and talk about the patterns identified in the previous week — the red, white pattern from The Cat in the Hat and any of the patterns from Busy Bugs (small brick, large brick; yellow, purple; open eyes, closed eyes; small rectangle, large rectangle) or their Math Detective Journals.

- *What are some other places where we worked with patterns? Why don't I get us started? I remember seeing a pattern on The Cat's hat when we watched the video, Let's Go Fly a Kite. In that same video we also saw a pattern on the kite — it was red, white, red, white or ABAB. Do you remember the patterns we saw in the book Busy Bugs?*
  (Help children recall pattern activities and examples from the previous week. In addition to the video and book, children also may remember patterns from the Shape Sticker Patterns and Fruit Patterns activities from the previous week).

Review ABB patterns as a different example of a pattern, using clap, stomp, stomp. Help children identify and name the core elements of the pattern.

- *A pattern is something that repeats so we can tell what will come next, like with our AB patterns. Do you remember the other kind of pattern we talked about? Here's an example: (clap), (stomp), (stomp), (clap), (stomp), (stomp). What are the next three core elements in this pattern?*
  (Model and repeat the clap-stomp-stomp ABB pattern a few times. Help children name the next three core elements.)

Help children identify and name the core elements of ABB patterns in their Math Detective Journals from the Shape Sticker Patterns or Fruit Patterns activities from the previous week.

- *Let's look for some ABB patterns in your Math Detective Journals from last week. Who has one to share?*
  (Identify and name the core elements of the ABB patterns in children's Journals. If no child has an

ABB pattern in their Journal, review AB patterns from Journals and provide more examples of ABB patterns on your own.)

2. Introduce Math Detective Journal Activity

Tell children their job as Math Detectives is to search around the classroom and find examples of AB and ABB patterns.

- *Today you are going to look around the classroom to find examples of AB and ABB patterns. You can look in the block area, or on the walls, or even on your shirts or socks!*
  (Discuss where to look — on their clothing, in center areas, in books, on the walls, and all over the room — and the kinds of examples to look for.)

Start the group off by finding an example of an AB and ABB pattern in the room.

- *To start, I'm going to look around the room and find an example of the AB and ABB patterns we're looking for.*
  (Identify an AB and ABB pattern on a child's clothing or on some other object that hasn't been discussed before. Name the core elements of the patterns using the names (e.g. red stripe, blue stripe) and A and B terminology.)

Then, encourage children to help each other find AB and ABB patterns around the room. Remind children that when they find an example, they should come back and draw it in their Journals.

- *Now, Math Detectives, it's your turn to find some AB and ABB patterns in the room. You can work with a partner to find patterns. Each time you find a pattern, come back to the table and draw it in your Journals!*
  (Encourage children to talk to one another to find patterns, and help children draw the patterns in their Journals as they find them. Children may need extra help in figuring out how to represent in their Journals the patterns they find in the classroom.)

3. Wrap-Up

Encourage children to share the patterns they found, and to practice naming the core elements of their patterns out loud with a partner.

- *Now, let's share our patterns with our neighbors. When you show your patterns to your neighbors, point and say each core pattern element.*
  (Help children share their patterns with a partner and to name the core elements in their patterns as they point to them.)

Remind children a new game, NUMBO 1–20, is available to play with a partner during Center Time. Remind children NUMBO 1–20 is the same game as NUMBO 0–5 but with more numbers.

- *We worked with a lot of patterns today, Math Detectives! Remember that numbers are also part of math. So in the Hands-On Center this week we'll have a new number game — NUMBO 1–20. You play it just like NUMBO 0–5, but this time you'll be looking for numerals from 1 to 20.*
  (Hold up the NUMBO 1–20 board.)

Easy Game Play

Flower Garden (Curious George)

From yellow daisies to blue tulips, George's garden is filled with beautiful flowers. As he waters the flowers, it's our job to count them. Clicking each flower as you count will help children know how many flowers there are altogether, while the number line will help children review numerals from 0 to 19.

Overview

During **Small Group Time**, demonstrate how to play ***Flower Garden*** on the **Interactive Whiteboard** (IWB). Use game play as an opportunity to practice **counting** and **one-to-one correspondence** as you call on individual children to try out the game on the IWB. Remind children of **basic game play rules**.

Skills and other important points to cover

- Review counting from 0 to 19
- Review one-to-one correspondence and cardinality from 0 to 19
- Review numeral identification from 0 to 19

What you will need

- Interactive Whiteboard (IWB)
- Curious George: *Flower Garden* game

Easy Game Play

TIMING GOAL: 10 minutes

1. Warm Up

Invite children to the IWB area and review counting from 0 to 19 using the number line and the three sides of a triangle.

- *Today, we're going to play a game on the Interactive Whiteboard. But first, remember how we counted the holes Nick and Sally and The Cat had to plug in Termite Towers? Let's practice counting from 0 to 19 using our number line.*
  (Help children count from 0 to 19 pointing to each numeral on the number line.)

- *I remember something else we counted! We also counted the sides of a triangle. Let's do that again while we sky-draw triangles!*
  (Model sky-drawing triangles as you count the three sides out loud.)

2. Introduce Easy Game

Remind children of basic game play rules — only one child can touch the IWB at a time, and they must take turns playing.

- *Today we are going to play another game on the Interactive Whiteboard! But we have to be careful, only one of us can touch the screen at a time, and we need to take turns.*
  (Model how touching the board makes things happen; load the game Flower Garden.)

Think out loud as you model how to play Flower Garden. Touch each flower and count along with The Man in the Yellow Hat each time a flower opens.

- *Now, let's play Flower Garden. We can use our finger to tap on the flowers that George grew. To help us keep track, I'm going to click on the flowers in order from left to right.*
  (Run your finger along the bottom of the screen to show "left to right." Model touching the flowers and counting out loud as each flower opens. Point out that the flowers open when they are counted.)

- *How many flowers do we have altogether? How do you know?*
  (Reinforce that the last number you count is how many flowers there are altogether. Point to the number line at the bottom of the screen that represents how many flowers altogether.)

Walk children through a couple of examples. Model how to recover from a mistake.

- *Whoops. I counted that one already! I'm going to look at my flowers starting from the left and moving to the right and only click on flowers that AREN'T open.*
  (Talk out loud as you identify which flowers are open and were already counted. Pick up counting when you find an unopened flower.)

- *The Man in the Yellow Hat is telling us to keep counting. I must have missed a flower. Let's look for*

an unopened flower and then count all of our flowers altogether.
(Talk out loud as you identify which flowers are not open and were not yet counted. Pick up counting when you find an unopened flower.)

Call volunteers up to play the game. Ask children to think out loud during their turns.

Remind children that during Computer Center Time, they will play Flower Garden with a partner on a computer using a mouse.

During Computer Center Time, you can play this game again with a partner! But instead of touching the screen, you'll use the mouse to click on the flowers to count them.

3. Wrap-Up

Review counting from 0 to 19 using the number line. Then review one-to-one correspondence by counting each child in the group as you point to him/her.

- *All right, Math Detectives! Let's think about the math we did today. We learned about counting from 0 to 19 while helping to count George's flowers. Let's count from 0 to 19 using our number line!*
  (Help children count from 0 to 19 while pointing to each numeral on the number line.)

- *We also learned about making sure we don't skip anything or count anything twice when we're counting to find out how many "altogether." Let's practice by counting how many children are in our group. I'm going to count each of you to find out how many children there are altogether.*
  (Model counting all of the children in the group by pointing to each child as you count him/her, and by counting in order from left to right.)

Hands-on Center

NUMBO (1–20)

Skills

- Review numeral identification from 1 to 20

Materials

- *NUMBO 1–20 boards*
- *NUMBO 1–20 calling cards*
- *Cover Chips*

Dominoes

Skills

- Review subitizing from 1 to 6
- Review counting from 1 to 6

Materials

- Dominoes

Keep in Mind...

During **Center Time**, small groups or pairs of children play focus games **NUMBO (1–20)** and **Dominoes**. Children review math skills covered in the week.

Additional games also available during this time:

- *Simple Shape Concentration*
- *NUMBO 0–5*
- *OOPS! Number Line 0–10*
- *Fruit Patterns*
- *Pipe Cleaner Shapes*
- *OOPS! Number Line 0–20*

Computer Center

Flower Garden

Skills

- Review counting from 0 to 19
- Review one-to-one correspondence and cardinality from 0 to 19
- Review numeral identification from 0 to 19

Sketch-a-Mite

Skills

- Review simple and challenging shapes (triangle, circle, square, rectangle, trapezoid, octagon, and pentagon)
- Review counting sides and corners (angles) of simple and challenging shapes

Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Flower Garden*** and ***Sketch-a-Mite.*** Children review math skills covered in the week.

Remind children to count out loud, identify shapes, and talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

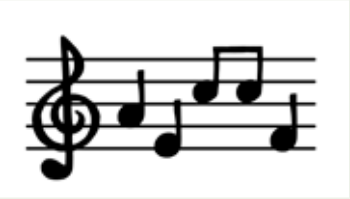
Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Apple Picking*
- *Count with Allie*
- *Bug Catcher*
- *Huff-Puff-a-Tron*
- *Vegetable Patterns*
- *Vegetable Harvest*

Math Circle Routine

Dominoes:

Using the game of dominoes, children can review the common dot arrangements for numbers 1 to 6 on the faces of oversized tiles. To play dominoes, the double 6 domino is placed face-up between the two players. This tile starts the "line of play." Next, the 27 remaining domino tiles are turned face down in random order, and two players each pick seven tiles. The remaining thirteen tiles are kept face down in a pile and used when a player does not have a match and needs a new tile from the pile. Players then take turns figuring out if one of their tiles matches one of the numbers on either end of the line of play, beginning with the double 6 domino. The game ends when one player wins by using his/her last tile, or when the game is "blocked" because neither player has a match and there are no tiles left in the extra pile. If the game is blocked, whoever has the least number of tiles left wins the game.



"Head, Shoulders, Knees, and Toes" Song

Children learn to sing a traditional early childhood song that focuses on body parts and provides an opportunity for children to count those parts.

Overview

During **Circle Time**, demonstrate how to play **Dominoes** to count and recognize number arrangement **(subitizing)** for the numbers 1 to 6 that appear as arrangements of dots on the tiles. In support of counting, children sing "**Head, Shoulders, Knees, and Toes**" to **count** their body parts.

Skills and other important points to cover

- Review subitizing from 1 to 6
- Review counting from 1 to 6

What you will need

- Foam die
- Dominoes (one container)

Math Circle Routine

TIMING GOAL: 10 minutes

1. Warm Up

Invite all children to the Circle Time area.

Show children the large foam die and ask them to tell you what they see (color, shape, size, dot arrangement on faces).

❞ *Who can tell me what you see when you look carefully at this die?*
(Encourage children to be very literal and tell you exactly what they see. Help children talk about what they remember about the dot arrangements on the die when playing Number Scene last week.)

Review each face of the die and the dot arrangement with children.

❞ *Great descriptions, Math Detectives! Let's review each face of the die, starting with one.*
(Hold up the die for all of the children to see, and describe each side of the die:
1 — a single dot in the middle of the die face
2 — two dots arranged on a diagonal at opposite corners of the die face
3 — three dots in a row arranged on a diagonal, with two at opposite corners of the die face
4 — four dots, one at each corner of the die face
5 — five dots, one at each corner of the die face with a single dot in the middle
6 — two rows of three dots along opposite sides of the die face)

Show the face of the die with two dots to children for five seconds and ask children to identify how many dots there were altogether without counting. Repeat with the three-dots face of the die.

❞ *I am going to show you a face of the die. Let's see if anyone can tell me how many dots there are just by quickly looking. Remember, paying attention to how the dots are arranged can help!*
(Show the children the face of the die with two dots for five seconds, then hide the die behind you so the children cannot see it. Ask for volunteers to tell you how many dots they saw. Help children count to check if their ideas were correct. Repeat at least one more time.)

2. Introduce Dominoes

Introduce Dominoes by displaying a complete set of dominoes (28 tiles) and passing around a few tiles to the children. Help children explore the set of dominoes by asking them to look closely and share what they see (color, shape, size, dot arrangements, and a line down the middle).

❞ *Math Detectives, today we're going to play a new game, called Dominoes. Some of you may be familiar with this game. Before we start playing, let's look closely at the set of Dominoes and talk about what we see.*
(Pass around the domino tiles and encourage children to be very literal and tell you exactly what they see. Prompt them for things like the color of the dominoes, shape, and what is contained on the face of each tile.)

Help children identify each domino by name, e.g., a "one-five" domino has one dot on one half and five dots on the other half. Show the domino with six dots on both sides as an example of "doubles" and as the starter domino for the game.

❞ *Let's talk about our dominoes some more. On this domino there is one dot on one side of the line and on the other side there are five dots. Dominoes are named after the number of dots on each side, so this is called a "one-five" domino. I have another domino that has a six on both sides. It's called a "double six" and it's the tile that gets our game going! Now I'd like to hear all of my Math Detectives name a domino, too!*
(Describe the two sample dominoes to the children. Help children name the remaining dominoes out loud. Encourage children to talk to each other to figure out how to "read" the dominoes.)

Ask for a volunteer to demonstrate partner game play with you. Begin by putting the double sixes domino between you and the volunteer, and then turn the remaining 27 tiles face down. You and the volunteer each choose seven tiles, keeping the remaining tiles face down in a pile.

❞ *Now, let's learn how to play the game! This is a two-person game, so I need one volunteer. First, start with the tile with two sixes on it, which is called the "double six," and place it in front of you. Next, each player chooses seven tiles from the pile and places them face down in front of them.*
(Show the children the double-six domino. Have the volunteer choose seven tiles from the pile and place them face down on the floor. Also, choose seven tiles for yourself.)

Explain that you keep your tiles face down so your partner can't see them. Demonstrate naming the two sixes on the sides of the tile in between you and your partner. Model either selecting a tile from your own pile to match or selecting a tile from the extra pile, hoping for a match. Help the child volunteer take her turn.

❞ *When it's your turn, look under your tiles one by one, without showing the faces to your partner, until you find one that matches one of the sides of the tile in between.. Put your matching tile next to the one between, like this. If you don't have a match in your pile, choose one from the big pile. If you choose a matching tile, add it to the game. If you don't pick a match, then you keep the tile and it's your partner's turn!*
(Talk out loud as you look at your own tiles to find a match for the double sixes. If you have a match, play it; if you don't, choose a tile from the pile, either playing it or adding it to your pile. Then help the child volunteer take her turn.)

Model several more turns of the game and some strategies for figuring out how many dots there are on the tiles and how to check if your tiles match. For additional support, you can turn over each of your tiles as you model looking for a match.

❞ *You can count the number of dots on your tiles if you don't know how many there are just by looking at it. Remember, when you find a match, place it down alongside the tile it matches and double check that you have a match by closely looking at the dot arrangement or by counting the dots.*
(Think out loud while you figure out if the tile you have matches a number on the tile in front of you. Once you place the tile, talk out loud as you either count the dots on each end to make sure it is a match or describe the dot arrangement to know it is a match. If children need additional support, show each of your tiles as you turn it over looking for a match, so they can follow your thinking process.)

Explain that the game is over when one person uses all of their tiles or, when no one has a match. Then you count the tiles left in front of you, and the person with the least number of tiles wins.

- *You and your partner continue playing until someone uses up all of their tiles! Or, sometimes no one has a match and there are no more tiles to choose, so you count up how many tiles you have in front of you, and the person with the LEAST wins.*
  (Model counting how many tiles you have in front of you and your partner has in front of her and, pretending the game has ended, identify the winner with the least number of tiles left).

Remind children the game will be available to play with a partner during Center Time.

3. Sing "Head, Shoulders, Knees, and Toes"

"Head, Shoulders, Knees, and Toes" Lyrics

Verse 1
Head, shoulders, knees, and toes, knees and toes
Head, shoulders, knees, and toes, knees and toes
Eyes and ears and mouth and nose
Head, shoulders, knees ,and toes, knees and toes

(Repeat, getting faster each time.)

Introduce and sing the "Head, Shoulders, Knees, and Toes" song, demonstrating with both hands tapping the corresponding body parts as you sing.

- *Today, we're going to sing a song called, "Head, Shoulders, Knees, and Toes." The words are very simple. I will say them first, and then you repeat them after me.*
  (Introduce the song lyrics line by line. Say one line and have the children repeat the line after you.)

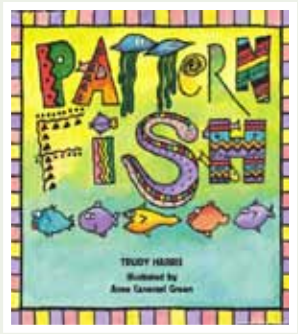
- *Have you heard this melody before? Now, let's sing the words to this melody.*
  (Hum the melody of the first line of the song. Lead the children in singing the song, using both your hands to tap the corresponding body part as you sing about it.)

Count how many shoulders and knees you have. Pointing to each as you count.

- *How many shoulders do we have, Math Detectives? Let's count!*
  (Point to each shoulder as you count, reinforcing that the last number you count is how many shoulders you have altogether. Then count how many knees you have altogether.)

Guided Book Reading

Pattern Fish



Glide through a colorful sea of creatures and patterns with your Math Detectives. As you read, help children to identify and extend AB and ABB patterns while also introducing them to ABC patterns. Some of the patterns are even fun enough to count!

Overview

During **Circle Time**, read ***Pattern Fish*** with children. As you read, review and talk about patterns found in the book. Focus math talk around **AB, ABB,** and **ABC patterns.** Key pause points – marked with a ⏸ in the teacher's guide and book pages – are included as opportunities to ask questions to get children talking about AB, ABB, and ABC patterns.

Skills and other important points to cover

- Introduce identifying ABC patterns
- Review identifying and extending AB and ABB patterns
- Review one-to-one correspondence and cardinality with sets of 6 and 12 objects

What you will need

- *Pattern Fish (book)*
- Dry Erase board, markers, eraser
- Classroom number line

Guided Book Reading

TIMING GOAL: 15 minutes

1. Warm Up

Invite children to the Circle Time area to read the book, *Pattern Fish*.

Review what a pattern is and ask children to find AB and ABB patterns in the classroom.

❞ *Do you remember what a pattern is? A pattern is something that repeats. Do you see any patterns in the room?*
(Review that a pattern is something that repeats so you know what comes next. Help the children identify an AB and ABB pattern in the room and name its parts — e.g., red stripe, blue stripe, blue stripe, red stripe, blue stripe, blue stripe.)

Next, act out a simple ABB pattern (i.e., pat your shoulders, clap, clap). Ask children to name the core elements, extend, and copy the ABB pattern you demonstrate.

❞ *Now I'm going to act out a pattern for you: (pat), (clap), (clap), (pat), (clap), (clap). What are the core elements of this pattern? Can you figure out what comes next? Do you think you can copy it?*
(Act out an ABB pattern, e.g., pat your shoulders, clap, clap, and review the core elements by name and using A and B terminology. Have children copy and extend the pattern.)

Hold up the Pattern Fish book and ask children to predict what the story will be about.

❞ *Today, we're going to read Pattern Fish. Looking at the cover of this book, what do you think this book will be about?*
(Allow children to share their thoughts. There is no right or wrong answer.)

2. Guided Book Reading (with Pause Points)

Pause at pages 1–2:

Ask children to find the pattern on the page (yellow, black, yellow, black). Ask children to read the pattern using color names and then AB terminology, and to extend the pattern by telling you what comes next. Then turn to pages 3–4 to see the pattern continue.

❞ *Math Detectives, do you see any patterns here? What kind of pattern is it? Does anyone think they know what comes next?*
(Give children the opportunity to answer, and point to the pattern on the fish, helping them identify "yellow, black, yellow, black" and "ABAB." Have the children tell you what comes next in the pattern. Turn to pages 3 and 4 to see if they're right.)

Pause at pages 5–6:

Point to the pattern on the eel and ask the children to read the pattern using the names "stripe" and "dot" and then A and B terminology, and to extend the pattern by telling you what comes next. Then turn to pages 7–8 to see the pattern continue.

- *Does anyone think they can find the pattern on this eel? Let's read it out loud together.*
  (Point to the eel and name each part of the pattern together, saying, "stripe, dot, dot, stripe, dot, dot" and "ABB, ABB." Have the children tell you what comes next in the pattern and then briefly turn to pages 7 and 8 to see if they're right.)

Turn back to page 5–6 and model counting the number of stripes (6) and dots (12) on the eel.

Model thinking out loud to figure out if there are more stripes or more dots on the eel.

- *I wonder how many stripes and how many dots this eel has. Are there any Math Detectives that think they can figure it out by counting with me?*
  (First, count the stripes out loud with the children, pointing to each while you count. Repeat the total number out loud and write it on the dry erase board. Then, count the dots out loud with the children, pointing to each while you count. Repeat the total number out loud and also write it on the dry erase board.)

- *Which do you think is a bigger number, 12 or 6? How do you know? So are there more stripes or more dots?*
  (Think out loud as you help children figure out which number is bigger, 12 or 6, using the number line if children are having difficulty.)

Pause at page 17–18

Introduce the new pattern — an ABC pattern. Ask children to repeat the pattern and movements the octopus is making — stretch, spurt, glide, stretch, spurt, glide. The octopus is stretching out his arms, spurting his body up quickly, and gliding to the side.

- *This octopus is really on an underwater ride. This is a new kind of pattern! Can you say the pattern out loud with me: stretch, spurt, glide; stretch, spurt, glide. How about we use ABC? A, B, C, A, B, C. Let's act this pattern out together using our arms while we keep repeating our pattern.*
  (Have the children say the pattern out loud with you. Then, ask them to act out the motions of the pattern, similar to the octopus in the picture. Model these movements for them, using your arms and upper body.)

3. Wrap Up

Review what an ABC pattern is. Create an ABC pattern and ask children to copy and extend it.

- *Let's think about what we learned today. We found a few different patterns in our book, including a new one: ABC. Together, let's make our own ABC pattern and then see if you can extend it on your own!*
  (Review what an ABC pattern is with the children, and then create one — e.g., pat your head, pat your shoulders, pat your stomach; pat your head, pat your shoulders, pat your stomach. Have children copy and extend it.)

Computer Center

Flower Garden

Skills

- Review counting from 0 to 19
- Review one-to-one correspondence and cardinality from 0 to 19
- Review numeral identification from 0 to 19

Sketch-a-Mite

Skills

- Review simple and challenging shapes (triangle, circle, square, rectangle, trapezoid, octagon, and pentagon)
- Review counting sides and corners (angles) of simple and challenging shapes

Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Flower Garden*** and ***Sketch-a-Mite.*** Children review math skills covered in the week.

