Early Learning in Mathematics

moving up!

Curriculum Sampler

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Program Overview

Early Learning in Mathematics is a kindergarten level mathematics curriculum aligned to the Common Core State Standards in Mathematics. It is designed to develop essential foundational knowledge and conceptual understanding of early mathematical concepts in young children. The curriculum was developed through a grant award from the U. S. Department of Education, Institute of Educational Sciences, and designed for use with a full range of learners in typical kindergarten classrooms. It has been field tested since 2005 in kindergarten classrooms in the Pacific Northwest and Texas and revised based on teacher feedback.

Early Learning in Mathematics includes daily 15-minute calendar lesson activities, as well as 120 forty-five minute math lessons designed for whole class instruction. The curriculum is organized across four priority math strands: numbers and operations, geometry, measurement, and vocabulary.

The 120 *Early Learning in Mathematics* lessons are divided into 4 quarters. The scope and sequence of the curriculum exposes children to numbers through 100 with the goal of mastery of numbers 1-20. In numbers and operations, children learn to make magnitude comparisons (numbers that are more than or less than other numbers), add and subtract within 5, and solve simple addition and subtraction story problems. In geometry, common two- and three-dimensional shapes and their attributes are taught and children analyze, compare, create, and compose shapes. In measurement, students describe and compare measurable attributes of common objects, and classify and sort objects into categories. Important math-related vocabulary is identified and systematically taught in the context of daily math activities.

A **unique strand design** is utilized to ensure acquisition of important math concepts and skills, and support retention through a variety of practice and review activities. Rather than a single topic being the focus of a lesson, *lessons incorporate approximately 4-5 activities across the four stands* that build slowly across lessons. New skills are introduced in small steps and practiced daily, along with review of previously learned skills. For example, a 45-minute lesson may start with counting along a number line, ordering the numerals, then identifying a "missing number" that the teacher removes from the number line. A new geometric shape or measurement activity may be introduced, followed by the Math Practice, a worksheet that reinforces lesson concepts and skills. The daily Math Practice includes a "Note home" in English and Spanish to let families know the math concepts and skills that their child is learning, and how they can extend practice in home-based activities.

Problem-solving activities are the focus of every fifth lesson. These whole class and/or partner activities integrate multiple math concepts; require children to discuss solution strategies; and use the math-related vocabulary in authentic application contexts. For example, an early problem-solving activity focuses on geometric shapes and vocabulary words related to various attributes of color and size. Each child selects a shape and then discusses

with a partner how their shape is the "same" as and/or "different" from their partner's. Children then identify possible ways to group the shapes and participate in making different sorts.

In later lessons, children play a "more or less" partner game. Each child selects a number card and determines if their number is more than or less than their partner's. The children color in a box on the "more" or "less" side of a chart, and then make observations and comparisons of the results (e.g. which player had more, how many "more" turns did each partner have, etc.).

Calendar lessons teach, reinforce, and apply mathematical concepts and skills in the context of typical "morning circle" time. In addition to learning the days of the week, months of the year, and seasons, students identify numbers and number patterns on the calendar, as well as note holidays and birthdays. Students count school days by making tally marks, counting the tallies, and writing the total number of school days. Students also deepen their place value understanding by adding straws to place value pockets and bundling sets of 10 to move to the tens pocket.