Remind children to count out loud, identify shapes, and talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Apple Picking*
- *Count with Allie*
- *Bug Catcher*
- *Huff-Puff-a-Tron*
- *Vegetable Patterns*
- *Vegetable Harvest*

Hands-on Center

NUMBO (1–20)

Skills

- Review numeral identification from 1 to 20

Materials

- *NUMBO 1–20 boards*
- *NUMBO 1–20 calling cards*
- *Cover Chips*

Dominoes

Skills

- Review subitizing from 1 to 6
- Review counting from 1 to 6

Materials

- Dominoes

Keep in Mind...

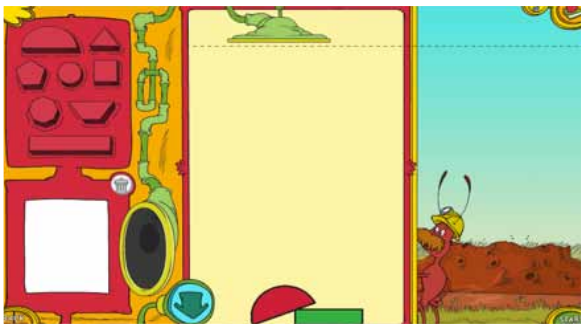
During **Center Time**, small groups or pairs of children play focus games **NUMBO (1–20)** and **Dominoes**. Children review math skills covered in the week.

Additional games also available during this time:

- *Simple Shape Concentration*
- *NUMBO 0–5*
- *OOPS! Number Line 0–10*
- *Fruit Patterns*
- *Pipe Cleaner Shapes*
- *OOPS! Number Line 0–20*

Challenge Game Play

Sketch-a-Mite (The Cat in the Hat)



Did you know that termites are amazing builders? Challenge termites in a tower building contest! You can create your own shapes or select shapes from the shape builder to build your tower. Children will review simple and challenging shapes and learn about different shapes' properties while playing this game.

Overview

During **Circle Time,** play ***Sketch-a-Mite*** with children on the **Interactive Whiteboard** (IWB). As you demonstrate how to play the game, use this opportunity to talk about **simple** and **challenging shapes** and **their geometric properties**.

Skills and other important points to cover

- Review simple and challenging shapes (triangle, square, circle, rectangle, trapezoid, octagon, and pentagon)
- Introduce semicircle
- Review counting sides and corners (angles) of simple and challenging shapes

What you will need

- Interactive Whiteboard (IWB)
- The Cat in the Hat: *Sketch-a-Mite*
- Dry erase board, markers, eraser

Challenge Game Play

TIMING GOAL: 25 minutes

1. Warm Up

Invite children to the IWB area to play Sketch-a-Mite, a new game on the IWB.

Begin by reviewing simple and challenging shapes with children — triangle, square, circle, rectangle, trapezoid, octagon, and pentagon , drawing the shapes on the dry erase board.

Encourage children to count the number of sides and corners (angles) of the different shapes named and drawn.

- *Who remembers the name of some shapes? What about the shapes we saw while watching Termite Tower?*
  (Encourage children to use names of shapes such as triangle and square. Draw the shapes children name. If a shape isn't named, draw it and name it for the children.)

- *Those are a lot of shapes! OK, Math Detectives, let's count how many sides and corners (angles) our shapes have. Let's start with the triangle. How many sides does a triangle have? How can I figure it out?*
  (Think aloud as you help children count the sides and corners (angles) of the shapes drawn.)

Draw a semicircle on the dry erase board, naming it and describing its geometric properties — curve and line or side.

- *We have a new shape today! This is a semicircle. What does it look like to you? Do you see lines or curves?*
  (Draw a semicircle on the dry erase board and guide discussion to the curve and the line (or side) of the shape. Trace the geometric properties of the semicircle with your finger as you or the children name them.)

2. Introduce Challenge Game

Note: There are two different activities that children can choose within this game: Sketch-a-Mite or Termite Tower Challenge. Start with Sketch-a-Mite.

Begin by naming each shape available to build a shape tower: triangle, square, circle, rectangle, trapezoid, octagon, and pentagon.

- *Let's play Sketch-a-Mite together. We can pick shapes to build a tower. Let's name the shapes we have to choose from!*
  (Point to each shape as you name it or the children name it.)

Model selecting a shape (rectangle) by tapping on it and dragging it to the pipe, and then tapping the arrow button to drop it to begin building the tower. Repeat several times with different shapes to show how to stack shapes.

- *Now we can select a shape and move it to the special Sketch-a-Mite machine, where it goes into this pipe. Then we can decide where to drop it to begin building our tower! I'm going to start with this rectangle.*
  (Model touching the rectangle and waiting for it to form. Then model dragging the rectangle to the pipe with your finger. Model tapping the down arrow to have the shape dropped. Do this again with a different shape to model how you can stack shapes to make a tower.)

Talk out loud as you model drawing your own shapes to drag to the pipe and add to your tower.

- *Now let's try something new: Instead of using the shapes that are already here, we can draw our own shape. I'm going to draw a really big rectangle to help make my tower really big. When you draw a shape, make sure that you start and end at the same place.*
  (Model drawing a rectangle and emphasize the point where you start to draw is the same place where you end your shape, connecting the lines. Talk out loud as you draw the rectangle, discussing its two long sides and two short sides.)

Allow children, or several volunteers, to have a turn playing Sketch-a-Mite. When children are comfortable playing this, you can suggest they try the Termite Tower Challenge when playing in pairs on the computer. In this game, they will race against termites to build a tower that reaches the top of the screen.

3. Wrap-Up

Review the concepts covered in the challenge game — triangle, square, circle, rectangle, trapezoid, octagon, pentagon, and semicircle, and their geometric properties.

- *Let's think back to what we learned today. We talked about many different shapes and shape names. Can you think of some of the shapes we saw when playing Sketch-a-Mite?*
  (Encourage children to name shapes they saw in the game, drawing shapes on the dry erase board where necessary.)

- *We also used special words to describe these shapes, like side, curve, or corner (angle). Can you name a shape with straight sides? How many sides does that shape have? What about a shape that is made with a curve?*
  (Encourage children to think of how to describe a shape, such as a triangle, using descriptive language like number of sides or corners [angles].)

Remind children they will have another chance to play the game with a partner during Computer Center time.

Computer Center

Flower Garden

Skills

- Review counting from 0 to 19
- Review one-to-one correspondence and cardinality from 0 to 19
- Review numeral identification from 0 to 19

Sketch-a-Mite

Skills

- Review simple and challenging shapes (triangle, circle, square, rectangle, trapezoid, octagon, and pentagon)
- Review counting sides and corners (angles) of simple and challenging shapes

Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Flower Garden*** and ***Sketch-a-Mite.*** Children review math skills covered in the week.

Remind children to count out loud, identify shapes, and talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Apple Picking*
- *Count with Allie*
- *Bug Catcher*
- *Huff-Puff-a-Tron*
- *Vegetable Patterns*
- *Vegetable Harvest*

Hands-on Center

NUMBO (1–20)

Skills

- Review numeral identification from 1 to 20

Materials

- *NUMBO 1–20 boards*
- *NUMBO 1–20 calling cards*
- *Cover Chips*

Dominoes

Skills

- Review subitizing from 1 to 6
- Review counting from 1 to 6

Materials

- Dominoes

Keep in Mind…

During **Center Time**, small groups or pairs of children play focus games **NUMBO (1–20)** and **Dominoes**. Children review math skills covered in the week.

Additional games also available during this time:

- *Simple Shape Concentration*
- *NUMBO 0–5*
- *OOPS! Number Line 0–10*
- *Fruit Patterns*
- *Pipe Cleaner Shapes*
- *OOPS! Number Line 0–20*

Video Co-viewing

Rocket Ride (Curious George)

George's adventure in space introduces children to the number zero. As George learns about rockets and prepares for his rocket ride, children are introduced to counting in reverse from 10 to 0. The items on his rocket allow children to review simple shapes (circle, triangle, rectangle, square).

Overview

During **Circle Time**, watch ***Rocket Ride*** with children on the **Interactive Whiteboard** (IWB). Look and listen for key pause points (marked with ⏸ and a "beep"), and use them as opportunities to ask questions to get children talking about math.

Skills and other important points to cover

- Introduce reverse counting from 10 to 0
- Introduce the number zero
- Review simple shapes (circle, triangle, rectangle, square)

What you will need

- Interactive Whiteboard (IWB)
- Curious George: *Rocket Ride* video (11:08 minutes)
- Dry erase board, markers, eraser
- Classroom number line

Video Co-Viewing Activity

TIMING GOAL: 25 minutes

1. Warm Up

Invite all children to the IWB area to watch *Rocket Ride* on the IWB.

Review counting from 0 to 10 using your fingers, and review simple shapes (circle, triangle, rectangle, square) by drawing them on the dry erase board.

- *Math Detectives, let's get ready to watch the video by counting from 0 to 10.*
  (Model counting from 0 to 10 using your fingers. When modeling zero, don't hold up any fingers. Encourage children to count out loud with you.)

- *We've learned about many shapes. Who can name these four shapes?*
  (Model drawing a circle, triangle, rectangle, and square on a dry erase board. Encourage children to name the shapes out loud with you.)

Remind children you will pause the video to talk about the math you see.

Start the video.

2. Video Co-Viewing (with Pause Points)

1. 4:51 — The rocket is blasting off.

Review what is happening in the video — George is on a rocket to go into outer space to deliver food to astronauts. Focus on the new vocabulary "ignition" or "blast off" — you say "ignition" or "blast off" when a rocket launches into space (when the fuel in the rocket is set on fire).

- *How exciting! George is going into space to deliver food to the astronauts at the space station. Did you hear the word, "ignition?" This is something you say when a rocket takes off. You can also say, "blast off!" Let's say "ignition" together. Now, let's say "blast off" together.*
  (Guide discussion to talk about George going into space. Practice saying "ignition" and "blast off" together.)

Think out loud to introduce reverse counting from 10 to 0 using a number line and your fingers.

- *I heard some numbers before hearing "ignition," but something sounded different. The numbers were counted backwards. This is called "reverse counting." Let's try reverse counting, too.*
  (Model counting backwards from 10 to 0, pointing to each numeral on the number line. Encourage children to count backwards out loud with you. For further practice, model counting backwards using your fingers. Say, "ignition" or "blast off" each time you get to 0.)

Resume video.

2. 6:53 — Inside the rocket, there are four shapes of containers on the floor — circle, triangle, square, and rectangle.

Encourage children to talk about the shapes on the floor of the rocket (circle, triangle, rectangle, square). Encourage children to talk about other objects and shapes they may see.

- *Detectives, I detect some math on the floor of the rocket. What math do you see? Can you name the shapes? Do you see any other shapes?*
  (Help children identify the shapes — circle, triangle, rectangle, and square. Encourage children to talk about any other shapes there may be on the screen.)

Ask children to predict what will happen next in the video.

Resume video.

3. 8:17 — TThe time "00:00" is shown on the screen.

Discuss what is happening in the video: George missed the opportunity to get food and experiments to the astronauts. Encourage children to talk about the numerals they see on the screen (zero). Think out loud to count the number of zeros, and practice skywriting zeros.

- *Oh no! What's happening here? Is George doing his job? Is he getting food to the astronauts?*
  (Guide discussion to talk about how George was supposed to get the food and experiments to the space station but didn't because he had taken everything out of the shape containers.)

- *What numeral do you see? How many zeros are there? Let's practice skywriting zeros.*
  (Guide discussion to identify the numeral zero. Count and point to the zeros on the timer. Model skywriting '0' while saying 'zero.' Encourage children to skywrite, and say the number out loud with you.)

Ask children to predict what will happen next in the video.

Resume video. End 11:29

3. Wrap-Up.

Review the concepts covered in the video — identifying shapes (circle, triangle, square, rectangle), identifying numerals (zero), and reverse counting (10–0).

- *Let's think hard and think back to what we learned today. Who wants to share about what we learned?*
  (Encourage children to tell you what they remember from the lesson. Guide the discussion to talk about the shapes of the containers in the rocket — circle, triangle, rectangle, and square, the numeral 0, and reverse counting from 10 to 0.)

Remind children that, as Math Detectives, they should always listen carefully and keep their eyes open to find math all around!

Computer Center

Blast Off

Skills

- Review reverse counting from 10 to 0
- Review numeral identification from 0 to 10

Bubble Pop

Skills

- Review counting from 1 to 20
- Review numeral identification from 1 to 20

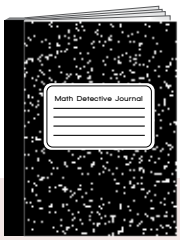
Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Blast Off*** and ***Bubble Pop***. Children review math skills covered in the week.

Remind children to count out loud and to talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

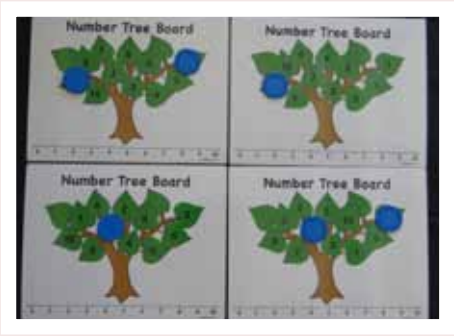
- *Crystals Rule*
- *Ribbit*
- *Apple Picking*
- *Count with Allie*
- *Bug Catcher*
- *Huff-Puff-a-Tron*
- *Vegetable Patterns*
- *Vegetable Harvest*
- *Sketch-a-Mite*
- *Flower Garden*



Math Detective Journal

Math Detective Journal

Model writing numerals from 0 to 10 on a dry erase board as children then practice writing numerals 0 to 10 in their Journals for the first time.



Number Tree

Children practice reverse counting from 10 to 0, as they recognize numerals from 10 to 0 called out by a partner. When a number is called by one child, the other players cover the corresponding numeral leaf on the Number Tree with cover chips until all the numeral leaves are covered.

Overview

During **Small Group Time**, review **counting from 0 to 10** and reverse counting from 10 to 0 with children in preparation for **writing numerals from 0 to 10** in their **Math Detective Journals**. Children then practice **reverse counting** and **numeral identification** with the **Hands-On Activity, "Number Tree."**

Skills and other important points to cover

- Introduce writing numerals from 0 to 10
- Review reverse counting from 10 to 0
- Review numeral identification from 0 to 10

What you will need

- Math Detective Journal (one per child)
- Crayons
- Dry erase board, marker, and eraser
- Dry erase boards, markers, and erasers for children (3)
- Number Tree boards
- Cover chips
- Classroom number line

Math Detective Journal

TIMING GOAL: 20 minutes

1. Warm Up

Invite children to the Small Group area to review counting from 0 to 10 and reverse counting from 10 to 0. Model using your fingers to count, and encourage children to count out loud with you.

- *Math Detectives, let's review counting from zero to 10 AND reverse counting from 10 to zero. Count with me!*
  (Model using your fingers to count from 0 [showing no fingers] to 10. Once you reach 10, model reverse counting from 10 to 0, using your fingers.)

Write a numeral between 0 and 10 on the dry erase board and ask children to identify it. Repeat with several other numerals.

- *Let's review and sharpen our number reading skills. What number is this?*
  (Write a numeral between 0 and 10 on the dry erase board. Encourage children to read the numeral out loud. Repeat with several other numerals.)

2. Introduce Math Detective Journal Activity

Tell children their job as Math Detectives today is to practice writing numerals from 0 to 10 in their Journals.

Model writing numerals on the dry erase board as children write the numerals in their Journals. As they make these initialattempts at writing numerals, children may want to first write the numerals on dry erase boards before copying them into their Journals.

- *Today, we're going to write numerals from 0 to 10 in our Journals. Watch me write the numeral first before you try. Let's start with 0. Now try writing 0 in your Journals. Don't worry if it's not perfect. Just try your best.*
  (Model writing the numerals on the dry erase board before having children practice writing the numerals on the dry erase board or in their Journals.)

3. Introduce Number Tree

Introduce the Number Tree activity by holding up a Number Tree board and cover chips. Tell children that this activity involves reverse counting from 10 to 0.

Review reverse counting from 10 to 0 using the number line on a Number Tree board.

- *Today, we're going to practice reverse counting as we play a new game called "Number Tree." You will play with a partner, and each of you will get a Number Tree board and cover chips. One of you will call out the numerals in reverse order from 10 to 0, and the other will cover the corresponding numeral with a cover chip.*
  (Hold up a Number Tree board and some cover chips to familiarize children with the new materials.)

- *Before we play our new game, let's practice reverse counting out loud. At the end, don't forget to say, "Blast off!"*
  (Model counting backwards from 10 to 0, pointing to each numeral on the number line on the Number Tree board. Remind children to say "Blast off!" after 0.)

Ask for a volunteer and model playing the activity. Help your partner to reverse count from 10 to 0 using the number line on the bottom of the Number Tree board as you model finding and covering each numeral with a cover chip until the board is filled.

- *I need a partner to help me demonstrate how to play the game. Can I have a volunteer? I'm going to ask my partner to start reverse counting from 10 using the number line at the bottom of the Number Tree board. I'll find the leaf with the numeral 10 and use a cover chip to cover it.*
  (Help your partner find the number line at the bottom of the board and begin counting in reverse order, starting with 10. Model finding and covering the numeral 10 leaf with a cover chip.)

- *Now, what numeral is next? Nine. Where is the leaf with the numeral 9? There it is. I'm covering the numeral 9 leaf with a cover chip.*
  (Continue helping your partner to reverse count, and model finding and covering the 9 leaf with a cover chip.)

Repeat the activity for three more numerals, continuing to reverse count from where you left off.

Encourage children to play in pairs or in small groups. Tell children to use the number line on their boards if they forget which number comes next as they reverse count. Encourage children to reverse count out loud.

- *Now you're going to play with a partner. Start with 10 and keep reverse counting until you get to zero. Make sure you say the numbers out loud. If you need help, look at the number line at the bottom of your board.*
  (Help children pair up or get into small groups to play the activity. Encourage children to count out loud using the number line on their boards as they cover their numeral leaves.)

3. Wrap-Up

Review reverse counting from 10 to 0.

- *Excellent work, Math Detectives! Let's reverse count one more time starting at 10. Don't forget to say, "Blast off!' at the end! Ready?*
  (Lead children in reverse counting from 10 to 0.)

Remind children that Number Tree will be available for them to play with a partner during Center Time.

Easy Game Play

Blast Off (Curious George)

George is ready for a space adventure. He has his astronaut helmet and suit, but first he needs our help counting down to launch the space ship. Placing numerals from 0 to 10 on a number line, from largest to smallest, will help children review counting in reverse: 3 … 2 … 1 … 0… Blast off!

Overview

During **Small Group Time**, demonstrate how to play ***Blast Off*** on the **Interactive Whiteboard** (IWB). Use game play as an opportunity to practice **counting in reverse** as you call on individual children to try out the game on the IWB. Remind children of **basic game play rules.**

Skills and other important points to cover

- Review reverse counting from 10 to 0
- Review numeral identification from 0 to 10

What you will need

- Interactive White Board (IWB)
- Curious George: *Blast Off* game
- Classroom Number line

Easy Game Play

TIMING GOAL: 10 minutes

1. Warm Up

Invite children to the IWB area and review counting in reverse from 10 to 0 and the shapes (circle, triangle, square, rectangle) that children identified while watching *Rocket Ride*.

- *Who remembers how we counted backwards from 10 to 0 to help George in Rocket Ride? Who thinks they can use a number line to help us count in reverse?*
  (Have a child volunteer point to the numerals on the number line as you lead children in counting in reverse from 10 to 0.)

- *Does anyone remember the shapes we saw on the rocket with George?*
  (Help children remember some of the shapes they saw while watching the video — circle, triangle, square, rectangle)

2. Introduce Easy Game

Remind children of basic game play rules — only one child can touch the IWB at one time, and they must take turns playing.

- *Today we are going to play another game on the Interactive White Board! But we have to be careful, only one of us can touch the screen at a time, and we have to take turns.*
  (Model how touching the board makes things happen; load the game Blast Off.)

Think out loud as you model how to play Blast Off: Touch the numerals in the correct order to count in reverse to 0, and then "blast off" the rocket.

- *Now let's play Blast Off. We can use our finger to touch the numerals in reverse order so that we can watch the rocket blast off.*
  (Model touching the numerals and then the rocket button.)

Model using the colors of the numerals and the classroom number line as a guide to which numeral comes next in the reverse counting.

- *Did you notice, Math Detectives, that the colors of the numerals and the color circles in the row help us figure out which numeral comes next? We can also use our classroom number line to figure out what numeral comes next!*
  (Point to the yellow 3 star and the yellow circle that indicates which numeral [3] belongs there. Also model pointing to the classroom number to help you figure out which numeral comes next.)

Model recovering from a mistake.

- *Oh no, I clicked the wrong numeral. How can I figure out which numeral come next?*
  (Remind children that the numerals are color matched and that the classroom number line can help them figure out which numeral comes next).

Allow children, or several volunteers, to have a turn playing Blast Off. Ask them to think out loud when they take their turns.

Remind children that during Center Time, they will play Blast Off with a partner on a computer using a mouse.

- *During Computer Center Time, you can play this game again with a partner! But instead of touching the screen, you'll use the mouse to click on the numerals.*

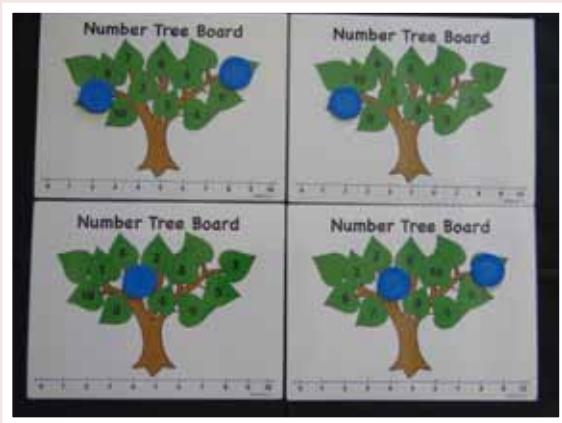
3. Wrap-Up

Review counting in reverse from 10 to 0 using the number line.

- *All right, Math Detectives! Let's think about what we learned today. We learned about counting in reverse from 10 to 0. Let's count from 10 to 0 using our number line!*
  (Encourage the children to count from 10 to 0 as you point to the numerals on the number line.)

Hands-on Center

Number Tree



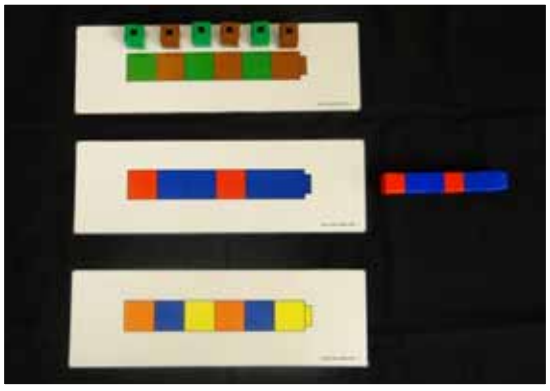
Skills

- Review reverse counting from 10 to 0
- Review numeral identification from 0 to 10

Materials

- *Number Tree boards*
- *Cover chips*

Unifix Pattern Play



Skills

- Review creating, copying, and extending AB, ABB, and ABC patterns

Materials

- Unifix Cubes
- Unifix Cube pattern cards

Keep in Mind...