Conceptual Framework

Three components provide the conceptual framework for the math curriculum: the use of mathematical models; mathematics-related vocabulary and discourse; and procedural fluency and automaticity.
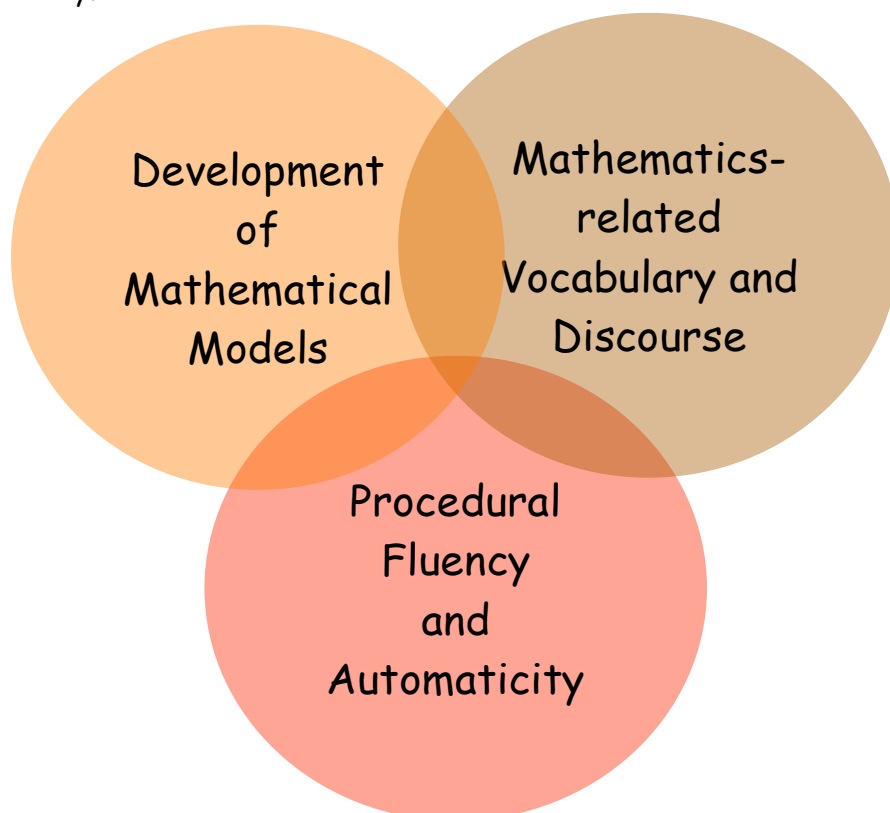
The use of mathematical models to represent important math concepts supports children's development of number sense. The curriculum introduces numerals with various representations, including their position on the number line. The number line is introduced with numerals 1, 2, and 3 positioned along an arrow. As additional numbers are introduced, they are added to the number line. Once numbers beyond 20 are introduced, the number line may only include a limited set of numerals such as 20-29. The number line is utilized in counting, numeral identification, writing, sequencing, quantity discrimination, and number before/number after activities.
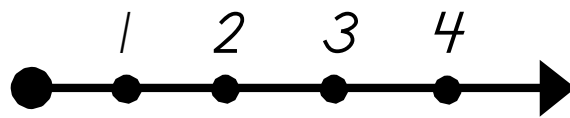
The hundreds chart also organizes numbers in logical and visual patterns and is referenced during calendar time, counting, numeral identification, and quantity discrimination activities. Pockets with place value labels are used to count school days. Every ten days, the straws in the "ones" pocket are bundled and moved to the "tens" pocket. Children celebrate the 100th day of school by bundling ten bundles of 10 and move them to the "hundreds" pocket.

Hundreds chart
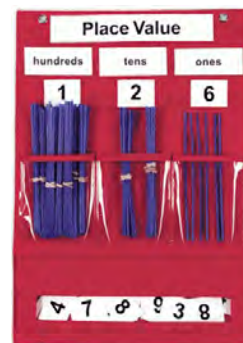
Counting school days

Individual numerals 0-10 are modeled through pairing with counting objects, finger models, tally marks, and ten-frames matched to the numeric symbol. Teen numerals are introduced conceptually by combining base ten models of rods and cubes paired with the numeral as children practice automatic recognition and identification of these difficult numerals.
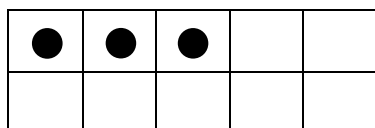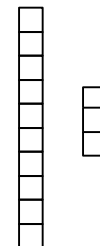

Ten-Frames

Finger Models
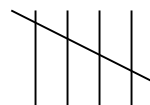
Tally Marks

Base Ten Model

In the second component, mathematics-related vocabulary and discourse, key vocabulary is identified and explicitly taught and reviewed. Lesson scripting for vocabulary concepts assures precise teacher definitions and application. Lesson activities are designed so children also use mathematical vocabulary with the teacher and with peers in partner activities.

Procedural fluency and automaticity, the third component, is key to helping at-risk learners master important math concepts and skills. The lesson design provides systematic practice and review within and across lessons to ensure mastery, maintenance, and generalization. Instructional delivery utilizes frequent student opportunities to respond and individual checks for student mastery at the end of each activity. The Math Practice at the end of each lesson provides another opportunity for students to practice independently and is a time for the teacher to check for student understanding.

Instructional Delivery Strategies

I do it: Teacher Model

In *Early Learning in Mathematics*, the teacher frequently models, or demonstrates new tasks and activities to children. For example, when introducing a shape such as triangle, the teacher would show a variety of triangles and say, "This shape is a triangle. It has three sides. What shape is this?" The teacher would then have the children practice saying it several times before reading a story about triangles and providing multiple opportunities to name, see, hear, touch, and count the sides.
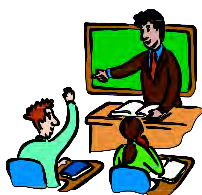
We do it: Teacher Guides Children

Children are given frequent opportunities to use math vocabulary as the teacher guides the children in practicing math skills. During the guide, the teacher does the activity with the children. For example, in rote counting to 5, the teacher would model or demonstrate, then say, "Count to 5 with me," and count with the children. After modeling the new numeral 4, the teacher would then have the children practice saying 4 several times, and alternate saying 4 with already mastered numerals, 1, 2, and 3. The teacher would then read the Big Number Book story about "4" and provide multiple opportunities to see, hear, touch, count, and name the new numeral. The guide step is done with the whole group so children can be actively involved and respond throughout the lesson.
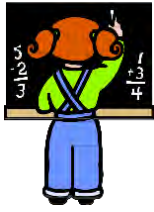
You do it: Children By Themselves