During **Center Time**, small groups or pairs of children play focus games **Number Tree** and **Unifix Pattern Play**. Children review math skills covered in the week.

Additional games also available during this time:

- *Simple Shape Concentration*
- *NUMBO 0–5*
- *Pipe Cleaner Shapes*
- *OOPS! Number Line 0–10*
- *Fruit Pattern Play*
- *OOPS! Number Line 0–20*
- *NUMBO 1–20*
- *Dominoes*

Computer Center

Blast Off

Skills

- Review reverse counting from 10 to 0
- Review numeral identification from 0 to 10

Bubble Pop

Skills

- Review counting from 1 to 20
- Review numeral identification from 1 to 20

Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Blast Off*** and ***Bubble Pop***. Children review math skills covered in the week.

Remind children to count out loud and to talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Apple Picking*
- *Count with Allie*
- *Bug Catcher*
- *Huff-Puff-a-Tron*
- *Vegetable Patterns*
- *Vegetable Harvest*
- *Sketch-a-Mite*
- *Flower Garden*

Math Circle Routine

Body Unifix Pattern Play

During this activity, children practice creating, copying, and extending AB, ABB, and ABC patterns in a variety of ways. Begin the activity by providing a physical example of a pattern — (clap), (stomp), (stomp) — and help children identify the core pattern elements by name and by using A and B terminology. Then help children copy the pattern using colored sheets of construction paper (red, blue, blue, red, blue, blue), asking children to read the pattern using both color names and A and B terminology. Finally, help children copy the pattern again, using Unifix Cubes (red cube, blue cube, blue cube). Repeat the above activity with other AB, ABB, and ABC patterns.

Number Scene

Using an oversized foam die, one child rolls while the others watch to see what dot arrangement comes up. With only a short period of time to identify the number of visible dots, children offer their ideas and then count together to check on their answers. Using the common dot representations for numbers 1 to 6 encourages children to recognize the visual arrangements that numbers may have.

Overview

During **Circle Time**, demonstrate **creating, copying, and extending AB, ABB, and ABC patterns** by playing **Body Unifix Pattern Play**. Additionally, children will practice recognizing number arrangements that appear when an oversized foam die is tossed **(subitizing)** for numbers 1 to 6.

Skills and other important points to cover

- Review creating, copying, and extending AB, ABB, and ABC patterns
- Review comparing and contrasting AB, ABB, and ABC patterns
- Review subitizing from 1 to 6

What you will need

- Colored pieces of construction paper
- Unifix Cubes
- Unifix Cube pattern cards
- Large foam die

Math Circle Routine

TIMING GOAL: 10 minutes

1. Warm Up

Invite all children to the Circle Time area.

Remind children that patterns can be seen with their eyes, heard with their ears, or acted out physically with their bodies. Review labeling the core elements of an ABC pattern with names — e.g., (clap), (pat your knees), (pat your head) — and with A, B, C terminology.

- *Are there any Math Detectives who can remind me how to make a pattern? Can we make patterns that can be heard with our ears? Can we make patterns that can be seen with our eyes?*
  (Think out loud and help children review that patterns are all around them and can be represented in a variety of ways. Patterns can be seen, they can be heard, and they can be acted out using physical movements.)

- *What about naming the core elements in a pattern? What if I act out this pattern: (clap), (pat your knees), (pat your head),(clap), (pat your knees), (pat your head). Who can tell me the pattern? Who can tell me the pattern using letters like A, B, and C?*
  (Help children remember how to label a pattern using the names of the action and the A, B, and C terminology.)

2. Body Unifix Pattern Play

First, have children copy and extend a physical ABB pattern — (clap), (stomp), (stomp), (clap), (stomp), (stomp). Then ask children to identify the core elements using A and B terminology.

- *OK, Math Detectives, listen and watch closely as I make a pattern: (clap), (stomp), (stomp), (clap), (stomp), (stomp). Who can copy my pattern and extend it?*
  (Demonstrate a [clap], [stomp], [stomp], [clap], [stomp], [stomp] pattern. Encourage the children to copy and extend the pattern.)

- *Great job acting out that pattern, Math Detectives! Now who can use A and B to label the core elements of that pattern as I repeat it?*
  (Think out loud while you help children demonstrate your physical pattern, encouraging them to say "A" when you clap and "B" when you stomp.)

Have children represent the same pattern (above) using colored construction paper. Use red construction paper for clap and blue for stomp, and have the children stand up holding the construction paper in front of them.

- *Now let's try something different! Let's use colored pieces of construction paper to represent our pattern. See how many different ways we can make patterns? I need six volunteers to stand up and hold construction paper to represent our pattern.*
  (Place two different colors of construction paper on the floor. Call on six volunteers to hold up the construction paper and stand with it held in front of them, creating the pattern arrangement A, B, B.)

Encourage children to read the pattern using the color of their construction paper and then A and B terminology.

- *Can you read the pattern using the colors? What about reading your pattern using letters like we did before?*
  (Encourage children to read the colors of their pattern aloud [red, blue, blue, red, blue, blue] and to label their pattern using A, B terminology as well.)

Encourage children to copy the pattern of the construction paper with Unifix Cubes. Use a red Unifix Cube for the red construction paper and a blue Unifix Cube for the blue construction paper.

- *Do my Math Detectives think they can use these Unifix Cubes I have here to copy our construction paper pattern? I am going to put down some red Unifix Cubes and some blue Unifix Cubes. Do I have a volunteer who thinks they'd like to try?*
  (Place red Unifix Cubes and blue Unifix Cubes on the floor and call on a volunteer to try to place the Unifix Cubes in the correct ABB pattern. Encourage other children to help the volunteer figure out the pattern.)

Repeat the above activity with other AB, ABB, and ABC patterns. Remind children they can make patterns with the Unifix Cubes during Center Time. Hold up a Unifix pattern card as an example.

- *Great job with those patterns, Math Detectives! The Unifix Cubes and these Unifix pattern cards will be in the Center area for you to practice more patterns this week!*
  (Hold up the Unifix pattern cards.)

3. Number Scene

Review the Number Scene activity by displaying each side of the die to the children and then describing the dot arrangement for each number.

- *Math Detectives, today we're going to play Number Scene again. Remember, for this game we use a large-size die. Let's take a close look at each side of our die.*
  (Hold up the die for all of the children to see, and describe each side of the die:
  1 — a single dot in the middle of the die face
  2 — two dots arranged on a diagonal at opposite corners of the die face
  3 — three dots in a row arranged on a diagonal, with two at opposite corners of the die face
  4 — four dots, one at each corner of the die face
  5 — five dots, one at each corner of the die face with a single dot in the middle
  6 — two rows of three dots along opposite sides of the die face)

Remind children that to play the game, one child will roll the die. Once the die is rolled, there will be only five seconds to look at the dots before you hide it and they are asked to tell you how many dots they saw.

- *Now we're going to practice our math detecting skills! I am going to call up a volunteer to roll this die and then give you five seconds to look at the side it landed on before taking the die away and hiding it behind my back. Then I will call on a volunteer who thinks they remember what number the arrangement of dots was in. But remember, you have to be quick! You'll only see the dots for a few seconds!*
  (While providing these verbal game instructions, model the movements of the game. For example, roll the die and then show the face of the side it landed on to the children. Then hide it behind your back and pretend to think of what number it was in an exaggerated manner.)

- *Who wants to be our first volunteer to roll the die? Remember that once it lands on a side, I will pick it up and show it to you very quickly before putting it behind my back.*
  (Have the volunteer roll the die. Pick it up and show the children the dot arrangement that was rolled for five seconds, then hide the die behind you.)

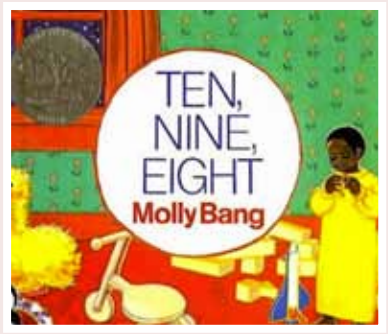
- *OK, Math Detective, how many dots did you see? Does anyone here agree with that answer? Why?*
  (Call on one volunteer to share his/her answer with the class. Ask for feedback or confirmation of an answer from other children.)

Reveal the die and count the dots to confirm the answer. Repeat the activity several times.

- *Now let's count the number of dots to see if _____ was right. There are ___ dots. She was right! Let's play this game a few more times to practice.*
  (Count the dots on the face of the die aloud with children. Confirm correct or incorrect answers provided. Repeat activity several times.)

Guided Book Reading

Ten, Nine, Eight



As a child winds down with her father before bedtime, she is taken on a familiar journey around her room. Join her with your Math Detectives as she counts down from 10 to 1 using comforting objects and actions.

Overview

During **Circle Time**, read **Ten, Nine, Eight** with children. As you read, review and talk about **reverse counting from 10 to 1**. Key pause points – marked with a ⏸ in the teacher's guide and book pages – are included as opportunities to ask questions to get children talking about reverse counting.

Skills and other important points to cover

- Review reverse counting from 10 to 1
- Review counting from 1 to 10
- Review one-to-one correspondence and cardinality from 1 to 10

What you will need

- *Ten, Nine, Eight* (book)
- Classroom number line

Guided Book Reading

TIMING GOAL: 15 minutes

1. Warm Up

Invite children to the Circle Time area to read the book, Ten, Nine, Eight.

Review reverse counting from 10 to 0 using the classroom number line. Encourage children to start with 10 and count in reverse to 0 as you point to each numeral on the number line.

- *We use our number line a lot to help us count, but this time I want to count in reverse from 10 to 0. Are there any Math Detectives here who can count in reverse from 10 to 0 with me?*
  (Point to each numeral on the number line as you encourage children to count in reverse from 10 to 0 with you.)

Hold up the Ten, Nine, Eight book and ask children to predict what the story will be about, based on the title.

- *Today, we're going to read Ten, Nine, Eight. After listening to the title of this book, what do you think it will be about?*
  (Hold up the book for them to see. Allow children to share their thoughts. Guide the discussion to reverse counting.)

2. Guided Book Reading (with Pause Points)

Pause at pages 1–2:

Point to the 10 small toes as you have children count them out loud with you. Think out loud as you figure out you also have 10 fingers.

- *Let's count the ten toes out loud together.*
  (Point to each toe while you count from 1 to 10 with the children.)

- *Hmm. Who remembers something else we have 10 of? They've been helping us count these past few weeks!*
  (Allow children the opportunity to respond. If they are having trouble, prompt them by holding up your two hands and wiggling your fingers.)

Pause at pages 7–8:

Point to each of the seven empty shoes as you encourage children to count out loud with you.

- *OK, Math Detectives, now let's check to see if there are seven shoes lined up. How can we do that?*
  (Point to each shoe while counting out loud with the children.)

Ask children to predict what numeral will be on the next page if you're counting in reverse. (Answer: 6.)

- *Before I turn the page, does anyone know what numeral will be on the next page if we are counting in reverse?*
  (Call on volunteers to predict what numeral will be next. Point to the classroom number line if no child offers an answer.)

Pause at pages 11–12:

Point to the five buttons on the child's nightgown and ask for a volunteer to come up and count them altogether.

- *Who wants to come up and count the buttons on her nightgown?*
  (Have a volunteer come up and count the buttons, encouraging her to point to each button as she counts out loud. Reinforce that the last number counted is how many buttons there are altogether.)

Ask children to predict what numeral will be on the next page if you're counting in reverse. (Answer: 4.)

- *Like we did before, does anyone know what numeral will be on the next page if we're counting in reverse order?*
  (Call on volunteers to predict what numeral will be next. Point to the classroom number line if no child offers an answer.)

3. Wrap-Up

Encourage children to start with 10 and count in reverse to 1 as you point to each numeral on the number line.

- *The girl in our book counted in reverse from 10 to one while she looked at different things around her room before bedtime. Are there any Math Detectives who would like to come up and count in reverse for us, using the number line if you need help?*
  (Call up volunteers to practice counting in reverse from 10 to 1 independently.)

Computer Center

Blast Off

Skills

- Review reverse counting from 10 to 0
- Review numeral identification from 0 to 10

Bubble Pop

Skills

- Review counting from 1 to 20
- Review numeral identification from 1 to 20

Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Blast Off*** and ***Bubble Pop***. Children review math skills covered in the week.

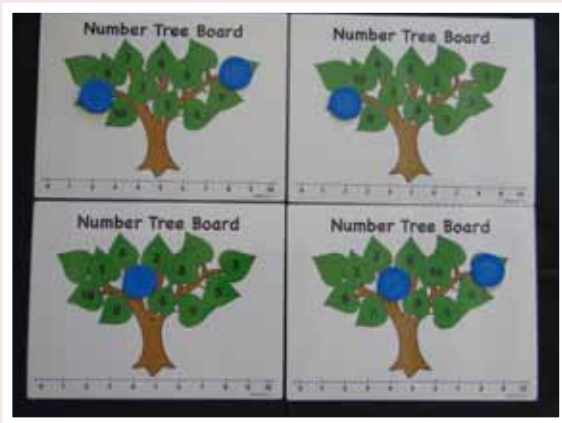
Remind children to count out loud and to talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Apple Picking*
- *Count with Allie*
- *Bug Catcher*
- *Huff-Puff-a-Tron*
- *Vegetable Patterns*
- *Vegetable Harvest*
- *Sketch-a-Mite*
- *Flower Garden*

Hands-on Center

Number Tree



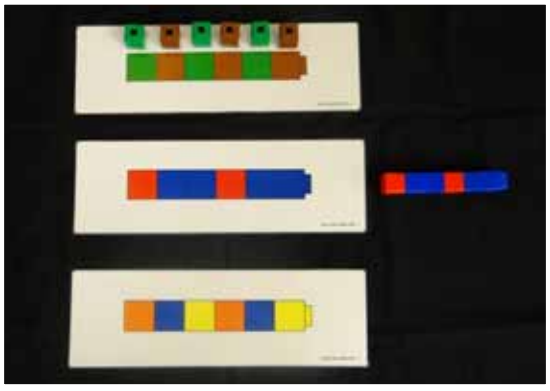
Skills

- Review reverse counting from 10 to 0
- Review numeral identification from 0 to 10

Materials

- *Number Tree boards*
- *Cover chips*

Unifix Pattern Play



Skills

- Review creating, copying, and extending AB, ABB, and ABC patterns

Materials

- Unifix Cubes
- Unifix Cube pattern cards

Keep in Mind...

During **Center Time**, small groups or pairs of children play focus games **Number Tree** and **Unifix Pattern Play**. Children review math skills covered in the week.

Additional games also available during this time:

- *Simple Shape Concentration*
- *NUMBO 0–5*
- *Pipe Cleaner Shapes*
- *OOPS! Number Line 0–10*
- *Fruit Pattern Play*
- *OOPS! Number Line 0–20*
- *NUMBO 1–20*
- *Dominoes*

Challenge Game Play

Bubble Pop (Curious George)

Curious George enjoys bath time and likes to pop bubbles. You can help by touching bubbles to pop them. Tapping the bubble will make it pop and a numeral will appear. The more you pop the higher the numerals go. This activity can help children review numeral identification from 1 to 20.

Overview

During **Circle Time**, play ***Bubble Pop*** with children on the **Interactive Whiteboard** (IWB). As you demonstrate how to play the game, use this opportunity to talk about **counting** and **numeral identification from 1 to 20.**

Skills and other important points to cover

- Review counting from 1 to 20
- Review numeral identification from 1 to 20

What you will need

- Interactive Whiteboard (IWB)
- Curious George: *Bubble Pop*
- Classroom Number line

Challenge Game Play

TIMING GOAL: 25 minutes

1. Warm Up

Invite children to the IWB area to play Bubble Pop, a new game on the IWB.

Review counting from 1 to 20 using the number line.

- *Let's practice counting from 1 to 20 together. Let's use this number line to help us keep track of where we are while we count. Can you count out loud with me?*
  (Encourage children to count out loud as you point to each numeral on the number line.)

2. Introduce Challenge Game

Note: The first screen asks if you have a microphone; select no.

Model playing Bubble Pop by demonstrating how to tap a bubble to pop it, revealing a numeral. Think out loud as you count each bubble you pop.

- *Let's play Bubble Pop together. In this game we have to count each of the bubbles that float out of George's bathtub. When the bubble rises up I will tap it, and then we'll see the numeral. Let's count together to keep track of how many bubbles we popped.*
  (Model tapping the first bubble and then saying the numeral out loud. Encourage the children to say the numerals out loud with you.)

Remind children that the numeral that appears in the bubble is how many bubbles you've popped altogether.

- *Did you see that numeral? That's how many bubbles we've popped altogether so far! But it looks like there are a lot more bubbles, so let's keep popping.*
  (Point to the numeral that appears when a bubble is popped. Reinforce that the numeral represents how many bubbles you popped altogether).

Remind children that George has a lot of bubbles. First you'll count to 10, then 20, then higher.

- *First we can count to 10. Then we can keep counting, all the way to 20. Then you and your partner can try counting higher than 20 if you'd like to try during Center time.*
  (Model touching each bubble, continuing to count each one.)

Allow children, or several volunteers, to have a turn playing Bubble Pop.

3. Wrap-Up

Review the concepts covered in the challenge game — counting from 1 to 20.

- *Let's think back to what we learned today. We talked about counting from 1 to 20 and about using a number line to help us when we practice counting to 20.*
  (Remind children of the number line and how reading the numerals when pointing to them can help children keep track of their counting.)

- *Let's finish today by counting from 1 to 20 using our number line.*
  (Encourage children to count from 1 to 20 with you while you point to the numerals on a number line).

Remind children they will have another chance to play the game with a partner during Computer Center time.

Computer Center

Blast Off

Skills

- Review reverse counting from 10 to 0
- Review numeral identification from 0 to 10

Bubble Pop

Skills

- Review counting from 1 to 20
- Review numeral identification from 1 to 20

Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Blast Off*** and ***Bubble Pop***. Children review math skills covered in the week.

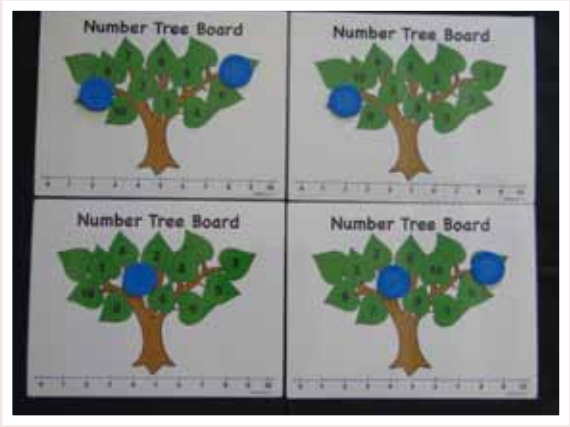
Remind children to count out loud and to talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Apple Picking*
- *Count with Allie*
- *Bug Catcher*
- *Huff-Puff-a-Tron*
- *Vegetable Patterns*
- *Vegetable Harvest*
- *Sketch-a-Mite*
- *Flower Garden*

Hands-on Center

Number Tree



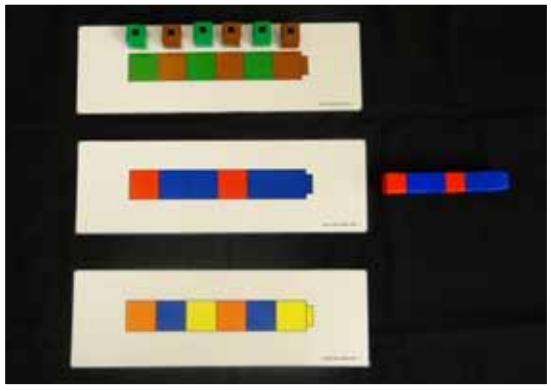
Skills

- Review reverse counting from 10 to 0
- Review numeral identification from 0 to 10

Materials

- *Number Tree boards*
- *Cover chips*

Unifix Pattern Play



Skills

- Review creating, copying, and extending AB, ABB, and ABC patterns

Materials

- Unifix Cubes
- Unifix Cube pattern cards

Keep in Mind...

During **Center Time**, small groups or pairs of children play focus games **Number Tree** and **Unifix Pattern Play**. Children review math skills covered in the week.

Additional games also available during this time:

- *Simple Shape Concentration*
- *NUMBO 0–5*
- *Pipe Cleaner Shapes*
- *OOPS! Number Line 0–10*
- *Fruit Pattern Play*
- *OOPS! Number Line 0–20*
- *NUMBO 1–20*
- *Dominoes*

Video Co-viewing

Zero to Donuts (Curious George)

George's trip to the bakery to buy donuts helps children review the numeral — and the power of — zero. By combining the numeral one with zeros to make a new numeral, George introduces children to large numerals like 100. George's daydreaming about donuts also allows children to review the simple shape of a circle with the shape of a delicious donut.

Overview

During **Circle Time**, watch ***Zero to Donuts*** with children on the **Interactive Whiteboard** (IWB). Look and listen for key pause points (marked with ⏸ and a "beep"), and use them as opportunities to ask questions to get children talking about math.

Skills and other important points to cover

- Introduce large numerals
- Review numeral zero
- Review comparing two sets of numbers (sets of 12 and large numbers)

What you will need

- Interactive Whiteboard (IWB)
- Curious George: *Zero to Donuts* video (11:08 minutes)
- Unifix cubes
- Classroom number line
- Dry erase board, markers, eraser

Video Co-Viewing Activity

TIMING GOAL: 25 minutes

1. Warm Up

Invite all children to the IWB area to watch Zero to Donuts on the IWB.

Review identifying the numeral zero (0) and comparing two sets of objects using Unifix cubes (sets of 2 and 10).

- *Math Detectives, can you tell me the number that looks like a circle? We learned about this number when we watched George blast-off in the Rocket Ride video last week.*
  (Guide discussion to remind children about the numeral zero, and point to zero on a number line.)

- *Who remembers way back to when we played the Curious George game Bug Catcher? Remember we had to figure out which jar had more bugs? Let's do that again, but with these Unifix cubes. Which group has more? How can we figure it out?*
  (Hold two sets of cubes in your hands, one group of two in one hand and one group of ten in the other. Model using strategies like making an estimate of which group has more by looking, and then counting the cubes to confirm.)

Remind children you will pause the video to talk about the math you see.

Start the video.

2. Video Co-Viewing (with Pause Points)

1. 0:33 — The Man with the Yellow Hat and George just woke up, and George is thinking about donuts.