Children also practice math skills independently. This step is sometimes referred to as a test because it allows the teacher to test whether the children can do the skill on their own. Test opportunities occur in the lesson as the teacher asks the children to respond without assistance from the group. There are also individual turns at the end of various activities. The daily Math Practice provides children with yet another opportunity to practice important math skills on their own and allows the teacher to monitor which children are at mastery level, and which children are still in the acquisition stage.

Problem-Solving Activity – every 5th lesson

"Problem-solving" activities occur every fifth lesson. Children apply math skills and concepts to an activity that requires them to investigate a question or solve a problem. They are encouraged to use math vocabulary in discourse related to discussing their reasoning and exploring solutions.

Initial problem-solving activities include simple graphing activities to answer questions such as how many boys and how many girls are in the class; comparing shapes and telling how shapes are the same and how they are different; and sorting and classifying various objects by different attributes. Later on, children will work to apply their math knowledge in novel situations. They are challenged to seek solutions to real problems. For example, they construct linking towers and compare heights to see who has more, then describe ways to make the towers equal. They also use objects to solve simple addition and subtraction problems.

Home-School Connection

Every Math Practice includes a "Note home" in both English and Spanish that summarizes the math concepts and skills the children have been learning, and provides suggestions for practice, review, and extension of activities at home.

Kids Are Teachers (KAT)

Starting on lesson 26, the "Kids Are Teachers" or "KAT" Activities are introduced. These activities provide rich practice opportunities on important math skills with the goal of developing fluency and accuracy. KAT Activities are taught in the lesson as a child is selected to be the "teacher" and lead the activity. After a KAT Activity is introduced, it should be placed in a special area or box for use in future lessons. It may be used as a choice activity during free time, or as an option for extra firming for the group or individual children.

Scripted Lessons and Teacher Feedback

Early Learning in Mathematics includes detailed descriptions of each lesson activity, and lists the target vocabulary words. This script includes precise teacher language to convey important mathematical ideas and concepts concisely and consistently. Scripted wording emphasizes important math vocabulary and definitions. Lesson activities provide frequent opportunities for children to respond and for teachers to provide praise as well as positive and specific confirmations. These confirmations are yet another opportunity for children to hear mathematical language and vocabulary (e.g. "Yes, a triangle has three sides.")

The script allows teachers to monitor children's responses and immediately correct errors. If children make mistakes (misidentify numerals, shapes, count incorrectly), the teacher immediately provides a correct model to the whole class, then provides additional opportunities by guiding until the children are firm. Individual turns are often included in activities so teachers can monitor the children to check for mastery at the end of each part of the lesson.

In-Program Assessment

Quarterly assessments of student mastery of lesson objectives are provided at the end of each quarter (lessons 30, 60, 90, and 120). In these lessons, the teacher sets up activity tables where children engage in math activities while the teacher assesses individuals and/or small groups of students. Results are recorded on individual and class summary forms provided in the lessons. Additional firming and practice activities are suggested in the lesson.

Alignment of ELM to the Common Core State Standards

Early Learning in Mathematics (ELM) has drawn extensively from the converging knowledge base of effective mathematics instruction and the critical content areas of kindergarten mathematics summarized by national bodies. The program highly aligns with the National Council of Teachers of Mathematics (NCTM) Focal Points and Process Standards, the strands of mathematical proficiency specified in the National Research Council's report *Adding It Up* (2001), and Common Core State Standards for Mathematics (2010).

Standards for Mathematical Practice in ELM

The Standards for Mathematical Practice are incorporated throughout ELM lessons as children build expertise in important processes and proficiencies in the following ways:

Make sense of problems and persevere in solving them.
- Problem solving occurs throughout ELM lessons, but every 5th lesson is specifically designed as a problem-solving lesson. Through thoughtful questioning, teachers encourage students to engage in mathematical reasoning. Opportunities are provided for students to explain their thinking.

Reason abstractly and quantitatively.
- Students are given many opportunities to build a strong foundation in whole number concepts using a variety of number models, engaging in a wide variety of activities to model numbers and express quantitative ideas including understanding symbols +, - and = that are used in addition and subtraction equations.

Construct viable arguments and critique the reasoning of others.
- ELM regularly uses partner activities to increase opportunities for students to share their thinking and reasoning, and respond to the thinking and reasoning of others.

Model with mathematics.
- ELM provides real-life problems to model and solve through physical demonstrations and modeling; use of concrete objects, drawings, lists, and charts; and writing number sentences.

Use appropriate tools strategically.
- In ELM, students are provided with a variety of tools such as number lines, linking cubes, base ten blocks, ten-frames, and hundreds charts to support their conceptual understanding and solve mathematical problems.

Attend to precision.
- As students engage in mathematical thinking and reasoning, they are encouraged to become more precise in their communication and calculations with a particular focus on math-related vocabulary.

Look for and make use of structure.
- A variety of opportunities for students to look for patterns and structures in the number system and in other areas of mathematics are provided, including sorting activities and noting patterns in ten-frames and on the hundreds chart.

Look for and express regularity in repeated reasoning.
- ELM provides opportunities for students to recognize repetitive actions and patterns in counting, geometric shapes, number models, and equations.

Alignment of ELM Objectives to the Common Core State Standards

	Counting and Cardinality	**1st Q**	**2nd Q**	**3rd Q**	**4th Q**
	Know number names and the count sequence.				
1	Count to 100 by ones and by tens.	to 10	to 30 by 10s	to 60	to 100
2	Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	<10	<20		<30
3	Write numbers from 0 to 20. Represent number of objects with a written numeral 0-20.	0-10	0-20		
	Count to tell the number of objects.				
4	Understand the relationship between numbers and quantities; connect counting to cardinality.	√	√	√	√
	a. When counting objects, say the number names in the order, pairing each object with one and only one number name and each number name with one and only one object.	0-10	0-20		
	b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	0-10	0-20		
	c. Understand that each successive number name refers to a quantity that is one larger.	0-10	0-20		
5	Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	0-10	0-20		
	Compare numbers.				
6	Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. (Include groups with up to ten objects.)	√			
7	Compare two numbers between 1 and 10 presented as written numerals.		√		
	Operations and Algebraic Thinking	**1st Q**	**2nd Q**	**3rd Q**	**4th Q**
	Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.				
1	Represent addition and subtraction with objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, or equations.		Add	Subt	√
2	Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.		Add	Subt	√
3	Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation.		√	√	√
4	For any number from 1 to 9, find the number that makes 10 when added to the given number, (using objects or drawings, and record the answer with a drawing or equation.)			√	√
5	Fluently add and subtract within 5.		w/obj	√	√

	Number and Operations in Base Ten	1st Q	2nd Q	3rd Q	4th Q
	Work with numbers 11–19 to gain foundations for place value.				
1	Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.		√	√	√
	Measurement and Data	1st Q	2nd Q	3rd Q	4th Q
	Describe and compare measurable attributes.				
1	Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	√			√
2	Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.	√	√	√	√
	Classify objects and count the number of objects in each category.	1st Q	2nd Q	3rd Q	4th Q
3	Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. (Limit category counts to be less than or equal to 10.)	√	√	√	√
	Geometry	1st Q	2nd Q	3rd Q	4th Q
	Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).				
1	Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.	√	√	√	√
2	Correctly name shapes regardless of their orientations or overall size.	√	√	√	√
3	Identify shapes as two-dimensional ("flat") or three dimensional ("solid.")				√
	Analyze, compare, create, and compose shapes.				
4	Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length.)	√	√	√	√
5	Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.		√	√	√
6	Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?"				√

Preparing for the Lesson: Implementing with Fidelity

It is important to present all parts of the curriculum including the daily calendar lessons, as well as the daily math lesson including the Math Practice. The achievement of the children will be directly related to implementing the curriculum with fidelity, which means as designed and written. Carefully constructed teacher wording, high rates of opportunities to respond, positive engagement techniques, partner activities and individual turns, and use of math models and manipulatives are all designed to help children acquire important math concepts, skills, and strategic thinking. Use the following steps in preparing for daily lessons.

Preview the Lesson
- ❑ Read through the lesson so you know what concepts and skills are being introduced and reviewed.
- ❑ Review the lesson by header (numbered and shaded headings) and make sure you know the focus, sequence of tasks, teacher wording, etc. Highlight or make any notes on the lesson to help you during the lesson.
- ❑ Practice aloud any parts of the lesson you're unsure about.

Organize for the Delivery
- ❑ Review the lesson one more time and anticipate how long to spend on each activity and determine which physical setup will work best (on rug in circle, on rug at white board, at desks, etc.).
- ❑ Gather and organize teacher and student materials for easy access.

Teach the Lesson
- ❑ Follow lesson activities and script.
- ❑ Provide lots of opportunities for children to respond (unison group responses).
- ❑ Provide specific positive reinforcement and confirmations of correct responses.
- ❑ Provide immediate corrective feedback followed by extra positive practice.
- ❑ Give individual turns to check on mastery of low, middle, and high performers.

After the Lesson
- ❑ Reflect on the children's performance. Were they successful and engaged? Were there skills or concepts they weren't firm on?
- ❑ Are there individual children who need additional practice and monitoring?
- ❑ What adjustments will you make in your next lesson?