Think out loud to help children figure out what numeral and shape the donut looks like — zero and circle. Draw all three on a dry erase board to help children visualize.

- *It looks like George is dreaming of donuts. That donut reminds me of a numeral and a shape we learned about. What numeral does the donut look like? What shape does the donut look like?*
  (Guide discussion to talk about what numeral and shape the donut looks like — zero and circle. Draw a donut, zero, and circle on the dry erase board to compare them side-by-side.)

Use the number line to count from 0 to 9 to help children figure out what number comes next. Point out the numeral 10, which also has a 0, and write it on the dry erase board. Help children talk about the two numerals that make up 10.

- *Let's count from zero to nine using our number line. What number comes after nine? Ten comes after nine. I'm going to write it on my board. I see two numerals in the ten — what are they?*
  (Count from zero to nine and point to each numeral on the number line. Encourage children to count out loud with you. Write 10 on the dry erase board. Cover the 0, then cover the 1, to help the children figure out which numerals make up the number 10.)

Encourage children to look at a number line to compare 0 and 10 to figure out which number is less.

❝ *Here's zero and here's ten. Which numeral is less? How do you know?*
(Point to 0 and 10 on the number line. Help children think out loud to figure out which numeral is less; model strategies such as holding up no fingers [zero] and then ten fingers.)

Ask children to predict what will happen next in the video.

Resume video.

2.1:59 — The Man with the Yellow Hat writes a 0 on the paper.

Draw children's attention to the numeral 0 written on the paper. Ask children what shape (circle) and what object (donut) the numeral 0 looks like.

Model sky-drawing 0's.

❝ *What numeral do we see here? What shape does this numeral look like? What else does it look like — something George was just dreaming about!*
(Guide discussion to talk about the zero written on the paper and how it looks like a circle and a donut. Model and encourage children to sky-draw 0's.)

Ask children to predict what will happen next in the video.

Resume video.

3. 3:33 — George and Charkie the dog are in the donut shop. George writes a 0 next to the 1 to make the numeral 10.

Model writing a 0 behind a 1 to create the new numeral 10 on the dry erase board.

Count from 0 to 10 using a number line. Encourage children to count out loud with you.

❝ *Uh-oh, what did George do? He wrote 0 behind the 1 and created a new numeral! What new numeral did he make?*
(Guide discussion to review combing a 0 with the numeral 1 to create a new, larger numeral, 10. Count from 0 to 10 and point to the numerals on the number line. Encourage children to count out loud with you.)

Resume video.

4. 3:57 — A dozen donuts in a box are on a conveyor belt.

Point to each donut as you encourage children to count the number of donuts there are in a dozen (12).

❝ *Look, there is a box of donuts. This one box has a dozen donuts. How many donuts are there in a dozen? Let's count to figure out how many donuts there are altogether in a dozen.*
(Model counting and point to each donut. Encourage children to count out loud with you.)

Encourage children to talk about the large numeral (100) George wrote by writing two zeros behind the 1. Model writing 100 and then 12 on the dry erase board. Compare 12 and 100 to figure out which number is less.

- *George wrote another 0 and made a new numeral — 100. Do you think this a small number or a big number?*
  (Model writing 100 on the dry-erase board by first writing 1, then writing the zeros one-by-one. Guide the discussion to talk about how 100 is a large number.)

- *Let's think, if you had 12 donuts and I had 100 donuts, who would have fewer? Is 12 more than or less than 100?*
  (Model writing 12 next to the 100 written on the dry erase board. Help children talk about how 12 is less than 100.)

Ask children to predict what will happen next in the video.

Resume video. End 11:08

3. Wrap-Up.

Review the concepts covered in the video — the numeral 0, identifying large numerals (10, 100), and comparing two sets of objects (sets of 12 and 100).

- *Let's think hard and think back to what we learned today. Who wants to share about what we learned?*
  (Encourage children to tell you what they remember from the lesson. Guide the discussion to talk about the numeral zero and its shape; large numbers; and comparing sets of numbers — 12 and 100.)

Remind children that, as Math Detectives, they should always listen carefully and keep their eyes open to find math all around!

Computer Center

Meatball Launcher

Skills

- Review counting from 1 to 9
- Review numeral identification from 1 to 9
- Review one-to-one correspondence and cardinality from 1 to 9

Hide and Seek

Skills

- Review numeral identification from 0 to 10
- Review number words from 0 to 10
- Review counting and cardinality from 0 to 10

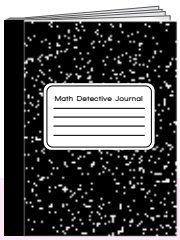
Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Meatball Launcher*** and ***Hide and Seek***. Children review math skills covered in the week.

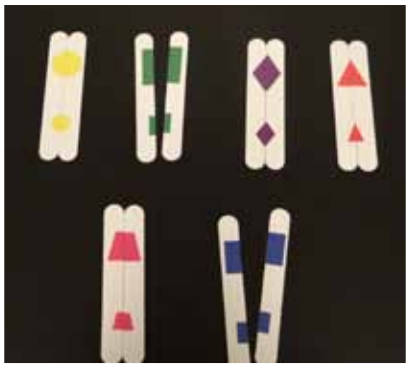
Remind children to count out loud and talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Count with Allie*
- *Apple Picking*
- *Bug Catcher*
- *Huff-Puff-a-Tron*
- *Vegetable Patterns*
- *Vegetable Harvest*
- *Flower Garden*
- *Sketch-a-Mite*
- *Blast Off*
- *Bubble Pop*



Math Detective Journal



Math Detective Journal

During Math Detective Journal time, help children review identifying and naming shapes (circle, triangle, rectangle, square, trapezoid, rhombus) and their geometric properties in preparation for making "wacky" donuts. Assist children in drawing the wacky donuts — a circle-shaped outside, but a different-shaped hole as the center — in their Journals. Children are encouraged to vary the size as well as the orientation of the shape of the donut hole to create each new wacky donut.

Shape Match

Children practice constructing and deconstructing shapes by matching halves of shapes (circles, triangles, rectangles, squares, trapezoids, and rhombuses) to create a whole shape. Mounted on large craft sticks ,the shapes must be completed by finding missing halves and placing them side by side for each Shape Match.

Overview

During **Small Group Time**, review shapes and their geometric properties with children to help them create "wacky" donuts drawn with centers of different **shapes** in their **Math Detective Journals**. Children then play the **Hands-On Activity, "Shape Match,"** that asks them to **construct shapes** by joining the two halves of a collection of shapes on craft sticks.

Skills and other important points to cover

- Review simple and challenging shapes (circle, triangle, rectangle, square, trapezoid, rhombus)
- Review comparing size and orientation of simple and challenging shapes
- Review constructing and deconstructing shapes

What you will need

- Math Detective Journals (one per child)
- Crayons
- Dry erase board, marker, and eraser
- Shape cards (circle, triangle, square, rectangle, trapezoid, rhombus)
- Shape Match craft sticks

Math Detective Journal

TIMING GOAL: 20 minutes

1. Warm Up

Invite children to the Small Group area to review shapes (circle, triangle, square, rectangle, trapezoid, rhombus) and their geometric properties (lines, sides, corners [angles] and curves) using the shape cards.

❞ *OK, Math Detectives. Today we are going to revisit a lot of our shapes and see what we remember about them. Who can name a shape we've talked about?*
(Show children the shape cards and ask for volunteers to name all the shapes. Encourage other children to help, if and when needed.)

Using the shape cards, encourage children to describe the similarities between a rhombus and a trapezoid (4 sides, 4 corners [angles], 4 straight lines, no curves).

❞ *Who can tell me what you see when you look at the rhombus? What about when you look at the trapezoid? Are there things that are the same about these two shapes?*
(Hold up the rhombus and trapezoid cards. Guide the discussion to count the number of sides for each shape. Review corners [angles], reminding children that the sides must be connected to make a corner [angle] and finish the shape. Conclude by reviewing that both shapes have 4 sides, 4 angles, all straight lines [no curves].)

2. Introduce Math Detective Journal Activity

Encourage children, as Math Detectives, to use what they know about the sides and corners (angles) of shapes to draw donuts with wacky holes made from different shapes.

Using the dry erase board, draw a large circle to represent the outside of the donut. Encourage children to tell you what the inside shape of the donut George daydreamed about looked like (a circle), and finish the donut by drawing a second smaller circle inside.

❞ *Remember when we watched Zero to Donuts and George daydreamed about lots and lots of donuts? Today, we are going to draw donuts similar to those that George dreamed of, but ours are going to have different shapes for the donut hole. We'll be making wacky donuts. First, let's make a donut like George was daydreaming about. Here is the outside of a donut, it's a circle. Who remembers what the inside of the donut looked like?*
(Model thinking out loud as you draw a large circle on the dry erase board for the outside of the donut. If necessary, remind children that the inside of the donut George daydreamed about was also a circle. Finish the donut by drawing a smaller circle inside the larger circle.)

Then draw more large circles on the dry erase board to represent the outside of the donuts.

Ask children for suggestions for shapes to make these wacky donuts. Encourage children to use shape names as well as their geometric properties — number of sides, corners (angles), curves. Model drawing several of the donut-hole suggestions, talking out loud about the geometric properties of the shapes as you draw them.

❞ *Now, we have more donuts that need holes. Who has a shape idea for the donut's hole? Who can tell me how to make the shape? Remember, you'll have to tell me where to start and something about the sides and corners (angles) so I'll be able to draw the wacky hole.*
(Talk out loud as you repeat the instructions from the children and draw the shapes suggested.)

Make errors based on what children tell you, forcing them to correct their descriptions. For example, if children say "sides" but not that they are connected, draw disconnected lines a couple of times to model the importance of connected lines to make the corners (angles) of shapes.

❞ *Oh, that doesn't look right. You said "four sides," but you didn't tell me to connect them so I'd have four corners. Let's try again; be really, really specific when you describe your shape.*
(Make errors, following literally what the children tell you, and help them use descriptive language so you can draw the correct shape.)

Select one of the wacky donuts you already drew and draw the same wacky donut again, except change the size and orientation of the wacky donut hole — for example, if the shape was a triangle, draw a large triangle with the point facing down as the donut hole. Discuss how regardless of size or orientation, it is still the same shape.

❞ *OK, Math Detectives. What if I draw this wacky donut? Is the donut hole the same shape as our first wacky donut?*
(Talk out loud as you draw the same-shaped hole as one of the original wacky donuts, varying the size and orientation. Encourage children to discuss the geometric properties of the shape, coming to the conclusion that, big or small, and regardless of orientation, the shape is the same.)

Encourage children to copy the wacky donuts you made as examples into their Journals.

Then encourage children to draw their own wacky donuts.

❞ *Now you draw these wacky donuts in your Journals! Who remembers the first shape we have to make for the outside of the donut? And what shape is our donut hole?*
(Talk out loud as you guide children in copying the wacky donuts into their Journals. Discuss the sides, corners [angles] and curves of the shapes as children draw them.)

3. Introduce Shape Match

Introduce Shape Match to children by showing them Shape Match sticks as a whole — hold matching craft sticks lined up next to one another — and asking them to identify the shape.

- *OK, Math Detectives, next we're going to use craft sticks to make our shapes. Look at these two sticks. There is a large picture of the shape drawn on the top and a small picture of the shape drawn on the bottom. Who can tell me what shapes they see?*
  (Hold up the two craft sticks that make up the circle. Encourage children to identify the large circle on top of the sticks and the small circle on the bottom of the sticks, emphasizing that, regardless of size, they are both circles.)

Next, split apart the circle Shape Match sticks so you have two halves — hold one stick in each hand so that the circle halves are visible to the children. Describe how the two parts together make the circles.

- *If I take my two sticks apart, then half of the circle is on each stick. See? And when I put them back together, we see the whole circle again.*
  (Hold up the two craft sticks, pointing to the half circles on each stick. Then put the sticks together again to show the complete circles.)

Ask children to identify the remaining shapes (triangle, rectangle, square, trapezoid, and rhombus) on the Shape Match sticks.

- *Let's see what shapes are on the rest of our sticks!*
  (Hold up each of the Shape Match sticks in pairs, and encourage children to identify the shapes they see — triangle, rectangle, square, trapezoid, and rhombus.)

Mix up all 12 craft sticks and place them in random order face-up on the table. Explain the activity to the children by telling them to pick up a stick and then find the correct missing half.

- *Now we're ready to play! Let's mix up all of our large sticks and leave them with the shape pictures facing up on the table. Then we'll all take turns picking up a stick and finding the correct missing half.*
  (Mix up the 12 large craft sticks and place them in random order face-up on the table. Begin play by finding a match yourself.)

Remind children to pay close attention to the geometric properties of the shape halves they see as they try to find a match. Once they find the correct match, tell them to place the sticks side by side on the table to complete each shape as they say the shape name.

- *Pay close attention to the properties of the shape half on your stick. For example if your shape half has a curve, you should be looking for another shape half with a curve. Once you're sure you have a match, say the name of the shape you matched out loud and put the sticks off to the side.*
  (Point to the curve on one of the circle Shape Match sticks and then the curve on the other half of the Shape Match stick. Model putting them together, saying "circle" and moving the sticks off to the side.)

Remind children they can work with a partner to create shape matches during Center Time.

Easy Game Play

Meatball Launcher (Curious George)

George has a job working in Chef Pisghetti's restaurant. We can help George get the right number of meatballs on each plate by using his meatball launcher. As each meatball is launched children practice counting. When we're finished with the order, children will know how many meatballs have been launched altogether.

Overview

During **Small Group Time**, demonstrate how to play ***Meatball Launcher*** on the **Interactive Whiteboard** (IWB). Use game play as an opportunity to practice **counting** and **one-to-one correspondence** as you call on individual children to try out the game on the IWB. Remind children of **basic game play rules.**

Skills and other important points to cover

- Review counting from 1 to 9
- Review numeral identification from 1 to 9
- Review one-to-one correspondence and cardinality from 1 to 9

What you will need

- Interactive White Board (IWB)
- Curious George: *Meatball Launcher* game
- Classroom number Line

Easy Game Play

TIMING GOAL: 10 minutes

1. Warm Up

Invite children to the IWB area and review counting from 1 to 9 using the number line.

- *Math Detectives, let's get ready to play our game by counting from 1 to 9 using our number line!*
  (Point to each numeral on the number line while you encourage children to count along with you.)

Review the concept of cardinality or items altogether or in a group by referencing the 12 donuts in a box from the *Zero to Donuts* video.

- *Now, who remembers the donuts in the box from the Zero to Donuts video? Do you remember the donuts together had a special name? We said there were a dozen donuts. How many donuts altogether was that?*
  (Help children remember this part of the video, and remind them that one way of thinking about numbers is in groups such as 12 donuts in a box.)

- *Where else have you seen groups of objects?*
  (Allow children the opportunity to share their ideas. You can remind children that eggs also come in sets of 12, and crayons come in boxes with different numbers. Help children look around the room for sets [two shoes, five chairs at a table].)

2. Introduce Easy Game

Remind children of basic game play rules — only one child can touch the IWB at a time, and they must take turns playing.

- *Today we are going to play another game on the Interactive Whiteboard! But we have to be careful, only one of us can touch the screen at a time, and we have to take turns.*
  (Model how touching the board makes things happen; load the game Meatball Launcher.)

Think out loud as you model how to play Meatball Launcher — point to the number of meatballs needed on the order slip, saying the number out loud.

Then model tapping the meatball picture to launch meatballs at the plate, and tapping the bell to finish the order.

- *Now, let's play Meatball Launcher. We can help George finish the plates by shooting out the right number of meatballs with the meatball launcher. First, I have to check how many meatballs we need, then I touch the meatball picture to launch meatballs. When I think I have the right number, I touch the bell.*
  (Point to the numeral on the order slip as you say the number out loud. Model touching the meatball launcher button and then the bell when the number of meatballs launched matches the

number on the screen.)

Walk children through a couple of examples. Model recovering from a mistake.

- *Oops! The Man in the Yellow Hat said that's too many meatballs. How can we check how many meatballs we need, and make sure we have the correct number this time?*
  (Guide the discussion to looking at the order slip where the numeral is printed, and then counting out loud as you launch meatballs, periodically counting the meatballs on the plate to know how many you already have.)

Call volunteers up to play the game and ask children to think out loud during their turns.

- *How can we check that we helped George launch the right number of meatballs?*
  (Encourage children to count out loud as they launch each meatball.)

Remind children that during Center Time, they will play Meatball Launcher with a partner on a computer using a mouse.

During Computer Center Time, you can play this game again with a partner! But instead of touching the screen, you'll use the mouse to click on the numbers.

3. Wrap-Up

Encourage children to review what they have learned, including counting, one-to-one correspondence, and cardinality from 0 to 9.

- *All right, Math Detectives! Let's think about what we did today. Who can tell me something about the math we did when we were playing the game?*
  (Guide the discussion to talk about ways of counting, counting each meatball to find out how many there were, and also finding groups of things that can be counted.)

- *Remember, when you're counting you can you point at each thing you are counting as a way to help you keep track of your numbers. Let's practice!*
  (Select a volunteer to count the number of children in the group, encouraging her to point to each child as she counts.)

Hands-on Center

Fruit to Number Concentration

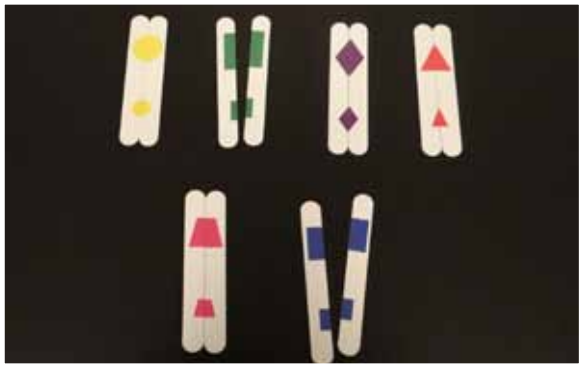
Skills

- Review subitizing from 1 to 10
- Review one-to-one correspondence, numeral identification, and cardinality from 1 to 10

Materials

- *Fruit to number concentration cards*

Shape Match



Skills

- Review constructing and deconstructing shapes
- Review simple and challenging shapes (circle, triangle, rectangle, square, trapezoid, and rhombus)

Materials

- Shape Match sticks

Keep in Mind...

During **Center Time**, small groups or pairs of children play focus games **Fruit to Number Concentration** and **Shape Match**. Children review math skills covered in the week.

Additional games also available during this time:

- *Simple Shape Concentration*
- *NUMBO 0–5*
- *Pipe Cleaner Shapes*
- *OOPS! Number Line 0–10*
- *Fruit Patterns*
- *OOPS! Number Line 0–20*
- *NUMBO 1–20*
- *Dominoes*
- *Number Tree*
- *Unifix Pattern Play*

Computer Center

Meatball Launcher

Skills

- Review counting from 1 to 9
- Review numeral identification from 1 to 9
- Review one-to-one correspondence and cardinality from 1 to 9

Hide and Seek

Skills

- Review numeral identification from 0 to 10
- Review number words from 0 to 10
- Review counting and cardinality from 0 to 10

Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Meatball Launcher*** and ***Hide and Seek***. Children review math skills covered in the week.

Remind children to count out loud and talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

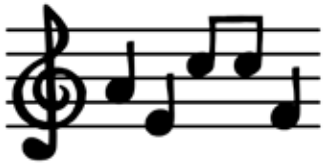
Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Count with Allie*
- *Apple Picking*
- *Bug Catcher*
- *Huff-Puff-a-Tron*
- *Vegetable Patterns*
- *Vegetable Harvest*
- *Flower Garden*
- *Sketch-a-Mite*
- *Blast Off*
- *Bubble Pop*

Math Circle Routine

Fruit to Number Concentration

Use this concentration game to help children match sets of objects (fruit) to the numerals they represent by subitizing and counting. To introduce the game, read the numerals on the cards from 1 to10 and help children identify the number of fruit pieces on each card. Then place the fruit cards face down in one row and the number cards in another. Model flipping over two cards and thinking out loud about whether or not the cards are a match, and how you know. Model finding a pair that matches and a pair that does not match — flipping the cards back over and allowing the next person a turn. Extend the activity by having children count out plastic fruit that corresponds with the numerals on the concentration cards.



Shapes Song

Children learn to sing a shapes song emphasizing geometric properties of simple shapes: circle, square, triangle, and rectangle.

Overview

During **Circle Time**, demonstrate how to play **Fruit to Number Concentration** to review **one-to-one correspondence, numeral identification,** and **cardinality.** Then, review simple shapes and their **geometric properties** by introducing the song, **"Shapes Song."**

Skills and other important points to cover

- Review subitizing from 1 to 10
- Review one-to-one correspondence, numeral identification, and cardinality from 1 to 10
- Review simple shapes and geometric properties (circle, triangle, rectangle, square, side, and round)

What you will need

- Fruit to Number Concentration cards
- Plastic fruit
- Large foam die

Math Circle Routine

TIMING GOAL: 10 minutes

1. Warm Up

Invite all children to the Circle Time area.

Use the foam die to review subitizing and the configuration of the dots on each face of the die. Display each side of the die and describe the dot arrangement for each number.

❝ *Math Detectives, do you remember when we played Number Scene with this die? Let's take another close look at each side of our die.*
(Hold up the die for all the children to see, and describe each side of the die:
1 — one single dot in the middle of the die face
2 — two dots arranged on a diagonal at opposite corners of the die face
3 — three dots in a row arranged on a diagonal, with two at opposite corners of the die face
4 — four dots, one at each corner of the die face
5 — five dots, one at each corner of the die face with a single dot in the middle
6 — two rows of three dots along opposite sides of the die face)

2. Play Fruit to Number Concentration

Note: Depending on children's skill level, you may want to take out numeral cards 6 to 10 and corresponding fruit cards to reduce the size of the deck.

Introduce the card game, Fruit to Number Concentration, by holding up each numeral card to review numerals from 1 to 10 (or 1 to 5).

❝ *Today we are going to play a game called Fruit to Number Concentration. First, let's look at these cards that belong to the game — they have numerals on them. Let's read the numerals.*
(Model counting from 1 to 10 and hold up the corresponding card for each number. Encourage children to count out loud with you.)

Then, hold up each fruit card and encourage children to describe how you can figure out how many pieces of fruit there are on each card. Encourage children to talk about "subitizing" or figuring out how many pieces of fruit there are by looking, and then counting the fruit to check their answers.

❝ *Let's look at the other cards in the game, the fruit cards. Let's figure out how many pieces of fruit there are on each card. How can we do that?*
(Encourage children to share their ideas, and then guide the discussion to subitizing and counting. Then hold up each card reviewing the number of fruit on each card from 1 to 10.)

Model how to play the game. Like Shape Concentration, the goal is to flip over two cards that match. For this game, matching requires a numeral card and the fruit card with the corresponding number of pieces of fruit on it. Place the cards face down in two different rows — the numeral cards in one row, the fruit cards in another row.

- *Now let's learn how to play the game! First, mix the cards and put them with the fruit and number sides down in two different rows.*
  (Align the cards in two even rows on the carpet in front of you. Put all of the numeral cards in one row and all of the fruit cards in another row.)

- *When it's your turn, turn over two cards, one from each row, and say the number or the number of pieces of fruit on the cards. Then, figure out if they match. To get a match, you have to have a numeral card and the fruit card that has that many pieces of fruit on it.*
  (Model turning cards face up, reading numerals or numbers of pieces of fruit, and think out loud as you figure out if the cards match or do not match. Focus on the numeral and arrangement of the fruit — sometimes it's the same configuration as dots on a die, other times it's not.)

- *If the cards match, pick them up, and put them in front of you. If they don't match, turn them back over, but try to remember them for your next turn!*
  (Model picking up two matching cards and two non-matching cards.)

To extend the activity, have children place the corresponding number of pieces of plastic fruit next to the numeral cards.

- *Let's try something different with these cards. I flipped over the numeral 5. Who thinks they can use our plastic fruit to count out five pieces of fruit to go with my numeral 5 card?*
  (Choose a volunteer and think out loud as you help her count five pieces of fruit to go with the numeral 5 card, reinforcing that the last number you count is how many pieces of fruit there are altogether.)

Remind children that the game will be available during Center Time for them to play with a partner.

3. Sing "Shapes Song"

"Shapes Song" Lyrics (to the tune of "The Farmer in the Dell")

A circle's like a ball,
A circle's like a ball,
Round and round
It never stops,
A circle's like a ball!

A square is like a box,
A square is like a box,
It has four sides,
They're all the same,
A square is like a box!

A triangle has three sides,
A triangle has three sides,
Up the mountain,
Down, and back,
A triangle has three sides!

A rectangle has four sides,
A rectangle has four sides,
Two are long,
And two are short,
A rectangle has four sides!

Introduce and sing the "Shapes Song" with the children. Introduce the lyrics and melody ("Farmer in the Dell") at the same time to help children learn the song. Sky-draw the shapes as you sing about them

- *Today we're going to sing a song called "Shapes Song." We'll learn the words together. I will sing them first, and then you repeat after me.*
  (Introduce the song lyrics line by line. Sing one line and have the children sing or say the line back to you.)

- *Have you heard this melody before? Now, let's sing the words to this melody.*
  (Hum the melody of the first line of the song. Lead the children in singing the song, sky-drawing the shapes as you sing about them.)

Guided Book Reading

Zero

Zero is a big, round numeral who wants to join the other numerals when they line up to count. But she feels sad and left out, because she sees herself as an empty circle with a hole in the middle. With your Math Detectives, help Zero find out how she can join the other numerals and count, too!

Overview

During **Circle Time**, read ***Zero*** with the children. As you read, review and talk about **the numeral zero**. Focus math talk around **the shape of the numeral zero, large numbers,** and **counting from 0 to10.** Key pause points – marked with a ⏸ in the teacher's guide and book pages — are included as opportunities to ask questions to get children talking about the value and properties of the numeral zero as well as counting from 0 to 10.

Skills and other important points to cover

- Review the numeral zero and large numbers
- Review the simple shape (circle)
- Review counting from 0 to 10

What you will need

- *Zero* (book)
- One plastic piece of fruit (apple)
- Classroom number line

Guided Book Reading

TIMING GOAL: 15 minutes

1. Warm Up

Invite children to the Circle Time area to read the book, Zero.

Begin by asking the children to sky-write zero using their finger. Encourage children to describe what shape the numeral zero looks like (a circle).

- *Do you remember what the numeral zero looks like? Let's use our finger to draw one in the sky in front of us.*
  (Review what the numeral zero looks like, referencing the classroom number line if necessary. Sky-write the numeral zero along with the children in an exaggerated manner.)

- *Nice drawing, everyone! Drawing a zero with my finger reminded me of a round shape we've been talking about a lot recently. Are there any Math Detectives who think they know what curved shape looks like the numeral zero?*
  (Think out loud while you guide the discussion to the numeral zero having a shape similar to a circle. Remind children that a circle is round and is made up of a curve that goes all the way around.)

Hold up the Zero book and ask children to predict what the story will be about.

- *Today, we're going to read Zero. Looking at the cover of this book and hearing what the title is, what do you think this book will be about?*
  (Allow children to share their thoughts . There are no right or wrong answers.)

2. Guided Book Reading (with Pause Points)

Pause at page 4:

Discuss with children other ways to talk about the value of zero — none, or nothing. Encourage children to share their ideas about what having zero of something means by modeling one apple and "zero apples" with the plastic fruit piece.

- *So, Zero just said that she is worth nothing. I wonder what she means by that. I know that if I have one apple in my hand, I could say "I have one apple," but if I have zero apples in my hand, then "I have nothing" or "I have none". Maybe that's what she means.*
  (Prompt children for their ideas while you think out loud about the similar meanings of zero, nothing, and none. Use a plastic fruit apple as a model to demonstrate the idea of having one apple versus having none, or in other words, having zero apples.)

Pause at pages 22, 23, and 24:

Starting with zero, have the children count up to ten while you point to the numerals across these three pages.

❝ *OK, Math Detectives, it looks like Zero found a way to join the other numerals. She gets to lead the way while they count. The numerals on this page want everyone to count them … let's all count together!*
(Celebrate Zero finding her place before all of the other numerals. Starting with zero, count with the children up to the numeral ten on page 24, pointing to each numeral as you count.)

Pause at page 26–27:

Draw children's attention to the large numerals on these pages. Discuss how you can combine zero with other numerals to make new numerals.

❝ *Wow, look at how a zero keeps getting combined with the numerals on this page. I wonder if combining zeros with those numerals is making numbers that are bigger or numbers that are smaller. What do my Math Detectives think? Do you remember what happened to George when he combined those zeros with the numeral 1 while getting donuts? It looks like Zero feels happy and more important now, so maybe combining zero with other numerals makes a number bigger.*
(While looking at the various large numbers on these two pages, talk to children about how combining zero with other numerals creates a bigger number and represents a number that is greater in value.)

3. Wrap-Up

Review the different aspects of zero you talked about today. Talk about how a zero is round and a curve that goes all the way around, similar to a circle, and that you can use "none" or "nothing" to talk about having zero of something.

❝ *Today we learned a lot of things about the number zero. Are there any volunteers who want to share something that we learned about zero?*
(Guide the discussion to talk about the shape of zero (a curve), how it looks like a circle, and how you can use 'none' or 'nothing' to represent zero.)

Computer Center

Meatball Launcher

Skills

- Review counting from 1 to 9
- Review numeral identification from 1 to 9
- Review one-to-one correspondence and cardinality from 1 to 9

Hide and Seek

Skills

- Review numeral identification from 0 to 10
- Review number words from 0 to 10
- Review counting and cardinality from 0 to 10

Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Meatball Launcher*** and ***Hide and Seek***. Children review math skills covered in the week.

Remind children to count out loud and talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Count with Allie*
- *Apple Picking*
- *Bug Catcher*
- *Huff-Puff-a-Tron*
- *Vegetable Patterns*
- *Vegetable Harvest*
- *Flower Garden*
- *Sketch-a-Mite*
- *Blast Off*
- *Bubble Pop*

Hands-on Center

Fruit to Number Concentration

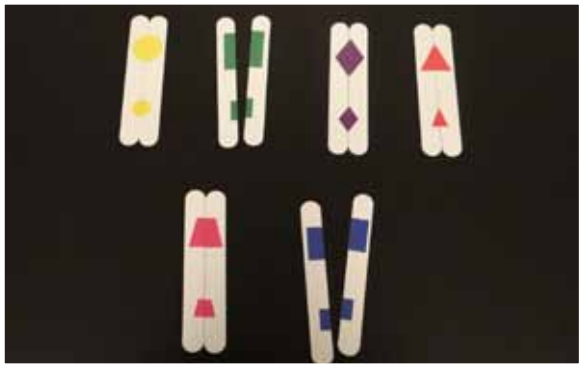
Skills

- Review subitizing from 1 to 10
- Review one-to-one correspondence, numeral identification, and cardinality from 1 to 10

Materials

- *Fruit to number concentration cards*

Shape Match



Skills

- Review constructing and deconstructing shapes
- Review simple and challenging shapes (circle, triangle, rectangle, square, trapezoid, and rhombus)

Materials

- Shape Match sticks

Keep in Mind...

During **Center Time**, small groups or pairs of children play focus games **Fruit to Number Concentration** and **Shape Match**. Children review math skills covered in the week.

Additional games also available during this time:

- *Simple Shape Concentration*
- *NUMBO 0–5*
- *Pipe Cleaner Shapes*
- *OOPS! Number Line 0–10*
- *Fruit Patterns*
- *OOPS! Number Line 0–20*
- *NUMBO 1–20*
- *Dominoes*
- *Number Tree*
- *Unifix Pattern Play*

Challenge Game Play

Hide and Seek (Curious George)

George and his friends love playing hide and seek! We can use our Math Detective skills to help George find numerals, number words, and all of his animal friends. This game will help children practice seeing numbers represented in different ways.

Overview

During **Circle Time**, play ***Hide and Seek*** with children on the **Interactive Whiteboard** (IWB). As you demonstrate how to play the game, use this opportunity to talk about how numbers can be represented in different ways: **numerals, words, and objects.**

Skills and other important points to cover

- Review numeral identification from 0 to 10
- Review number words from 0 to 10
- Review counting and cardinality from 0 to 10

What you will need

- Interactive Whiteboard (IWB)
- Curious George: *Hide and Seek*
- Classroom number line

Challenge Game Play

TIMING GOAL: 25 minutes

1. Warm Up

Invite children to the IWB area to play Hide and Seek, a new game on the IWB.

Begin by reviewing the different ways to represent a number: using numerals, using number words, and using objects.

- *Have you noticed that as a Math Detective you sometimes find a number represented in a different way? For example, I could say the number one, or I could hold up one finger, and each of these is a way to represent the number one. What if I say the number two, what is another way to show the number two?*
  (Encourage children to represent the number two by holding up two fingers or two hands. If there are any number words in the room, then point those out as another way to represent a number.)

2. Introduce Challenge Game

Note: Some children may find this game to be difficult because of the need to read the number words; provide support and scaffolding to help children identify the number words.

Model playing Hide and Seek by demonstrating how to help George find and click on a number represented in three different ways: as a numeral (1) as a word (one) and as a [series of] object(s) (one lion).

- *Let's play Hide and Seek together. In this game, we have to look for the numbers that are hiding around the room and help George find them. Each number will be represented in three different ways: a numeral, a word, and a set of things.*
  (Think out loud as you model tapping on each example: a numeral, word, and set of things.)

- *Let's practice again. Can you find the numeral 2? Can you find the word two? It begins with a "t" sound, and that is made by a T, do you see it? Can you find two cows?*
  (Listen to the instructions from children on where to find the numbers, and then model tapping on the numeral 2, the word two, and two cows to cause them to move to the spaces at the top of the screen.)

Allow children, or several volunteers, to have a turn playing Hide and Seek.

3. Wrap-Up

Review the concepts covered in the challenge game — recognizing numbers represented in three different ways: using numerals, using number words, and using objects.

❞ *Let's think back to what we learned today. We talked about the different ways we might see numbers. One way is to see the numeral, like a 1 or a 2, like on our number line. Can you think of another way to show one or two? What about a way using your fingers? Are there any other ways that you can think of that we learned about today?*
(Remind children of how they looked for numbers shown in different ways when playing Hide and Seek — numerals, number words, and objects — and help them find numbers represented in different ways in their classroom.)

Computer Center

Meatball Launcher

Skills

- Review counting from 1 to 9
- Review numeral identification from 1 to 9
- Review one-to-one correspondence and cardinality from 1 to 9

Hide and Seek

Skills

- Review numeral identification from 0 to 10
- Review number words from 0 to 10
- Review counting and cardinality from 0 to 10

Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Meatball Launcher*** and ***Hide and Seek***. Children review math skills covered in the week.

Remind children to count out loud and talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Count with Allie*
- *Apple Picking*
- *Bug Catcher*
- *Huff-Puff-a-Tron*
- *Vegetable Patterns*
- *Vegetable Harvest*
- *Flower Garden*
- *Sketch-a-Mite*
- *Blast Off*
- *Bubble Pop*

Hands-on Center

Fruit to Number Concentration

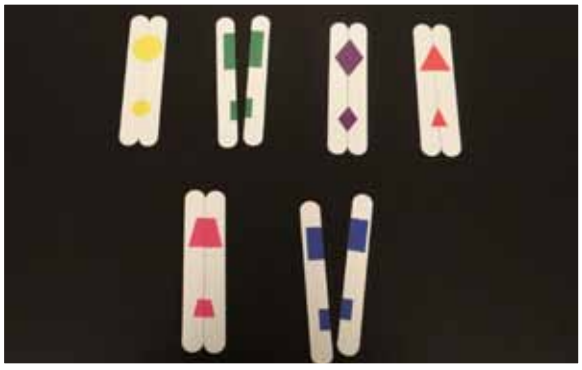
Skills

- Review subitizing from 1 to 10
- Review one-to-one correspondence, numeral identification, and cardinality from 1 to 10

Materials

- *Fruit to number concentration cards*

Shape Match



Skills

- Review constructing and deconstructing shapes
- Review simple and challenging shapes (circle, triangle, rectangle, square, trapezoid, and rhombus)

Materials

- Shape Match sticks

Keep in Mind...

During **Center Time**, small groups or pairs of children play focus games **Fruit to Number Concentration** and **Shape Match**. Children review math skills covered in the week.

Additional games also available during this time:

- *Simple Shape Concentration*
- *NUMBO 0–5*
- *Pipe Cleaner Shapes*
- *OOPS! Number Line 0–10*
- *Fruit Patterns*
- *OOPS! Number Line 0–20*
- *NUMBO 1–20*
- *Dominoes*
- *Number Tree*
- *Unifix Pattern Play*

Video Co-viewing

Bunny Hunt (Curious George)

George's curiosity gets the better of him when visiting a friend's bunnies, and they all hop out of the hutch. As George looks for bunnies on the loose, children can use the bunnies' food bowls to figure out how many bunnies George has to find. Children will use one-to-one correspondence and counting from 1 to 8 to make sure all of the bunnies are returned safely home. During his hunt for the bunnies ,George also helps children review simple shapes (circle, triangle, rectangle, and square).

Overview

During **Circle Time**, watch ***Bunny Hunt*** with children on the **Interactive Whiteboard** (IWB). Look and listen for key pause points (marked with ⏸ and a "beep"), and use them as opportunities to ask questions to get children talking about math.

Skills and other important points to cover

- Review simple shapes (circle, triangle, rectangle, square)
- Review one-to-one correspondence and cardinality from 1 to 8
- Review counting from 1 to 8

What you will need

- Interactive Whiteboard (IWB)
- Curious George: *Bunny Hunt* video (11:07 minutes)
- Dry erase board, markers, erasers
- Classroom number line

Video Co-Viewing Activity

TIMING GOAL: 25 minutes

1. Warm Up

Invite all children to the IWB area to watch Bunny Hunt on the IWB.

Review simple shapes (circle, triangle, rectangle, square) and their geometric properties (lines, curves, sides, corners [angles]) by drawing them on the dry erase board.

> *Math Detectives, let's review some shapes. What shape is this? Does it have a curve or a side? How many sides does a _____ have altogether?*
> (Draw each shape [circle, triangle, rectangle, square] on the dry erase board. Review the geometric properties of each shape. If the shape has sides, practice counting the sides of the shape, emphasizing "altogether.")

Review counting and one-to-one correspondence and cardinality from 1 to 8 by drawing seven circles and then eight triangles on the dry erase board and figuring out which has more.

> *Let's look here. How many circles are there altogether? How many triangles are there altogether? Which has more?*
> (Draw seven circles on the dry erase board. Model counting as you point to each circle. Draw eight triangles under the seven circles. Model counting as you point to the triangles, emphasizing that the last number you count is how many there are altogether. Help children figure out which has more.)

Remind children you will pause the video to talk about the math you see.

Start the video.

2. Video Co-Viewing (with Pause Points)

1:20 — George has put on a baseball cap and is looking at himself in the mirror.

Encourage children to find the shapes hidden in George's room (circle, triangle, rectangle, square).

> *Let's look around George's room in the countryside. What shapes do you see hidden in the room?*
> (Guide discussion to talk about the shapes around the room—a circle and triangle on the blocks, squares on the faces of the blocks, rectangles on the spine of the books).

Ask children to predict what will happen next in the video.

Start the video.

2.3:45 — There is a mother bunny and seven of her babies in the hutch.

Think out loud as you encourage children to figure out how many bunnies there are altogether (8), how many mommy bunnies (1), and how many baby bunnies (7) there are altogether in the hutch.

> *Do you think it was a good idea for George to open the hutch? A hutch is what you call the cage where the bunnies are kept. How many bunnies do you see here altogether? How many mommy bunnies do you see altogether? How many baby bunnies do you see altogether?*
> (Briefly talk about George opening the bunny cage. Model counting the number of bunnies altogether, the mommy bunny, and the baby bunnies while pointing to each as you count. Reinforce that the last number you count is how many there are altogether.)

Ask children to predict what will happen next in the video

Resume video.

3. 4:40 — There are seven bunny food bowls by the mommy bunny.

Think out loud as you encourage children to figure out how many baby bunnies got loose by counting the total number of food bowls (7).

> *Let's help George figure out how many baby bunnies are missing by counting the number of food bowls. How many bowls are there altogether? If we figure out how many bowls there are, then we'll know how many baby bunnies were in the hutch.*
> (Point to each food bowl as you encourage children to count out loud with you. Reinforce that the last number you count is how many bowls—and baby bunnies—there are altogether.)

Ask children to predict what will happen next in the video.

Resume video.

4. 6:42 — George has found one bunny and is putting it back into the hutch.

Talk out loud as you encourage children to figure out how many bunnies are still missing (6). Use your fingers or the classroom number line and remind children that you counted 7 food bowls and George has caught 1 bunny so far.

> *I'm glad George found one bunny. We said there were seven bunnies missing altogether. He found one. How can we figure out how many are still missing?*
> (Model the total number of bunnies missing by holding up seven fingers. When you talk about George finding one bunny, put one finger down. Model counting and move each finger as you count, encouraging children to count with you.)

Ask children to predict what will happen next in the video.

Resume video. End 11:07

3. Wrap-Up.

Review the concepts covered in the video—identifying shapes (circle, triangle, rectangle, square) and counting with one-to-one correspondence and cardinality from 1 to 8.

- *Let's think back to what we learned today. Who wants to share about what we learned?* (Encourage children to tell you what they remember from the lesson. Guide discussion to talk about the shapes—circle, triangle, rectangle, square—hidden in George's room, and counting the 7 bowls and 8 bunnies.)

Remind children that, as Math Detectives, they should always listen carefully and keep their eyes open to find math all around!

Computer Center

Bunny Ride

Skills

- Review numeral identification from 0 to 20
- Review counting from 0 to 20
- Review one-to-one correspondence from 0 to 20

Buddy's Gem Hunt

Skills

- Review identifying simple and challenging shapes (circle, triangle, square, pentagon)
- Review comparing size and orientation of shapes
- Review geometric properties of simple and challenging shapes (corner [angle], line, curve, and side)

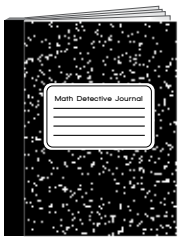
Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Bunny Ride*** and ***Buddy's Gem Hunt.*** Children review math skills covered in the week.

Remind children to count out loud, identify, compare, and match shapes, and to talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Count with Allie*
- *Apple Picking*
- *Bug Catcher*
- *Huff-Puff-a-Tron*
- *Vegetable Patterns*
- *Vegetable Harvest*
- *Flower Garden*
- *Sketch-a-Mite*
- *Blast Off*
- *Bubble Pop*
- *Meatball Launcher*
- *Hide and Seek*



Math Detective Journal

Math Detective Journal

During Math Detective Journal time, help children make AB, ABB, and ABC patterns using foam shapes. After creating patterns with the foam shapes, children can trace different shapes in their Journals. Children share the patterns they make and tracings with friends by showing and naming the foam shapes, then talking about the geometric properties of the shapes they traced.

Overview

During **Small Group Time**, help children **identify, create, copy,** and **extend AB, ABB, and ABC** patterns with foam shapes. Then help children **trace** and **draw simple** and **challenging shapes** in their **Math Detective Journals**, discussing the sides and corners (angles) of the shapes they draw.

Skills and other important points to cover

- Review simple and challenging shapes (circle, triangle, rectangle, square, rhombus)
- Review counting sides and corners (angles) of simple and challenging shapes
- Review identifying, creating, copying, and extending AB, ABB, and ABC patterns

What you will need

- Math Detective Journals (one per child)
- Foam shapes
- Foam shape pattern cards (AB, ABB, ABC)
- Crayons
- Dry erase board, marker, and eraser

Math Detective Journal

TIMING GOAL: 20 minutes

1. Warm Up

Invite children to the Small Group area to review counting sides and corners (angles) of circles, triangles, rectangles, squares, and rhombuses, using the foam shapes.

- *Math Detectives, do you remember what we did with shapes last week in our Math Detective Journals?*
  (Briefly discuss drawing donuts with donut holes in various simple and challenging shapes.)

- *This week, our shapes are made of foam. Can you help me name these shapes and describe them? Let's start with this shape. What's this shape's name? How many sides does it have altogether? How many corners (angles) does it have?*
  (Hold up each foam shape, and help children identify and talk about the geometric properties of circles, triangles, rectangles, squares, and rhombuses.)

Review the concepts of AB, ABB, and ABC patterns, referencing patterns from previous weeks (e.g., The Cat's red-white-red-white hat pattern) or making your own patterns (e.g. [clap], [pat head], [snap]). Help children name the pattern type and identify core elements of each pattern.

- *Remember we also said that patterns were part of math, too. Can you help me name some patterns? The Cat had a red-whit- red-white pattern on his hat. What kind of pattern is that? Red-white-red-white?*
  (Guide discussion to talk about AB patterns and name the core elements of the pattern.)

- *Now, what kind of pattern is this? (Clap), (pat head), (snap), (clap), (pat head), (snap). What are the core elements of this pattern?*
  (Demonstrate the ABC pattern by clapping, patting your head, and snapping your fingers as you say the words "clap," "pat," and "snap." Encourage children to name the core elements by name and using A, B, and C terminology.)

- *We've talked about AB and ABC patterns. What other type of pattern do you remember? Can you act out an ABB pattern by clapping and tapping your head?*
  (Guide discussion to talk about ABB patterns. Encourage children to model an ABB pattern using the core elements "clap" and "pat head.")