Lesson 19

Lesson 19 Objectives	Numbers & Operations	**Identify** numerals and **tallies** 1-7; **Count on from 5**; Rational count to 7
	Geometry	**Identify classroom shapes; Sort by shape**
	Measurement	
	Vocabulary	Understand and use the vocabulary words: *circle, square, triangle, shape, same, next*

Materials	Teacher	Numeral cards with tallies on the back: 1-7; Large triangle, circle, and square
	Student	Enough triangles, circles, and squares for each child to have one shape (each shape should be similar in color)

1. Review identifying numerals and tallies 1-5

- Say, **You already know about tally marks. First, we'll say the names of some numerals. Then I'll show you the tallies and you tell me what numeral it goes with.**

- Hold up a Numeral card with tallies on the back. Say, **Everybody, what numeral?** Children respond. Turn the card around and say, **How many tallies?** Children respond. Repeat until firm. Provide individual turns.

- Tell the children that must have been too easy and you'll make it harder. Mix up the cards and show the children the tally side first. Have them signal that they are ready to identify the number of tallies by putting a finger on their lips. After children respond, turn the card over to confirm. Repeat until firm. Provide individual turns.

2. Count and identify tally marks for numerals 5-7; Count on from 5 (Vocabulary: next)

Overview

- Using the numeral cards with tally marks, teach children how to first count the group of 5, and then count the tallies that come next. Reinforce the concept of counting on from 5. Provide practice counting, looking only at the tally mark side.

Teacher Note: The purpose of this activity is to begin teaching the difficult skill of counting from a number other than 1. In this lesson, children learn to count from the familiar tally model for 5 and count the additional lines for 6 and 7. Some children will have difficulty with this skill, but there will be opportunities to practice in subsequent lessons.

- Say, **Now, we're going to count the tally marks for some more numerals.**

front	back	Front	Back	front	back
5	‖‖‖	6	‖‖‖ ∕	7	‖‖‖ ∕∕

- Show the tally mark side of numeral 5 card. **Remember, when you see a group of tally marks that has the 5th mark turned sideways, you don't have to touch and count each line. You can just say, "5" for the group. Everybody, how many tally marks?** Touch the group of tally marks as the children respond. ("5.")

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- **Yes, 5. Let's make sure by checking the other side.** Turn the card to show the numeral 5. **Everybody, what numeral?** ("5.") **Yes, 5. We were right.**

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- Show the tally mark side of the numeral 6 card.
- Touch the group of 5 tally marks as you say, **Here's a group of tally marks that has the 5th mark turned sideways, so you don't have to touch each line. You can just say, "5" for the group. We can start with 5 and then add the _next_ line. Listen and watch while I count all of the tally marks.** Touch the group of 5 tally marks and then the next line as you say, **5…, 6. Listen again. 5, 6. Everybody do it _with me_.** Touch the group of 5 tally marks and then the next line as you and the children say, ("5…, 6.") Repeat several times.
- Say, **All by yourselves. Count the tally marks.** Touch the group of 5 tally marks and then the next line as the children say, **5…, 6.** Repeat several times. Say, **Yes, 6. Let's make sure by checking the other side.** Turn the card to show the numeral 6. **Everybody, what numeral?** ("6.") **Yes, 6. We were right again.**

‖‖‖ ∕∕

- Show the tally mark side of numeral 7 card.
- Touch the group of 5 tally marks as you say, **Remember, we can just say, "5" for this group. We can start with 5 and then add the _next_ lines. Listen and watch while I count all the tally marks.** Touch the group of 5 tally marks and then the next lines as you say, **5…, 6, 7. Listen again. 5…, 6, 7. Everybody do it with me.** Touch the group of 5 tally marks and then the next lines as you and the children say, **5…, 6, 7.** Repeat several times.

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- Say, **All by yourselves. Count the tally marks.** Touch the group of 5 tally marks and then the next lines as the children say, ("5..., 6, 7.") Repeat several times. **Yes, 7. Let's make sure by checking the other side.** Turn the card to show the numeral 7. **Everybody, what numeral?** ("7.") **Yes, 7.**

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- Say, **Now comes the tough part. Let's see if you can look at the tally side and tell me how many.**

- In random order, show the tally side of each card. Have the children signal that they are ready to identify the number of tallies by putting a finger on their lips. After children respond, turn the card over to confirm. Repeat until firm. Provide individual turns.

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3. Play I Spy with shapes placed around the classroom (Vocabulary: shape, circle, square, triangle)

Overview

Place a variety of attribute circles, triangles and squares in different colors and sizes in front of the classroom. There should be approximately 3-5 more shapes than there are children in the class. The teacher begins by giving "I Spy" clues describing a shape and then calls on a student to find the correct shape.

Teacher Wording

- **We're going to play "I Spy" using these _shapes_. I'll give you clues and when you see the _shape_ that I'm describing, raise your hand.**

- **For example, I might say, "I spy a _shape_ that is blue and has 3 sides." If you see that _shape_, raise your hand. If I call on you, you can come up and find the _shape_.** (Point to a blue triangle) **You'll tell me what the clues were, and take it back to your seat. Are you ready to play?**

- Give clues about the color, sides, and size of the various shapes. Call on different students to find the shape that matches the clues.

- Once the child selects the shape, say, **Tell me the clues you used to find the _shape_.** Have the child identify the attributes of the shape.

- Repeat with remaining shapes until each child has a shape.

Teacher Note: You may want to play a variation of the game and have the child who selected the last shape give the "I Spy" clues for the next shape.

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4. Sorting by shapes (Vocabulary: shape, circle, square, triangle)

- Say, **Now that everyone has a _shape_, we're going to sort ourselves by _shapes_.** Place a large triangle, circle, and square in different areas of the room and tell the children to sit in the area by their matching shape.

- Say, **Great! We've sorted ourselves by _shapes_. All of the _triangles_ are together, all of the _circles_ are together, and all of the _squares_ are together. Now we're going to play a game of "Simon Says."**

- Play "Simon Says." Use examples such as, **_Triangles_, stand up. _Circles_, touch your head. _Triangles_, sit down. _Squares_, stand up. _Squares_, sit down. _Circles_, stand up.**

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5. Math Practice 19 Instructions (Vocabulary: same, circle, next, triangle, square)

Name
- Hand out the Math Practice and have children write their name on the line next to the apple.

Count along the number line 1-7
- Say, **Everybody, find the number line. Put your finger on the big dot at the beginning of the line.** Check. **Now, you'll touch and loop while counting each numeral along the number line. I'll clap for each numeral. Get ready.** Clap as children say each number. Repeat as you check that children are successful.

Match tally models to numerals 5-7
- Have the children find the boxes with the tally marks. Have them touch the first box and tell you how many tally marks there are. Say, **Look at the boxes with the tally marks. Touch the first box. It's the box with the rabbit in the corner. Let's see if you remember how many tallies are in the first box. How many tally marks?** ("5.") **Right, this is a group of 5 tally marks. Look at the numerals below the 5 tally marks and let's read the numerals. What numeral?** ("5.") Repeat with 6 and 7. **Which numeral is the _same_ as the tally marks?** ("5.") **Right, so draw a _circle_ around the 5 to show there are 5 tally marks.**

- **Find the box with the frog in the corner. Touch the tally marks for 5.** Check that children are touching the tallies for 5. Say, **What are you going to say when you touch the 5 tallies?** ("5.") **Right. And what are you going to say when you touch the _next_ tally line?** ("6.")

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- **And what are you going to say when you touch the _next_ tally line?**
  ("7.") Repeat until firm.

- Say, **Get ready to count the tallies the fast way starting with the tallies for 5.** Clap as the children touch the group of 5 tallies, then the lines for 6 and 7. Repeat until firm. Ask, **How many tallies?** ("7.") **Yes, 7 tallies. Find the numeral 7 below those tallies and circle the 7.**

- Repeat the preceding 2 steps with the other 2 boxes.

Color shapes

- Have the children turn their papers over and find the row of shapes. Have them touch the first shape and tell you the name. Repeat with each shape in the row.

- Have the children find the triangle below the row of shapes. Direct the children to choose a particular color and color the triangle that color. Repeat with the circle and square.

- Have the children go back to the row of shapes and direct them to color in the shapes the same colors they used below. Tell them to start with the triangles and color all the triangles (color). Repeat with the squares and circles. Provide the level of support needed to complete the task.

Check and clean-up

- Read the note home. Check children's work. Have children put checked and completed worksheets in their take home (or homework) folders/cubbies.
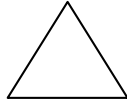
Start on the big dot. Touch and count along the number line.

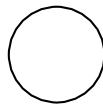1   2   3   4   5   6   7
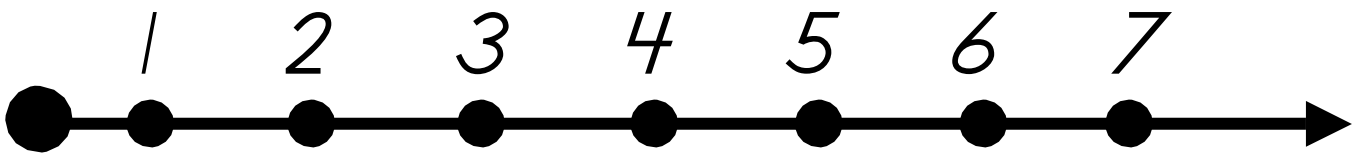
Count the tally marks and circle the same numeral.