2. Introduce Patterning Shapes

Review the shapes and different patterns, including their core elements, on the Foam Shape Pattern Cards.

- *Great, now that we've reviewed our shapes and patterns, let's talk about the patterns on these cards. Let's start with this one.*
  (Help children talk about the pattern types and name the core elements in each of the patterns in the AB, ABB, and ABC Foam Shape Pattern Cards.)

Model making an ABC pattern from the Foam Shape Pattern Card, using foam shapes rhombus, rectangle, and circle. Encourage children to copy the same pattern with the foam shapes.

- *You're going to create your own AB, ABB, and ABC patterns with these foam shapes, but let's try one together first, using this Pattern Card to help us. Name the core elements with me: rhombus, rectangle, circle, rhombus, rectangle, circle.*
  (Hold up the "rhombus-rectangle-circle" ABC pattern card. Point and name each core element of the pattern.)

- *Can you extend the pattern? What three core elements come next? Now, try making this pattern with the foam shapes.*
  (Hold up the foam shapes to model making the ABC pattern—rhombus, rectangle, circle. Encourage children to talk about which three core elements come next in the pattern. Help them copy and extend the pattern, using the foam shapes.)

Model creating an ABB foam shape pattern (triangle, rhombus, rhombus) but with a missing core element. Leave a space on the table for the missing core element. Think out loud to help children identify the missing core element.

- *Now, look at this shape pattern. It's an ABB pattern but something is missing. Triangle, rhombus, rhombus, _____, rhombus, rhombus. What core element is missing from this pattern?*
  (Point to the foam shapes as you name the ABB pattern—triangle, rhombus, rhombus. Point as you draw attention to the space for the missing core element. Guide the discussion to how can you figure out what shape—triangle—is missing.)

Encourage children to create an ABB foam shape pattern with a missing core element and have a partner figure out which core element is missing.

- *Now you and your neighbor try making an ABB pattern with the foam shapes. Take one shape away and ask your neighbor which shape is missing.*
  (Help children make an ABB pattern using the foam shapes and name the core elements out loud. Help them take one core element out of the pattern and have their partner identify the missing core element.)

Encourage children to copy or extend patterns from the Foam Shape Pattern Cards or, if they are able, to create their own AB, ABB, and ABC patterns using the foam shapes.

- *Can you think of another AB, ABB, or ABC shape pattern? Try creating that pattern by yourselves or with your neighbors. If you want, you can copy the patterns from the Foam Shape Pattern Cards.*
  (Encourage children to talk about different AB, ABB, and ABC foam shape patterns they make. Help children create AB, ABB, and ABC patterns with the foam shapes.)

After creating patterns, help children to choose shapes to trace in their Journals.

- *After you make an AB, ABB, and ABC pattern, you can choose shapes to trace in your Journals. To trace a foam shape, hold it flat on the paper. Use a crayon to draw and follow each straight or curved side of the shape.*
  (Model how to trace a shape on the dry erase board. Help children trace shapes in their Journals.)

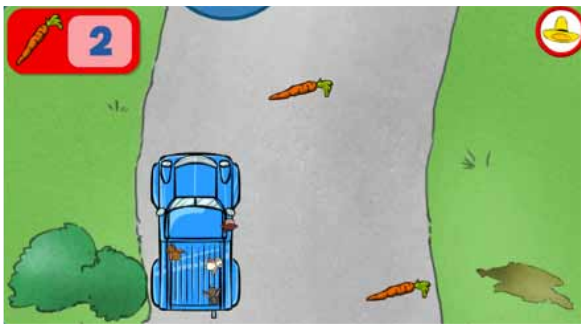
3. Wrap-Up

Encourage children to share their shape tracings and talk out loud with a partner about the geometric properties of the shapes—sides, corners (angles), curves.

❞ *Now, let's share our tracings with our neighbors. When you show your tracings to your neighbors, point and say each shape's name. Also, count out loud the number of sides and corners (angles) each shape has altogether. Be sure to name the curve of the shape, if your shape has one.*
(Help children share their shapes tracings with a partner, naming the shapes and describing their geometric properties.)

Easy Game Play

Bunny Ride (Curious George)



The man with the yellow hat is driving George through the forest. You can help by driving the truck to collect carrots to feed George's hungry bunny friends. Collecting carrots will help children review numerals from 1to 20. How many bunnies can you feed?

Overview

During **Small Group Time**, demonstrate how to play ***Bunny Ride*** on the **Interactive Whiteboard** (IWB). Use game play as an opportunity to practice **counting and one-to-one correspondence** as you call on individual children to try out the game on the Interactive Whiteboard. Remind children of **basic game play rules.**

Skills and other important points to cover

- Review numeral identification from 0 to 20
- Review counting from 0 to 20
- Review one-to-one correspondence from 0 to 20

What you will need

- Interactive Whiteboard (IWB)
- Curious George: *Bunny Ride* Game
- Classroom Number Line

Easy Game Play

TIMING GOAL: 10 minutes

1. Warm Up

Invite children to the IWB area and review counting and one-to-one correspondence. For instance, count the number of feet in the group as you model pointing to each foot as you count. Reinforce that the last number you count is how many feet there are altogether.

- *Let's practice some counting. Remember how we counted the bunnies in the hutch while we watched Bunny Hunt? Let's count how many feet we have in our group altogether.*
  (Model counting, or have a child volunteer count the number of feet in the group. Encourage pointing to each foot as it is counted, and reinforce that the last number counted is how many feet there are altogether.)

- *Now, Math Detectives, let's count from 0 to 20, this time using our number line. I'll point while you count.*
  (Point to each numeral on the number line as you encourage children to count out loud.)

2. Introduce Easy Game

Remind children of basic game play rules—only one child can touch the Interactive Whiteboard at one time, and they must take turns playing.

- *Today we are going to play another game on the Interactive Whiteboard! But we have to be careful, only one of us can touch the screen at a time and we have to take turns.*
  (Model how touching the board makes things happen; load the game Bunny Ride.)

Think out loud as you model how to play Bunny Ride—help children count as you model using your finger to steer the truck over each carrot.

- *Now, let's play Bunny Ride. I can help George collect carrots for the bunnies by using my finger to steer the truck over each carrot we see. Count with me as we collect carrots for George and his bunny friends!*
  (Model moving the truck over the carrots to collect them. Model counting out loud with the Man with the Yellow Hat as each carrot is collected.)

Draw children's attention to the numeral in the upper left of the screen, describing how it changes with each carrot you collect to represent how many carrots you have altogether.

- *Oh no, I think I lost count of the carrots. How can we check how many carrots we collected for George and his bunny friends so far?*
  (Point to the numeral in the upper left corner, noting how it represents how many carrots you collected altogether. Steer over another carrot to show how the numeral increase with each carrot you collect.)

Allow children, or several volunteers, to have a turn playing Bunny Ride. Ask them to think out loud when they take their turns.

Remind children that during Center Time, they will play Bunny Ride with a partner on a computer using a mouse.

During Computer Center Time, you can play this game again with a partner! But instead of touching the screen, you'll use the mouse to steer the car.

3. Wrap-Up

Review counting with one-to-one correspondence and identifying numerals.

> *All right, Math Detectives! Let's think about what we did today. Who can tell me something about the math we did when we were playing Bunny Ride?*
> (Guide the discussion to talk about how children counted the carrots and saw the number of carrots counted in the numeral display.)

Hands-on Center

Number Act Out

Skills

- Review counting from 1 to 5
- Review one-to-one correspondence and cardinality from 1 to 5

Materials

- Number Act Out cards
- Classroom Number Line

Patterning Shapes

Skills

- Review simple and challenging shapes (circle, triangle, rectangle, square, rhombus)
- Review counting sides and corners (angles) of simple and challenging shapes
- Review identifying, creating, copying, and extending AB, ABB, and ABC patterns

Materials

- Foam shapes
- Foam shape pattern cards

Keep in Mind...

During **Center Time**, small groups or pairs of children play focus games **Number Act Out** and **Patterning Shapes**. Children review math skills covered in the week.

Additional games also available during this time:

- *Simple Shape Concentration*
- *NUMBO 0–5*
- *Pipe Cleaner Shapes*
- *OOPS! Number Line 0–10*
- *Fruit Patterns*
- *OOPS! Number Line 0–20*
- *NUMBO 1–20*
- *Dominoes*
- *Number Tree*
- *Unifix Pattern Play*
- *Fruit to Number Concentration*
- *Shape Match*

Computer Center

Bunny Ride

Skills

- Review numeral identification from 0 to 20
- Review counting from 0 to 20
- Review one-to-one correspondence from 0 to 20

Buddy's Gem Hunt

Skills

- Review identifying simple and challenging shapes (circle, triangle, square, pentagon)
- Review comparing size and orientation of shapes
- Review geometric properties of simple and challenging shapes (corner [angle], line, curve, and side)

Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Bunny Ride*** and ***Buddy's Gem Hunt.*** Children review math skills covered in the week.

Remind children to count out loud, identify, compare, and match shapes, and to talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Count with Allie*
- *Apple Picking*
- *Bug Catcher*
- *Huff-Puff-a-Tron*
- *Vegetable Patterns*
- *Vegetable Harvest*
- *Flower Garden*
- *Sketch-a-Mite*
- *Blast Off*
- *Bubble Pop*
- *Meatball Launcher*
- *Hide and Seek*

Math Circle Routine

Number Act Out

Help children represent number values as physical actions using the Number Act Out cards. One child chooses a card from the deck of Number Act Out cards and acts out the representation of the number on the card (e.g., jumping on one foot three times) while the other children guess the number being acted out.

Number Scene

Using an oversize die, one child rolls while the others watch to see what dot arrangement comes up. With only a short period of time to identify the number of visible dots, children offer their ideas and then count to check. Using the common dot representations for numbers 1 to 6 encourages children to recognize the visual arrangements that numbers may have.

Overview

During **Circle Time**, introduce how to play **Number Act Out** to review **counting** and **one-to-one correspondence** and **cardinality**. Additionally, children review recognizing number arrangements **(subitizing)** for numbers 1 to 6 that appear on an oversized tossed die.

Skills and other important points to cover

- Review counting from 1 to 5
- Review one-to-one correspondence and cardinality from 1 to 5
- Review subitizing 1 to 6

What you will need

- Number Act Out cards
- Classroom number line
- Large foam die

Math Circle Routine

TIMING GOAL: 10 minutes

1. Warm Up

Invite all children to the Circle Time area.

Use the classroom number line to review counting from 1 to 5.

- *Math Detectives, you've become excellent counters. Can you count from 1 to 5 for me? I'm not going to count, so make sure you count nice and loud.*
  (Model pointing to each numeral on the number line as children count. If possible, have children count without your assistance.)

2. Play Number Act Out

Briefly discuss how the children used fruit cards from the Fruit to Number Concentration game and plastic fruit to represent numbers last week.

- *That was some great counting! Do you remember playing Fruit to Number Concentration last week? We matched the fruit cards to numeral cards. Using fruit was one way for us to represent a number.*
  (Briefly guide discussion to remind children of Fruit to Number Concentration, played last week. Talk about matching the correct set of fruit on a card to the corresponding numeral card.)

Encourage children to predict how you might play the new game based on the title "Number Act Out."

- *Today, we're going to represent numbers in another way by playing a new game called "Number Act Out." How do you think we play this game?*
  (Give children an opportunity to predict how to play this game by only offering the title of the game.)

Describe and show the Number Act Out cards to children: The pictures tell you what to do and how many times to do it.

- *For this game, I have a bunch of cards with pictures on them. The pictures tell me what I have to act out or do, and how many times I have to do it. I'm going to mix up the cards and put them in a stack with the picture side down on the carpet. You will take turns choosing a card and acting out the picture.*
  (Show one or two cards to the children and then stack the cards in a pile in front of you).

Ask for a child volunteer to draw a card from the pile and act out the actions on the card. Encourage the other children to pay close attention to what the volunteer does and how many times she does it.

- *First, for this game you need a partner. Who will be my partner? Great! We'll take turns choosing a card and acting out the picture. Everyone else pay close attention to what we do and how many times we do it!*
  (Select a child to help demonstrate how to play the game. Have the child pick a card. Quietly talk or whisper what the action is and how many times it should be acted out, without revealing it to the group. Help the child act out the representation.)

Ask the children how many times the volunteer did the action, or what number she acted out.

- *What number did _____ act out? Let's have _____ act it out one more time, and let's count to check if we're correct.*
  (Guide the discussion to talk about the action and how many times it was done. To check the answer, have the volunteer act the card out one more time as the class counts each action out loud.)

Repeat until all cards have been acted out. Remind children that the game will be available during Center Time.

- *Great job acting out those numbers, Math Detectives! These cards will be in the Center area for you to practice more number acting-out this week!*
  (Hold up the Number Act Out cards.)

3. Play Number Scene

Note: For this round of Number Scene, show the die to children for only two seconds before hiding it.

Briefly review the Number Scene activity by displaying each side of the die and describing the dot arrangement for each number.

- *Math Detectives, today we're going to play Number Scene again. Remember for this game we use a large size die. Let's take a close look at each side of our die.*
  (Hold up the die for all of the children to see, and describe each side of the die:
  1—a single dot in the middle of the die face
  2—two dots arranged on a diagonal at opposite corners of the die face
  3—three dots in a row arranged on a diagonal, with two at opposite corners of the die face
  4—four dots, one at each corner of the die face
  5—five dots, one at each corner of the die face with a single dot in the middle
  6—two rows of three dots along opposite sides of the die face)

After exploring the faces of the die, review that once the die is rolled, there will be only two seconds to see the dots before saying out loud how many dots there are. Reinforce that children have less time to see the dots than they did before.

- *We're going to practice our Math Detective skills to identify the number arrangement of dots on the face of a die. But we have to be quick! You'll see the dots for only two seconds! This is even less time than you had before.*
  (While providing these verbal game instructions, model the movements of the game. For example, roll the die and then show the face of the side it landed on to the children. Then hide it behind your back and pretend to think of what number it was in an exaggerated manner).

- *Who wants to be our first volunteer to roll the die? Remember that once it lands on a side, I will pick it up and show it to you very quickly before putting it behind my back.*
  (Have the volunteer roll the die. Pick it up and show the children the dot arrangement that was rolled for two seconds, then hide the die behind you.)

- *How many dots did you see? Can you raise your hand to tell me how many dots there were?*
  (Call on one volunteer to share his answer with the class. Ask for feedback or confirmation of an answer from other children.)

Reveal the die and count the dots to confirm the answer. Repeat the activity several times.

- *Now let's count the number of dots on the face of the die that our volunteer rolled. There are ___ dots. Was he right? Let's play this game a few more times to practice!*
  (Count the dots on the face of the die aloud with children. Confirm correct and incorrect answers provided. Repeat activity several times.)

Guided Book Reading

Color Zoo

As you read this book with your Math Detectives, create new and colorful zoo animals using different combinations of shapes. Use this as an opportunity to identify the different shapes and the geometric properties of those shapes that make up each animal.

Overview

During **Circle Time**, read ***Color Zoo*** with children. As you read, review and talk about simple and **challenging shapes, counting,** and **one-to-one correspondence** from **1 to 6.** Focus math talk around **circles, triangles, squares, and hexagons.** Key pause points – marked with a ⏸ in the teacher's guide and book pages—are included as opportunities to ask questions to get children talking about simple and challenging shapes and the geometric properties of those shapes.

Skills and other important points to cover

- Review simple and challenging shapes (circle, triangle, square, and hexagon)
- Review geometric properties of simple and challenging shapes (corner [angle], curve, and side)
- Review one-to-one correspondence and cardinality from 1 to 6

What you will need

- *Color Zoo* (book)
- Dry erase board, markers, eraser

Guided Book Reading

TIMING GOAL: 15 minutes

1. Warm Up

Invite children to the Circle Time area to read the book, Color Zoo.

Review circles, triangles, squares, and hexagons with children by drawing them on the dry erase board. Draw the hexagon last and encourage children to count the sides and corners (angles) of the hexagon.

- *I am going to draw some shapes, and I need my Math Detectives to name them for me. Once you recognize the shape I drew, raise your hand and I will call on a volunteer. Can anyone tell me what this one is? OK, what about this one?*
  (Help children identify each shape as you hold up your dry erase board drawings of a circle, triangle, square, and hexagon. Draw and hold up the hexagon last.)

- *Now, let's look at this hexagon some more. It looks like it has a lot of sides and corners (angles). How can we figure out how many sides? How about how many corners (angles)?*
  (Think out loud as you guide the discussion to counting sides and corners [angles]. Encourage children to count out loud as you point to the six sides and then the six corners [angles] of the hexagon. Emphasize that the last number you count is how many sides and corners [angles] there are altogether.)

Hold up the Color Zoo book and ask children to predict what the story will be about.

- *Today, we're going to read Color Zoo. Looking at the cover of this book, what do you think it will be about? Do you recognize any shapes?*
  (Allow children to share their thoughts.)

2. Guided Book Reading (with Pause Points)

Pause at page 3:

Encourage children to identify the circles, triangles, and square in the picture.

- *Wow, look at this picture of a tiger. I didn't know you could make a picture of an animal out of shapes. Who thinks they can name a shape they recognize in this picture?*
  (Call on volunteers to identify the shapes in the picture—the circle head, ears, and eyes; the triangle face and nose; and the square framework around the face and whiskers.)

Pause at pages 8–9:

Describe the square, triangle, and circle by their geometric properties (e.g., "a curve that goes all the way around" or "a shape with three sides and three corners [angles]") and encourage children to find the shapes on the page.

❝ *OK, Math Detectives, I don't see any animals on this page, but I do see some shapes. Does anyone see a shape that has four sides and four corners (angles)? What about a shape that has a curve? What about a shape with three sides and three corners (angles)?*
(Call up volunteers to identify the square, circle, and triangle on the page.)

Pause at page 24:

Draw children's attention to the hexagon. Encourage them to identify the shape by name and to count its six sides and corners (angles).

❝ *Does anyone remember the name of this shape? I think I remember drawing this shape before we started reading our book. Does anyone want to come up and tell us what shape this is before counting how many sides and corners (angles) it has altogether?*
(Call up a volunteer and prompt him/her through the identification of the hexagon as well as the counting of its six sides and corners [angles]. Emphasize that the last number you count is how many sides and corners [angles] there are altogether.)

3. Wrap-Up

Review the simple and challenging shapes covered today—circle, triangle, square, and hexagon) by having children sky-draw them. Also, review the different geometric properties of these shapes—curves, sides, and corners (angles).

❝ *Today we saw how shapes could be used to make pictures of animals. That was pretty cool! Let's see if we can draw some of these shapes in the sky together. When I say the name of a shape, I want everyone to draw it with their finger in front of them.*
(Name a circle, triangle, square, and hexagon one-by-one as you sky-draw the shape along with the children.)

❝ *Are there any Math Detectives who remember which shape we drew that has a curve? Can anyone remember which shapes we drew that have sides and corners (angles)?*
(Encourage children to name the shapes you describe. Reinforce that a circle has a curve that goes all the way around and that a square, a triangle, and a hexagon have sides and corners [angles].)

Computer Center

Bunny Ride

Skills

- Review numeral identification from 0 to 20
- Review counting from 0 to 20
- Review one-to-one correspondence from 0 to 20

Buddy's Gem Hunt

Skills

- Review identifying simple and challenging shapes (circle, triangle, square, pentagon)
- Review comparing size and orientation of shapes
- Review geometric properties of simple and challenging shapes (corner [angle], line, curve, and side)

Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Bunny Ride*** and ***Buddy's Gem Hunt.*** Children review math skills covered in the week.

Remind children to count out loud, identify, compare, and match shapes, and to talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Count with Allie*
- *Apple Picking*
- *Bug Catcher*
- *Huff-Puff-a-Tron*
- *Vegetable Patterns*
- *Vegetable Harvest*
- *Flower Garden*
- *Sketch-a-Mite*
- *Blast Off*
- *Bubble Pop*
- *Meatball Launcher*
- *Hide and Seek*

Hands-on Center

Number Act Out

Skills

- Review counting from 1 to 5
- Review one-to-one correspondence and cardinality from 1 to 5

Materials

- Number Act Out cards
- Classroom Number Line

Patterning Shapes

Skills

- Review simple and challenging shapes (circle, triangle, rectangle, square, rhombus)
- Review counting sides and corners (angles) of simple and challenging shapes
- Review identifying, creating, copying, and extending AB, ABB, and ABC patterns

Materials

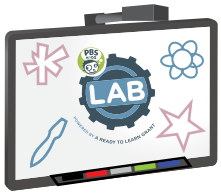
- Foam shapes
- Foam shape pattern cards

Keep in Mind...

During **Center Time**, small groups or pairs of children play focus games **Number Act Out** and **Patterning Shapes**. Children review math skills covered in the week.

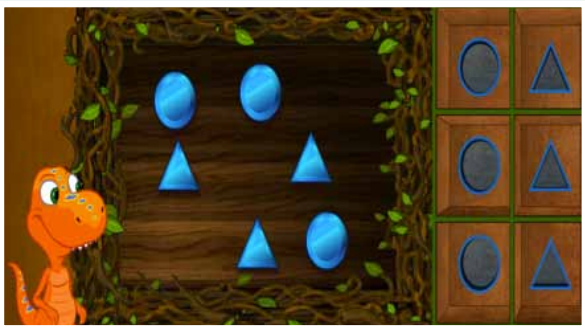
Additional games also available during this time:

- *Simple Shape Concentration*
- *NUMBO 0–5*
- *Pipe Cleaner Shapes*
- *OOPS! Number Line 0–10*
- *Fruit Patterns*
- *OOPS! Number Line 0–20*
- *NUMBO 1–20*
- *Dominoes*
- *Number Tree*
- *Unifix Pattern Play*
- *Fruit to Number Concentration*
- *Shape Match*



Challenge Game Play

Buddy's Gem Hunt (Dinosaur Train)



In Troodon Town, Buddy is on a treasure hunt to find shape gems. As Buddy leads them down the mine, children will practice identifying simple and challenging shapes, like triangles, circles, and pentagons. Because these gems are stuck deep in the cave, children also will review the size and orientation of shapes. The gems collected will be a great gift for Mr. Conductor!

Overview

During **Circle Time**, play ***Buddy's Gem Hunt*** with children on the **Interactive Whiteboard** (IWB). As you demonstrate how to play the game, use this opportunity to compare and contrast the different **sizes** and **orientations of shapes.**

Skills and other important points to cover

- Review identifying simple and challenging shapes (circle, triangle, square, pentagon)
- Review comparing size and orientation of shapes
- Review geometric properties of simple and challenging shapes (corner [angle], line, curve, and side)

What you will need

- Interactive Whiteboard (IWB)
- Dinosaur Train: *Buddy's Gem Hunt*
- Dry erase board, markers, eraser

Challenge Game Play

TIMING GOAL: 25 minutes

1. Warm Up

Invite children to the IWB area to play *Buddy's Gem Hunt*, a new game on the IWB.