5   6   7

5   6   7

5   6   7

5   6   7
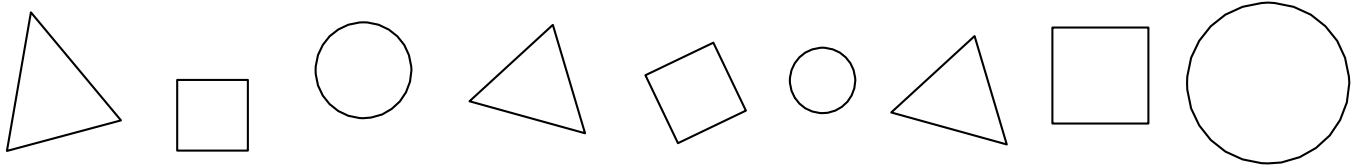
Color all the triangles the same color.

Color the squares a different color.

Color the circles a different color.

⬗Note home

⬗Nota para casa

| Your child is working on number and shape concepts. Have your child touch and count numerals 1 – 7 along the number line. Have your child show you the fast way to count tally marks (start with the tallies for 5 and touch and count each additional line). Ask your child to identify the shapes above and tell what color each is. | Su hijo(a) está trabajando con los conceptos de número y de forma. Pídale a su hijo(a) que vaya señalando y contando los números del 1 al 7 a lo largo de la recta numérica. Pídale a su hijo(a) que le muestre la forma más rápida para contar marcas de conteo (comience con las marcas de conteo del 5 y vaya señalando y contando cada línea adicional). Pídale a su hijo(a) que identifique las formas de arriba y que diga de qué color es cada una. |

Lesson 33

Lesson 33 Objectives	Numbers & Operations	Identify ten-frames for 0-10; Count from number other than 1; Rational count 10 cubes; Use place value models to show 11; Count by 10s to 50; Trace and **write numeral 3**; Write missing numeral 3 on the number line; Recognize models for 10
	Geometry	
	Measurement	Compare cubes to a ten-stick to show equality
	Vocabulary	Identify and use the vocabulary words: *cube, equal, same, more*

Materials	Teacher	"Kids Are Teachers" Activity 4 envelope with numerals and ten-frames; Ten- stick and 11 cubes; Numeral card 11 with ten-
	Student	Small baggie with 11 cubes and 1 ten-stick for each child

1. Kids Are Teachers-Activity 4: Identify Ten-frames for Numerals 0-10

Overview

- Show "Kids Are Teachers-Activity 4" envelope. Ask the children to look at the picture and tell you what the "teacher" is supposed to do for this activity. Confirm. Choose a child to be the "teacher." At the conclusion of the activity, have the children clap for the "teacher."

Teacher wording

- **It's "Kids are Teachers" time again!** (Ask children to look at the envelope and guess the activity.) **Yes, our "teacher" today will show a ten-frame. The class will count the dots, then name the numeral that goes with the ten-frame.**
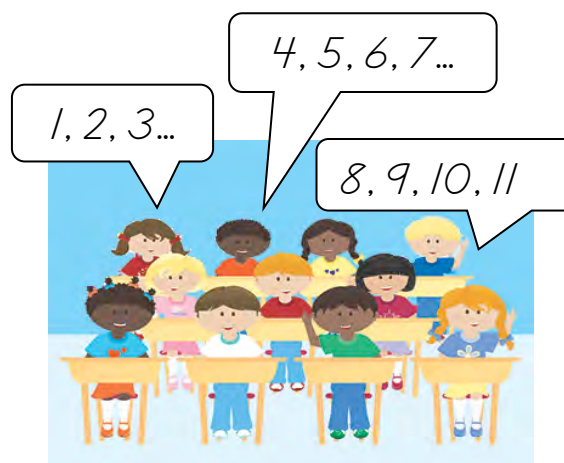
2. Counting around to 11

Overview

- One child will begin counting and then when signaled, another child will continue counting from where the first child left off. When signaled, another child will continue counting. Repeat until you reach the number 11 and then start the game over. Repeat until all children have had a chance to play.

Teacher Note: This counting activity provides practice in the difficult skill of counting from a number other than 1. The children still hear the counting sequence beginning with "1" but each child only counts aloud a few of the numbers in the sequence from where the previous counter left off.

Teacher wording

- Show the card for numeral 11. Ask the children to identify it. **Everybody, count to 11. Get ready.** ("1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11.") Repeat until firm. Call on individuals, checking lower performers.