Review size of shapes—emphasize that a shape is still the same shape whether it is really big or really small. Draw two circles and two triangles of different sizes on the dry erase board as examples. Encourage children to identify the geometric properties of the shapes.

> *Have you noticed that sometimes shapes are different in size? Sometimes you can see a very small shape, like a small circle, and then you can see a very big shape, like a big circle, and even though they are different sizes, they are still both circles. If I show you a very small triangle, and then a very big triangle, would they both be called triangles?*
> (Draw the shapes on the dry erase board, and encourage children to describe the shapes, reinforcing their descriptions with language such as "a circle is a curve that goes all the way around" or "a triangle has three corners [angles] and three sides.")

Review orientation of shapes—emphasizing that a shape is still the same shape regardless of which way it is facing. Draw one triangle with the point facing up and another with the point facing down on the dry erase board as examples. Encourage children to identify the geometric properties of the shapes.

> *Have you also noticed that sometimes shapes are facing different ways? Sometimes the point of a triangle is facing up like this, and sometimes it's facing down like this .Are these both still triangles?*
> (Draw the shapes on the dry erase board, and encourage children to describe the shapes.)

2. Introduce Challenge Game

Model playing *Buddy's Gem Hunt* by demonstrating how to tap on the gems of the specific shape and color Buddy describes. Talk out loud as you decide whether each gem you pass is the right shape and color, describing the shape's geometric properties.

> *Let's play Buddy's Gem Hunt together. In this game we have to look for the shape and color of gem that Buddy asks us to find. Then, when we see that shape in the right color going by, we have to tap it so that we can add it to our collection.*
> (Model listening to the directions from Buddy and watching as the shape is outlined. Then talk out loud as you look for the matching shape and color from the shapes you pass in the cave. Tap the gem of the correct shape and color to collect it.)

Note when you come across an upside-down shape, such as the triangle, it's still the same shape.

- *That one was tricky! That triangle was upside-down! We don't always see triangles like that. I'm glad I was paying attention!*
  (Talk out loud as you figure out that upside-down triangles are still triangles.)

Model sorting the gems collected based on their geometric properties. Talk out loud as you decide where to place the gems, based on their geometric properties, by touching and dragging them into the slots.

- *Now that we've collected all the gems, we'll have to help Buddy sort them into two groups. Can you help me decide which gem goes into which group ?Does this go into the triangle or the circle column?*
  (Model tapping on each gem and dragging it to the correct column in the gem box.)

Model recovering from a mistake while sorting.

- *Whoops! Buddy's right, that's not where the triangle goes. I see the outline of a three-sided shape with three corners (angles) in the other column. That looks like my triangle with three sides and three corners (angles). That's where the triangle goes.*
  (Point to the outline of the triangle in the right-side column as you count the sides and corners [angles]. Then count the sides and corners [angles] on your triangle gem.)

Allow children, or several volunteers, to have a turn playing *Buddy's Gem Hunt*.

3. Wrap-Up

Review the concepts covered in the challenge game—recognizing different shapes even when they are represented in different sizes and orientations, and matching and sorting shapes based on their geometric properties.

- *Let's think back to what we learned today. What happens when a shape is very big or very small? Is it still the same shape? How about when you are sorting shapes, how can you make sure you sort the same shapes together?*
  (Guide the discussion to shapes still being the same shape regardless of size. Encourage children to discuss the geometric properties of shapes as a way to tell how to sort shapes, as you did in *Buddy's Gem Hunt*.)

Computer Center

Bunny Ride

Skills

- Review numeral identification from 0 to 20
- Review counting from 0 to 20
- Review one-to-one correspondence from 0 to 20

Buddy's Gem Hunt

Skills

- Review identifying simple and challenging shapes (circle, triangle, square, pentagon)
- Review comparing size and orientation of shapes
- Review geometric properties of simple and challenging shapes (corner [angle], line, curve, and side)

Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Bunny Ride*** and ***Buddy's Gem Hunt.*** Children review math skills covered in the week.

Remind children to count out loud, identify, compare, and match shapes, and to talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Count with Allie*
- *Apple Picking*
- *Bug Catcher*
- *Huff-Puff-a-Tron*
- *Vegetable Patterns*
- *Vegetable Harvest*
- *Flower Garden*
- *Sketch-a-Mite*
- *Blast Off*
- *Bubble Pop*
- *Meatball Launcher*
- *Hide and Seek*

Hands-on Center

Number Act Out

Skills

- Review counting from 1 to 5
- Review one-to-one correspondence and cardinality from 1 to 5

Materials

- Number Act Out cards
- Classroom Number Line

Patterning Shapes

Skills

- Review simple and challenging shapes (circle, triangle, rectangle, square, rhombus)
- Review counting sides and corners (angles) of simple and challenging shapes
- Review identifying, creating, copying, and extending AB, ABB, and ABC patterns

Materials

- Foam shapes
- Foam shape pattern cards

Keep in Mind...

During **Center Time**, small groups or pairs of children play focus games **Number Act Out** and **Patterning Shapes**. Children review math skills covered in the week.

Additional games also available during this time:

- *Simple Shape Concentration*
- *NUMBO 0–5*
- *Pipe Cleaner Shapes*
- *OOPS! Number Line 0–10*
- *Fruit Patterns*
- *OOPS! Number Line 0–20*
- *NUMBO 1–20*
- *Dominoes*
- *Number Tree*
- *Unifix Pattern Play*
- *Fruit to Number Concentration*
- *Shape Match*

Video Co-viewing

Train Master (Curious George)

During a trip to the train station, George has to place trains in order. In this video George will help children review counting and identifying numerals from 5 to 9. As George plays "Train Master" for a day, he also will help children develop an understanding of the relative position and sequence of whole numbers, as well as review some simple shapes (triangles, rectangles).

Overview

During **Circle Time,** watch ***Train Master*** with children on the **Interactive Whiteboard** (IWB). Look and listen for key pause points (marked with ⏸ and a "beep"), and use them as opportunities to ask questions to get children talking about math.

Skills and other important points to cover

- Review counting sides of simple shapes: triangles and rectangles
- Review counting and reverse counting from 0 to 10
- Review numeral identification from 0 to 10

What you will need

- Interactive Whiteboard (IWB)
- Curious George: *Train Master* video (11:08 minutes)
- Classroom number line

Video Co-Viewing Activity

TIMING GOAL: 25 minutes

1. Warm Up

Invite all children to the IWB area to watch *Train Master* on the IWB.

Encourage children to describe the math—counting from 5 to 9, and shapes (triangles and rectangles)—they remember from the last time you watched Train Master.

- *Today we're going to watch Train Master, a video we saw a few weeks ago. Do you remember the math we detected while watching that video?*
  (Encourage children to talk about the math they remember from the video, for instance counting from 5 to 9, and the shapes of the sandwiches [triangle and rectangle].)

Remind children you will pause the video to talk about the math they see.

Start the video.

2. Video Co-Viewing (with Pause Points)

1:20 — Bill is talking on the phone and flying a kite while waiting for his train at the train station.

Remind children a train schedule tells the times that trains arrive at and leave stations. Encourage children to count out loud from 5 to 9 while you point to the train numerals on the train schedule. Encourage children to identify other numerals on the schedule in the times the trains arrive and leave the station.

- *Math Detectives, who remembers what a train schedule is? A train schedule tells you the time a train will arrive at and leave a station. What time did Bill say he's arriving?*
  (Point to the train schedule focusing on the number 7 train.)

- *Do you see the train numbers on the schedule? Let's say the numbers of the trains on the schedule. What other numerals do you see on this train schedule?*
  (Model counting from 5 to 9, pointing to numerals on the schedule. Encourage children to talk about other numerals on the train schedule in the times listed. Point to the numerals the children name.)

Ask children to predict what will happen next in the video.

Start the video.

2. 4:22 — The Station Master and his brother are holding up a triangle sandwich and a rectangle sandwich.

Identify the shapes of the sandwiches (triangle and rectangle). Encourage children to count how many sides each sandwich has.

- *Let's look at these sandwiches. Which Math Detective can tell me the shapes of the sandwiches?*
  (Guide the discussion to identify and talk about the triangular and rectangular shapes of the sandwiches.)

- *How many sides does each sandwich have altogether? Let's start with the triangle sandwich: Who can count number of sides for me?*
  (Trace each side of the triangle and rectangle sandwiches as you encourage children to count out loud. Reinforce the concept of "altogether.")

Think out loud while you compare and contrast the sandwiches' shapes (triangle and rectangle), focusing on the number of sides of each shape, the number of corners (angles) of each shape, and that neither shape has any curves.

- *Does the triangle sandwich have more sides than the rectangle sandwich, or fewer than the rectangle sandwich? What about corners (angles)? Does either shape have a curve?*
  (Model comparing and contrasting the two sandwiches using "more than/fewer than" language. Guide the discussion to talk about how the sandwiches have sides that are straight lines, with no curves.)

Ask children to predict what will happen next in the video.

Resume video.

3. 5:11 — The number 8 train is ahead of the number 7 train. Trains numbers 7, 8, and 9 are out of order.

Ask children to identify what is "wrong" about the order of the trains and to reorder the trains in the correct order, using the classroom number line as support. Encourage children to describe why the number 8 train should be after the number 7 train.

- *Hmm … Math Detectives, I see something odd here with the trains. What is it? Where should the number 8 train be? Why?*
  (Guide discussion to talk about identifying the number 8 train that is out of order. Talk about how 8 comes after 7 and 8 is more than 7, so the number 7 train should be before the number 8 train. Point to 7 and 8 on number line.)

Encourage children to read the numerals on the trains from left to right, and identify what kind of counting this is—reverse counting. Then reverse count from 10 to 0 using the classroom number line.

- *Let's pretend the number 8 train is here. Now, let's read the numerals from left to right. Nine, eight, seven. What kind of counting is this?*
  (Lead children in reverse counting from 9 to 7. Help children identify that they are reverse counting.)

- *Before we keep watching the video, let's reverse count starting from 10, using our number line.*
  (Encourage children to reverse count from 10 to 0. Point to the numerals on the number line.)

Ask children to predict what will happen next in the video.

Resume video.

4. 10:30 — Trains 5 to 9 are in numerical order, followed by train number 356.

Encourage children to talk about the order of the trains. Briefly discuss the train with the large number.

- *Look at all these trains! What can you tell me about the order of these trains?*
  (Guide discussion to talk about the order of the trains. Encourage children to forward and reverse count the order of the trains.)

- *Do you remember the number 100, when George went to the donut shop? Well, 356 is even bigger than 100! That's a large number!*
  (Briefly compare 100 from the Zero to Donuts video to 356. Talk about how 356 is an even larger number.)

Ask children to predict what will happen next in the video.

Resume video. End 11:08

3. Wrap-Up.

Review the concepts covered in the lesson—identifying numerals from 0 to 10, forward and reverse counting from 0 to 10, shapes—triangles and rectangles—and geometric properties of shapes—sides, corners (angles) and curves.

- *Let's think back to what we learned today. Who wants to share about what we learned?*
  (Encourage children to tell you what they remember from the lesson. Guide discussions to talk about numerals from 0 to 10, focusing on 5 to 9, reverse counting, and shapes— triangles and rectangles—and their geometric properties—sides, corners [angles], and curves.)

Remind children as Math Detectives they should always listen carefully and keep their eyes open to find math all around!

Computer Center

Fair Shares

Skills

- Review counting from 1 to 12
- Review one-to-one correspondence and cardinality from 1 to 12
- Review subitizing from 1 to 10

The Great Shape Race

Skills

- Review constructing and deconstructing simple and challenging shapes
- Review comparing size and orientation of simple and challenging shapes
- Review geometric properties of simple and challenging shapes (side, corner [angle], curve)

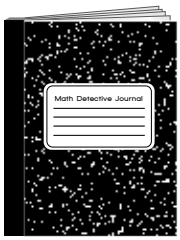
Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Fair Shares*** and ***The Great Shape Race***. Children review math skills covered in the week.

Remind children to count out loud, construct and compare shapes together, and talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Count with Allie*
- *Apple Picking*
- *Bug Catcher*
- *Huff-Puff-a-Tron*
- *Vegetable Patterns*
- *Vegetable Harvest*
- *Flower Garden*
- *Sketch-a-Mite*
- *Blast Off*
- *Bubble Pop*
- *Meatball Launcher*
- *Hide and Seek*
- *Bunny Ride*
- *Buddy's Gem Hunt*



Math Detective Journal

Math Detective Journal

During Math Detective Journal time, help children make AB, ABB, and ABC patterns using shape stickers and the shape sticker pattern cards. After creating patterns with stickers, children draw their own patterns in their Journals. Children share with each other the patterns they make and draw by showing and naming the shapes, then asking friends to name the next shape in the pattern.

Overview

During **Small Group Time**, review s**hapes** and **geometric properties** with children by helping them identify, create, copy, and extend AB, ABB, and ABC patterns in their **Math Detective Journals**, using shape stickers.

Skills and other important points to cover

- Review identifying, creating, copying, and extending AB, ABB, and ABC patterns
- Review identifying missing core elements in AB, ABB, and ABC patterns
- Review simple and challenging shapes (circle, triangle, rectangle, square, rhombus)

What you will need

- Math Detective Journals (one per child)
- Shape stickers
- Shape sticker pattern cards (AB, ABB, ABC)
- Blank paper and pen (for teacher)
- Crayons

Math Detective Journal

TIMING GOAL: 20 minutes

1. Warm Up

Invite children to the Small Group area to review AB, ABB, and ABC patterns. Encourage children to talk about patterns seen in the patterning shapes activities from the previous week (with the foam shapes).

- *Last week, during Math Detective Journal time, we played Patterning Shapes. We made AB, ABB, and ABC patterns using foam shapes. Do you remember any patterns you made with the foam shapes?*
  (Review the patterns children made with the foam shapes—for example, "circle-triangle-triangle." Guide discussion to talk about AB, ABB, and ABC patterns.)

Encourage children to create an ABB pattern using "pat lap" and "clap." Encourage children to identify the core elements as they act them out.

- *Let's practice creating some patterns. Can you act out an ABB pattern with "pat lap" and "clap?"*
  (Help children create a pat lap–clap–clap pattern, and name it using A and B terminology.)

Encourage children to create an ABC pattern using clap–pat lap–stomp. Encourage children to identify the core elements as they act them out.

- *Now let's create an ABC pattern with the core elements clap–pat lap–and stomp. When you repeat the pattern, say A, B, C as you act it out.*
  (Help children create the clap–pat lap–stomp pattern, and name it using A, B, and C terminology.)

2. Introduce Shape Sticker Patterns

Review identifying and naming the different patterns on the shape sticker pattern cards.

- *Do you remember these pattern cards? What pattern do you see? Can you name the core elements?*
  (Help children talk about and name the core elements in the patterns in the shape sticker pattern cards.)

Model making an ABB sticker pattern from a shape sticker pattern card, and ask children to recreate the same pattern in their Journals.

- *Just like we did a few weeks ago, you're going to create more AB, ABB, and ABC patterns in your Journals using different-shaped stickers, but let's try one together first using this shape pattern card to help us. Hexagon, triangle, triangle, hexagon, triangle, triangle—what kind of pattern is this?*
  (Model making the ABB pattern hexagon–triangle–triangle–hexagon–triangle-triangle on a sheet of paper. Hold it up for all the children to see. Point and name each core element of the pattern.

Encourage children to identify the pattern using A and B terminology.)

- *Can you extend the pattern? What comes next? Now make this ABB pattern in your Journal.*
  (Help children copy the pattern into their Journals. Encourage children to name the core elements out loud.)

Model creating an ABC sticker pattern (square, rectangle, triangle), but with a missing core element. Draw a line in the space for the missing core element. Think out loud to help children identify the missing core element.

- *Now look at this shape pattern. It's an ABC pattern, but something is missing. Square, rectangle, triangle, square, _____, triangle. What core element is missing from this pattern?*
  (Model making the ABC pattern—square, rectangle, triangle—on a sheet of paper. Hold it up for all the children to see. Help children identify the missing core element and then copy the complete pattern into their Journals. Encourage children to name the core elements out loud.)

Encourage children to copy or extend patterns from the shape sticker pattern cards or, if they are able, to create their own AB, ABB, and ABC patterns in their Journals.

- *Can you think of another AB, ABB, or ABC shape pattern? Try creating that pattern by yourselves with the stickers in your Journals. If you want, you can copy the patterns on the shape pattern cards.*
  (Encourage children to talk about varoius shape patterns. Help children create AB, ABB, and ABC patterns using stickers in their Journals.)

Encourage children to draw their own patterns by copying or extending patterns from the shape sticker pattern cards or, if they are able, to create their own AB, ABB, and ABC patterns in their Journals.

- *Can you try drawing AB, ABB, and ABC shape patterns? Try drawing the pattern by yourselves in your Journals. If you want, you can copy the patterns on the shape pattern cards.*
  (Help children draw AB, ABB, and/or ABC patterns in their Journals.)

3. Wrap-Up

Encourage children to share and practice naming the core elements of their patterns out loud with a partner.

- *Now let's share our patterns with our neighbors. When you show your patterns to your neighbors, point and say each shape's name.*
  (Help children share their patterns with a partner and name the core elements in their patterns as they point.)
  geometric properties.)

Easy Game Play

Fair Shares (Curious George)

George is training dogs. Help him share the dog treats fairly. Sometimes there are two dogs and two treats, other times there are two dogs and four treats. While sharing treats, the children will review how to recognize the amount of treats without having to count them (subitizing) and counting from 1 to 12.

Overview

During **Small Group Time,** demonstrate how to play ***Fair Shares*** on the **Interactive Whiteboard** (IWB). Use game play as an opportunity to practice **counting** and **one-to-one correspondence** as well as **subitizing** as you call on individual children to try out the game on the IWB.Remind children of **basic game play rules.**

Skills and other important points to cover

- Review counting from 1 to 12
- Review one-to-one correspondence and cardinality from 1 to 12
- Review subitizing from 1 to 10

What you will need

- Interactive Whiteboard (IWB)
- Curious George: *Fair Shares*

Easy Game Play

TIMING GOAL: 10 minutes

1. Warm Up

Invite children to the IWB area and review counting from 1 to 12 and subitizing—recognizing an amount just by looking at it—from 1 to 5, using your fingers.

- *Let's get ready to play our game by counting from 1 to 12 out loud together.*
  (Encourage children to count out loud from 1 to 12.)

- *Remember when we used our foam die to quickly figure out how many dots there were altogether? Let's do that again, but instead of using the die, I'm going to use my fingers. Can you say how many fingers I have up without counting, just by looking and remembering that you've seen this many before?*
  (Encourage children to look closely at your hand as you hold up 2 fingers, then 1 finger, then 3 fingers, and encourage them to say how many there are altogether quickly and without counting each finger.)

2. Introduce Easy Game

Remind children of basic game play rules—only one child can touch the IWB at a time, and they must take turns playing.

- *Today we are going to play another game on the Interactive Whiteboard! But we have to be careful, only one of us can touch the screen at a time, and we have to take turns.*
  (Model how touching the board makes things happen; load the game Fair Shares.)

Think out loud as you model how to play Fair Shares—by figuring out how many bones there are altogether, then how many dogs, then a strategy for distributing the bones fairly, one at a time.

- *Now, let's play Fair Shares. We can help George share dog bones with his dogs in a way that is fair for each dog. First I want to figure out how many bones there are altogether. How can I do that? How about figuring out how many dogs there are?*
  (Talk out loud as you encourage children to subitize or count the bones and dogs.)

- *Now, how can I make sure I give each dog the same number of bones?*
  (Encourage children to provide strategies for distributing the bones fairly. Guide the discussion toward distributing one bone at a time to each dog.)

Walk children through a couple of examples. Model touching and dragging the bones to the dogs' noses. Talk out loud as you check to make sure each dog has the same number of bones before you tap the whistle to confirm you distributed the bones fairly.

- *OK, Math Detectives, let's distribute the bones to the dogs!*
  (Model touching each dog bone and dragging it to each dog's nose one-by-one until the dogs each have the same number of bones resting on their noses.)

- *How can we check if each dog has the same amount? We can look at each stack of bones on the dogs' noses and think about if the stacks look the same, and then we can count the bones in each stack to check if they are the same. Then we can tap the whistle to double check we distributed the bones fairly!*
  (Encourage children to look at each of the stacks to decide if they are the same, then encourage them to count by pointing to each bone as you count out loud. Tap the whistle to confirm you distributed the bones fairly.)

Model how to recover from a mistake.

- *Whoops! That wasn't fair. Let's divide the bones up again. This time, let's count how many we have before we start and then check the number of bones each dog has as we work.*
  (Model distributing the bones unfairly. Then count out loud with the children as you figure out how many bones there are altogether. Then periodically count the bones on each dog's nose to keep track of how many bones each dog has so far.)

Remind children that, during Center Time, they will play Fair Shares with a partner on a computer using a mouse.

- *During Computer Center Time, you can play this game again with a partner! But instead of touching the screen, you'll use the mouse to click on the bones.*

3. Wrap-Up

Review counting from 1 to 12, subitizing—knowing how many objects there are altogether without counting—and checking how many objects there are altogether by counting.

- *All right, Math Detectives! Let's think about what we learned today. Who can tell me something about the math we learned today?*
  (Guide the discussion to review counting from 1 to 12, subitizing or figuring out the number of dogs bones without counting, and counting to check that you distributed the dog bones fairly.)

- *Remember you can always count to check how many items you have altogether. Let's count from 1 to 12 together!*
  (Encourage children to count from 1 to 12.)

Hands-on Center

Fruit to Number Concentration

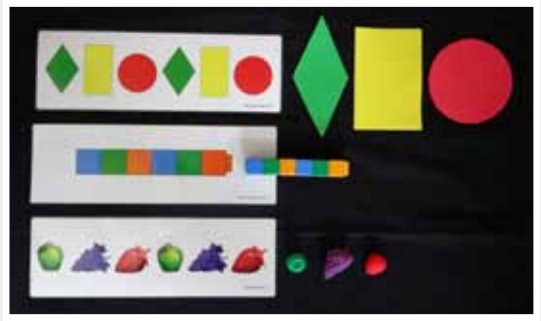
Skills

- Review subitizing from 1 to 10
- Review counting from 1 to 10
- Review one-to-one correspondence, numeral identification, and cardinality from 1 to 10

Materials

- Fruit to number concentration cards

Pattern Mania



Skills

- Review identifying, creating, extending, and copying AB, ABB, and ABC patterns
- Review identifying missing core elements in AB, ABB,and ABC patterns
- Review simple and challenging shapes (circle, triangle, rectangle, square, rhombus)

Materials

- Plastic fruit
- Fruit pattern cards
- Unifix cubes
- Unifix cube pattern cards
- Foam shapes
- Foam shape pattern cards

Keep in Mind...

During Center Time, small groups or pairs of children play focus games Fruit to Number Concentration and Pattern Mania—a collection of three of the patterning activities children are familiar with from previous weeks (Fruit Patterns, Unifix Pattern Play, and Patterning Shapes). Children review math skills covered in the week.

Additional games also available during this time:

- *Simple Shape Concentration*
- *NUMBO 0–5*
- *Pipe Cleaner Shapes*
- *OOPS! Number Line 0–10*
- *Fruit Patterns*
- *OOPS! Number Line 0–20*
- *NUMBO 1–20*
- *Dominoes*
- *Number Tree*
- *Unifix Pattern Play*
- *Shape Match*
- *Number Act Out*
- *Patterning Shapes*

Computer Center

Fair Shares

Skills

- Review counting from 1 to 12
- Review one-to-one correspondence and cardinality from 1 to 12
- Review subitizing from 1 to 10

The Great Shape Race

Skills

- Review constructing and deconstructing simple and challenging shapes
- Review comparing size and orientation of simple and challenging shapes
- Review geometric properties of simple and challenging shapes (side, corner [angle], curve)

Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Fair Shares*** and ***The Great Shape Race***. Children review math skills covered in the week.

Remind children to count out loud, construct and compare shapes together, and talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

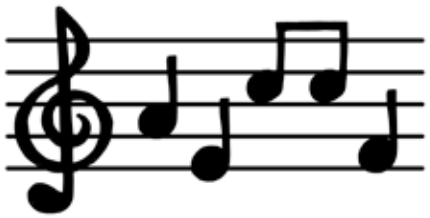
Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Count with Allie*
- *Apple Picking*
- *Bug Catcher*
- *Huff-Puff-a-Tron*
- *Vegetable Patterns*
- *Vegetable Harvest*
- *Flower Garden*
- *Sketch-a-Mite*
- *Blast Off*
- *Bubble Pop*
- *Meatball Launcher*
- *Hide and Seek*
- *Bunny Ride*
- *Buddy's Gem Hunt*

Math Circle Routine

Fruit to Number Concentration

Use this concentration game to help children match sets of objects (fruit) to the numerals they represent by subitizing and counting. To introduce the game, read the numerals on the cards from 1 to10 and help children identify the number of fruit pieces on each card. Then, place the fruit cards face down in one row and the numeral cards in another. Model flipping over two cards and thinking out loud about whether or not the cards are a match and how you know. Model finding a pair that matches and a pair that does not match—flipping the cards back over and allowing the next person a turn. Extend the activity by having children count out plastic fruit that corresponds with the numerals on the concentration cards.



"Head, Shoulders, Knees, and Toes" Song

Children sing a traditional early childhood song that focuses on body parts and provides an opportunity for children to count those parts.

Overview

During **Circle Time,** demonstrate how to play **Fruit to Number Concentration** to review **one-to-one correspondence, numeral identification,** and **cardinality.** In support of **counting,** children sing **"Head, Shoulders, Knees, and Toes"** to **count** their body parts.

Skills and other important points to cover

- Review subitizing from 1 to 10
- Review counting from 1 to 10
- Review one-to-one correspondence, numeral identification, and cardinality from 1 to 10

What you will need

- Fruit to number concentration cards
- Plastic fruit

Math Circle Routine

TIMING GOAL: 10 minutes

1. Warm Up

Invite all children to the Circle Time area.

Have children review counting from 1 to 10; assist by holding up the correct number of fingers, but try not to count out loud with the children.

- *Math Detectives, you've become excellent counters. Can you count from 1 to 10? I'll hold up fingers to help you, but I won't count out loud with you.*
  (Assist the children in counting from 1 to 10 with your fingers, but do not count out loud with them.)

Show children different quantities of the plastic fruit for just a few seconds each. Ask children to identify the number of pieces of fruit without counting, then count to confirm their answers.

- *Remember yesterday we tried to figure out how many bones George had to distribute to the dogs without counting first? Let's see how many pieces of fruit I have without counting. Then we'll count to check our answers.*
  (Hold up groups of strawberries, bananas, or other fruit for just a few seconds. Encourage children to subitize the number of fruit, and then count to check their answers.)

2. Play Fruit to Number Concentration

Note: Depending on children's skill level, you may want to take out numeral cards 6 to 10 and the corresponding fruit cards to reduce the size of the deck.

Review how to play the card game Fruit to Number Concentration. Hold up each numeral card to review numerals 1 to 10. Then, hold up each fruit card and identify how many pieces of fruit are on each card. Encourage children to talk about subitizing or figuring out how many pieces of fruit there are by looking, and then counting the fruit to check their answers.

- *Let's count from 1 to 10 using the numeral cards in this game.*
  (Model counting from 1 to 10 and hold up the corresponding numeral cards. Encourage children to count out loud with you.)

- *Let's look at the fruit cards. How many pieces of fruit are on this card? Can you tell me without counting?*
  (Guide the discussion to subitizing and then counting to check your answer. Then hold up each card, reviewing the number of pieces of fruit on each card from 1 to 10.)

Review the rules and setup of the game. Like Shape Concentration, the goal is to flip over two cards that match. For this game, matching requires a numeral card and the fruit card with the corresponding number of pieces of fruit on it. Place the cards face-down in two rows—the numeral cards in one row, the fruit cards in the other.

- *Do you remember how to play the game? First, mix the cards and put them with the fruit and numeral sides down in two different rows.*
  (Align the cards in two even rows on the carpet in front of you. Put all of the numeral cards in one row and all of the fruit cards in another row.)

- *When it's your turn, turn over two cards, one from each row, and say the numeral or the number of pieces of fruit on the cards. Then figure out if they match. To get a match, you have to have a numeral card and the fruit card that has that many pieces of fruit on it.*
  (Model turning cards face up, reading numerals or numbers of pieces of fruit, and think out loud as you figure out if the cards match or do not match. Focus on the numeral and arrangement of the fruit—sometimes it's the same configuration as dots on a die, other times it's not.)

- *If the cards match, pick them up and put them in front of you. If they don't match, turn them back over, but try to remember them for your next turn!*
  (Model picking up two matching cards and two non-matching cards.)

To extend the activity, have children place the corresponding number of pieces of plastic fruit next to the numeral cards.

- *Remember last time we also used the plastic fruit with these cards? Let's do that again. I flipped over the numeral 7. Who thinks they can use our plastic fruit to count out seven pieces of fruit to go with my numeral 7 card?*
  (Choose a volunteer and think out loud as you help her count seven pieces of fruit to go with the numeral 7 card, reinforcing that the last number you count is how many pieces of fruit there are altogether.)

Remind children that the game will be available during Center Time.

3. Sing "Head, Shoulders, Knees, and Toes"

"Head, Shoulders, Knees, and Toes" Lyrics
Head, shoulders, knees, and toes, knees and toes Head, shoulders, knees, and toes, knees and toes Eyes and ears and mouth and nose Head, shoulders, knees, and toes, knees and toes (Repeat, getting faster each time)

Review singing the "Head, Shoulders, Knees, and Toes" song with the children. Practice singing the song faster each time you sing it.

- *Do you remember singing "Head, Shoulders, Knees, and Toes" a few weeks ago? We're going to sing it again today. Let's do the motions, too—touching our heads, shoulders, knees, and toes.*
  (Lead children in singing the song and going through the motions of touching the head, shoulders, knees, and toes.)

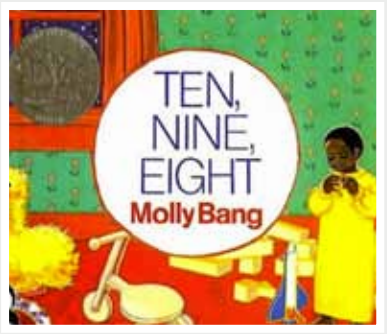
- *Now let's try something different. Let's try singing it a little faster. Try to sing and keep up with the motions at the same time.*
  (Lead children in singing the song faster and faster each time. Encourage children to keep up to the tempo of the song.)

Count how many heads and toes you have. Pointing to each as you count.

- *How many heads do we have, Math Detectives? Let's count! How many toes?*
  (Point to your head as you count, reinforcing that the last number you count is how many heads you have altogether. Then count how many toes you have altogether.)

Guided Book Reading

Ten, Nine, Eight



As a child winds down with her father before bedtime, she is taken on a familiar journey around her room. Join her with your Math Detectives as she counts down from 10 to 1, using comforting objects and actions.

Overview

During **Circle Time**, read ***Ten, Nine, Eight*** with children. As you read, review and talk about **reverse counting from 10 to 1**. Key pause points – marked with a ⏸ in the teacher's guide and book pages— are included as opportunities to ask questions to get children talking about reverse counting.

Skills and other important points to cover

- Review reverse counting from 10 to 1
- Review one-to-one correspondence and cardinality from 1 to 10
- Review counting from 1 to 10

What you will need

- *Ten, Nine, Eight* (book)
- Classroom number line

Guided Book Reading

TIMING GOAL: 15 minutes

1. Warm Up

Invite children to the Circle Time area to read the book, *Ten, Nine, Eight.*

Review reverse counting from 10 to 0 using the classroom number line. Encourage children to start with 10 and count in reverse to 0 as you point to each numeral on the number line.

- *We use our number line a lot to help us count, but this time I want to count in reverse from 10 to 0. Are there any Math Detectives here who can count in reverse from 10 to 0 with me?*
  (Point to each numeral on the number line as you encourage children to count in reverse from 10 to 0 with you.)

Hold up the *Ten, Nine, Eight* book and think out loud while you ask children to remember what the story was about.

- *Today, we're going to read Ten, Nine, Eight. We've read this book before. Who remembers what this book is about? Who remembers some math we learned the last time we read this book?*
  (Hold up the book for them to see. Allow children to share their thoughts. Guide the discussion to reverse counting.)

2. Guided Book Reading (with Pause Points)

Pause at pages 1–2:

Point to the ten small toes as you have children count them out loud with you. Think out loud as you figure out you also have ten fingers.

- *Let's count the ten toes out loud together.*
  (Point to each toe while you count from 1 to 10 with the children.)

- *Hmm … Who remembers something else we have ten of? They've been helping us count these past few weeks!*
  (Allow children the opportunity to respond. If they are having trouble, prompt them by holding up your two hands and wiggling your fingers.)

Pause at pages 7–8:

Point to each of the seven empty shoes as you encourage children to count out loud on their own.

- *OK, Math Detectives, now let's check to see if there are seven shoes lined up. How can we do that?*
  (Point to each shoe while children count out loud.)

Ask children to predict what numeral will be on the next page if you're counting in reverse. (6)

- *Before I turn the page, does anyone know what numeral will be on the next page if we are counting in reverse?*
  (Call on volunteers to predict what numeral will be next. Point to the classroom number line if no child offers an answer.)

Pause at page 11–12:

Point to the five buttons on the child's nightgown and ask for a volunteer to come up and count them.

- *Who wants to come up and count the buttons on her nightgown?*
  (Have a volunteer come up and count the buttons, encouraging her to point to each button as she counts out loud. Reinforce that the last number counted is how many buttons there are altogether.)

Ask children to predict what numeral will be on the next page if you're counting in reverse. (4)

- *Like we did before, does anyone know what numeral will be on the next page if we're counting in reverse order?*
  (Call on volunteers to predict what numeral will be next. Point to the classroom number line if no child offers an answer.)

3. Wrap-Up

Encourage children to start with 10 and count in reverse to 1, pointing to each numeral on the number line.

- *The girl in our book counted in reverse from 10 to 1 while she looked at different things around her room before bedtime. Are there any Math Detectives who would like to come up and count in reverse for us, using the number line if you need help?*
  (Call up volunteers to practice counting in reverse from 10 to 1 independently.)

Computer Center

Fair Shares

Skills

- Review counting from 1 to 12
- Review one-to-one correspondence and cardinality from 1 to 12
- Review subitizing from 1 to 10

The Great Shape Race

Skills

- Review constructing and deconstructing simple and challenging shapes
- Review comparing size and orientation of simple and challenging shapes
- Review geometric properties of simple and challenging shapes (side, corner [angle], curve)

Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Fair Shares*** and ***The Great Shape Race***. Children review math skills covered in the week.

Remind children to count out loud, construct and compare shapes together, and talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Count with Allie*
- *Apple Picking*
- *Bug Catcher*
- *Huff-Puff-a-Tron*
- *Vegetable Patterns*
- *Vegetable Harvest*
- *Flower Garden*
- *Sketch-a-Mite*
- *Blast Off*
- *Bubble Pop*
- *Meatball Launcher*
- *Hide and Seek*
- *Bunny Ride*
- *Buddy's Gem Hunt*

Hands-on Center

Fruit to Number Concentration

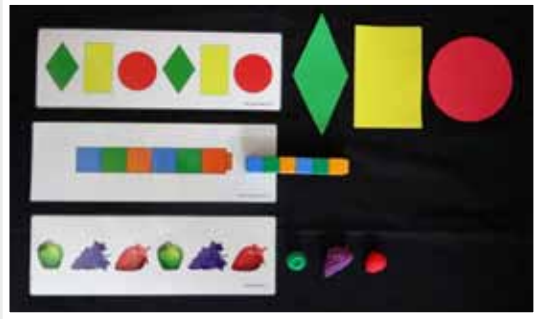
Skills

- Review subitizing from 1 to 10
- Review counting from 1 to 10
- Review one-to-one correspondence, numeral identification, and cardinality from 1 to 10

Materials

- Fruit to number concentration cards

Pattern Mania



Skills

- Review identifying, creating, extending, and copying AB, ABB, and ABC patterns
- Review identifying missing core elements in AB, ABB,and ABC patterns
- Review simple and challenging shapes (circle, triangle, rectangle, square, rhombus)

Materials

- Plastic fruit
- Fruit pattern cards
- Unifix cubes
- Unifix cube pattern cards
- Foam shapes
- Foam shape pattern cards

Keep in Mind...

During Center Time, small groups or pairs of children play focus games Fruit to Number Concentration and Pattern Mania—a collection of three of the patterning activities children are familiar with from previous weeks (Fruit Patterns, Unifix Pattern Play, and Patterning Shapes). Children review math skills covered in the week.

Additional games also available during this time:

- *Simple Shape Concentration*
- *NUMBO 0–5*
- *Pipe Cleaner Shapes*
- *OOPS! Number Line 0–10*
- *Fruit Patterns*
- *OOPS! Number Line 0–20*
- *NUMBO 1–20*
- *Dominoes*
- *Number Tree*
- *Unifix Pattern Play*
- *Shape Match*
- *Number Act Out*
- *Patterning Shapes*

Challenge Game Play

The Great Shape Race (The Cat in the Hat)

Nick and Sally find themselves in a shape race! Guide them along the tracks as they use their shovel to collect shapes, and help them construct new shapes to patch holes in a bridge! As children collect shapes, they will review identifying and constructing simple and challenging shapes.

Overview

During **Circle Time**, play ***The Great Shape Race*** with children on the **Interactive Whiteboard** (IWB). As you demonstrate how to play the game, use this opportunity to talk about **identifying** and **constructing simple** and **challenging shapes,** as well as the **size and orientation of shapes**.

Skills and other important points to cover

- Review constructing and deconstructing simple and challenging shapes
- Review comparing size and orientation of simple and challenging shapes
- Review geometric properties of simple and challenging shapes (side, corner [angle], curve)

What you will need

- Interactive Whiteboard (IWB)
- The Cat in the Hat: *The Great Shape Race*
- Triangle foam shape
- Rectangle foam shape

Challenge Game Play

TIMING GOAL: 25 minutes

1. Warm Up

Invite children to the IWB area to play *The Great Shape Race*, a new game on the IWB.

Review orientation of shapes—that a shape is still the same shape whether it is right-side up, or upside-down, or lying on its side. Hold up the foam shape triangle and demonstrate that, regardless of orientation, there are three sides and three corners (angles), so it is always a triangle.

❞ *Remember when we played* Buddy's Gem Hunt *last week, there were shapes that were right-side up and upside-down, but they were still the same shape. Like this triangle, as long as it has three sides and three corners (angles) it is still a triangle.*
(Encourage children to count the sides and the corners [angles] of the triangle as you rotate it. Emphasize that regardless of orientation there are three sides and three corners [angles], so it's always a triangle.)

Show children the foam shape rectangle and ask them to identify it by name, and describe the geometric properties—four sides (two long and two short), and four corners [angles]—and how the properties remain the same regardless of orientation, so it's always a rectangle.

❞ *What about this shape? Who can tell me the name of this shape? How many sides does it have? How many corners (angles)? What if I turn it this way?*
(Encourage children to name the rectangle and describe the four sides—two long, two short,—and the four corners [angles], and how the properties remain the same regardless of orientation, so it's always a rectangle.)

2. Introduce Challenge Game

Model playing *The Great Shape Race* by demonstrating how to use your finger to move Nick and Sally toward a shape to pick it up. Talk out loud as you identify the shapes you are picking up.

❞ *Let's play* The Great Shape Race *together. I'll get us started. The Cat in the Hat told us we needed to pick up shapes to patch the bridge. We have to use our finger to move Nick and Sally toward the shape to pick it up. Wow, that was a triangle. I know because it has three sides and three corners (angles). That one is also a triangle, but it was stuck upside down in the dirt.*
(Model moving Nick and Sally up and down the screen by dragging your finger where you want them to go. Once you have Sally and Nick in front of a shape, they will run over it to scoop it up and into the trailer. Model naming the shapes as you scoop them up.)

Model using the shape outlines on the trailer to help you figure out which shapes you should pick up next. Talk out loud as you identify the shapes and their geometric properties and then look for a match on the track.

- *Let's practice collecting the right shapes to match these outlines. Here is a triangle outline with the long side on the bottom. Do you see that kind of triangle on the ground? I see one, so I am going to slide my finger over to where it is so that Nick and Sally can pick it up.*
  (Model touching the screen and sliding your finger to move Nick and Sally with their shovel to the shape you want.)

Model identifying the shapes you collected after The Cat in the Hat drops them at the foot of the bridge. Talk out loud as you figure out the geometric properties of the shapes you need to patch the hole in the bridge.

- *Now that we've collected all the shapes, we have to use them to fill the hole in the bridge. Let's name the shapes The Cat in the Hat dropped off for us. Now, what shape is that hole in the bridge? How many sides does it have? How many corners (angles). Do you see a shape we collected that matches it, so we can use it to patch the hole?*
  (Model tapping on and sliding the correct shapes to fill the hole in the bridge.)

Model recovering from a mistake while patching the bridge

- *Whoops, that's not the right shape. Let's look at the number of sides and corners (angles) of the hole in the bridge. Now, let's look at our shapes and count the sides and the corners (angles) so we can find one that fits!*
  (Point to the sides and corners [angles] of the shapes as you count out loud.)
  Allow children, or several volunteers, to have a turn playing *The Great Shape Race*

3. Wrap-Up

Review the concepts covered in the challenge game—recognizing shapes even when they are represented in different orientations and sizes, and matching shapes based on their geometric properties. Use the foam shape rectangle to demonstrate that, regardless of orientation, it is still a rectangle.

- *Let's think back to what we learned. We learned that shapes are the same even if they are turned upside-down, or sideways. Can you tell me what this shape is called if it is like this, with the long side on the bottom? And what is it called if the short side is at the bottom?*
  (Hold up the rectangular foam shape with the long side at the bottom, and then shift it so that the shorter side is at the bottom. Model using descriptive language like lines or sides and corners [angles] to describe the shape, and demonstrate how the shape is a rectangle no matter how it is oriented.)

Computer Center

Fair Shares

Skills

- Review counting from 1 to 12
- Review one-to-one correspondence and cardinality from 1 to 12
- Review subitizing from 1 to 10

The Great Shape Race

Skills

- Review constructing and deconstructing simple and challenging shapes
- Review comparing size and orientation of simple and challenging shapes
- Review geometric properties of simple and challenging shapes (side, corner [angle], curve)

Keep in Mind...

During **Computer Center Time**, pairs of children play focus games ***Fair Shares*** and ***The Great Shape Race***. Children review math skills covered in the week.

Remind children to count out loud, construct and compare shapes together, and talk to each other about the math while playing the games. Encourage partner game play, and help children focus on the math in the games.

Additional games also available during this time:

- *Crystals Rule*
- *Ribbit*
- *Count with Allie*
- *Apple Picking*
- *Bug Catcher*
- *Huff-Puff-a-Tron*
- *Vegetable Patterns*
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- *Sketch-a-Mite*
- *Blast Off*
- *Bubble Pop*
- *Meatball Launcher*
- *Hide and Seek*
- *Bunny Ride*
- *Buddy's Gem Hunt*

Hands-on Center

Fruit to Number Concentration

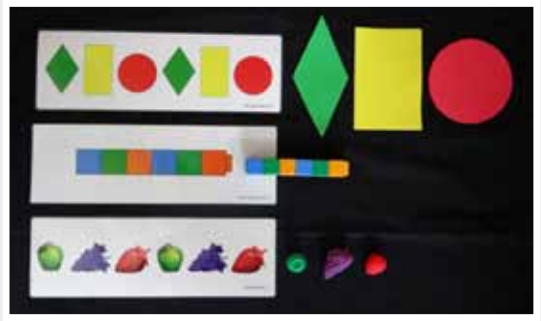
Skills

- Review subitizing from 1 to 10
- Review counting from 1 to 10
- Review one-to-one correspondence, numeral identification, and cardinality from 1 to 10

Materials

- Fruit to number concentration cards

Pattern Mania



Skills

- Review identifying, creating, extending, and copying AB, ABB, and ABC patterns
- Review identifying missing core elements in AB, ABB,and ABC patterns
- Review simple and challenging shapes (circle, triangle, rectangle, square, rhombus)

Materials

- Plastic fruit
- Fruit pattern cards
- Unifix cubes
- Unifix cube pattern cards
- Foam shapes
- Foam shape pattern cards

Keep in Mind...

During Center Time, small groups or pairs of children play focus games Fruit to Number Concentration and Pattern Mania—a collection of three of the patterning activities children are familiar with from previous weeks (Fruit Patterns, Unifix Pattern Play, and Patterning Shapes). Children review math skills covered in the week.

Additional games also available during this time:

- *Simple Shape Concentration*
- *NUMBO 0–5*
- *Pipe Cleaner Shapes*
- *OOPS! Number Line 0–10*
- *Fruit Patterns*
- *OOPS! Number Line 0–20*
- *NUMBO 1–20*
- *Dominoes*
- *Number Tree*
- *Unifix Pattern Play*
- *Shape Match*
- *Number Act Out*
- *Patterning Shapes*