- **Now, we're going to do some special counting. It's called, "Counting Around." Today we'll do Counting Around to 11. Here's how it works. I'll tap someone on the head. That child will start counting. Then I'll tap another child on the head, and that child will continue. Then I'll tap another child on the head and that child will continue counting. We'll keep doing this until we get to 11. Then we can start over again. Let's see how this works.**

- Call on several children to come to the front of the class and show an example. <u>Lead the children as necessary</u>. Tap the first child on the head and say, **We'll start counting.** The child and you will start counting, **1, 2, 3, 4.** Tap the next child on the head and say, **Continue counting.** The child and you will continue counting, **Five, 6, 7.** Tap the next child on the head and say, **Continue counting.** The child and you will continue counting, **8, 9, 10, 11. Say, We did Counting Around to 11. Let's clap for the helpers.**

- Repeat the above step with another group of children, leading until firm.
- Say, **Now we're going to play, Counting Around to 11 with the whole class.** Follow the same procedure with the entire class. Start over each time a child reaches 11.

Lesson 33

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3. Review the cube and ten-stick (Vocabulary: cube, equal, same)

Overview

- Review the cube and ten-stick with the children. See if children can remember the name and how many cubes make up a ten-stick. Confirm their correct answers and model again how to count out 10 cubes and place them next to the ten-stick to check that 10 cubes equal 1 ten-stick.

- Next, give each child a ten-stick and 10 cubes. Have them count the cubes on the ten-stick. Then have them count the 10 cubes, line them up next to the ten-stick, and confirm that 10 cubes equal a ten-stick.

Teacher wording

- Show the children a cube and ask, **Who remembers what these special counters are called?** Children respond.

- **Yes, these are _cubes_. What are they everyone?** ("Cubes.")

- **How much is a _cube_ worth?** Children respond.

- **Yes, a _cube_ is worth 1. How much is a _cube_ worth?** ("1.") **Yes, a _cube_ is worth 1.**

- Show the children the ten-stick and ask, **Who remembers what this is called?** Children respond.


- **Yes, this is a ten-stick. What is it everyone?** ("A ten-stick.")

- **How many _cubes_ make up a ten-stick?** Children respond.

- **Yes, it's made up of 10 _cubes_. How many _cubes_ make up a ten-stick?** ("10 cubes.") **Yes, a ten-stick is made up of 10 _cubes_.** You may want to make the link between "ten" in ten-stick and the number of cubes it represents.

- **I'll count out 10 _cubes_. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. Now I'll place them next to the ten-stick and check.**

- **Yes, this ten-stick _equals_ 10 _cubes_. When we want to show the same amount as 10 _cubes_, we can use this ten-stick instead.**

- **How many _cubes_ make up a ten-stick?** ("10 cubes.") **Right, a ten-stick is made up of 10 _cubes_.**

- **Now it's your turn.** Pass out a ten-stick and 10 cubes to each child.

- **Let's count the _cubes_ on the ten-stick and make sure there are 10. Touch the _cubes_ on your stick and count <u>with me</u>. Get ready. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.** Repeat until firm.

- **Now let's count your _cubes_.** Do this with the children and remind them to count out the cubes like you showed them with your model. Repeat until firm.

- **Now let's make sure that a ten-stick is the _same_ as 10 _cubes_. Line up your _cubes_ right next to the ten-stick.** Check and assist.

> Teacher note: Some children will have difficulty with the fine motor skills needed to align the cubes. Provide extra help or have a child or adult helper assist so these children don't get frustrated with the motor task.

- **Make sure your _cubes_ are right next to each other and the ten-stick. Everybody, are they the _same_?** ("Yes.") **Yes, a ten-stick is the _same_ as 10 _cubes_. So when we want to show 10 _cubes_, we can just trade in 10 _cubes_ for a ten-stick. That's pretty neat!**
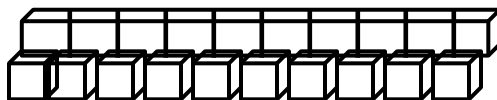
4. Ten-stick Game (Vocabulary: cube, more)

Overview

- Use cubes and ten-sticks to show that the number 11 is made up of 10 and 1 more. The children count as the teacher puts down cubes. At the 10th cube, the children instruct the teacher to trade them in for a ten-stick. The teacher uses the ten-stick and then 1 more cube to show that 11 is the same as 10 and 1 more.

Teacher wording

- **We're going to play the "Ten-stick Game." For this game, we need 11 _cubes_. I'd better make sure that I have 11. Help me count them.** Have the children count as you touch each cube. ("1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11.")

- Confirm that there are 11 and put the cubes aside or back into a container.

- **We're ready to play the "Ten-stick Game." Every time I put a _cube_ down,**

Lesson 33

> you'll count. When I get to 10, you'll say, "ten-stick," and I'll trade in the 10 _cubes_ for a ten-stick. Get ready to count.

- As you lay cubes down 1 at a time, the children should count. ("1, 2, 3, 4, 5, 6, 7, 8, 9, 10.") As you lay down the 10th cube, the children should say, ("Ten-stick.")

- **Right. We can trade the 10 _cubes_ in for a ten-stick.** Remove the individual cubes, substituting them for a ten-stick. **Right now, we have 1 _group_ of 10 and no more.**
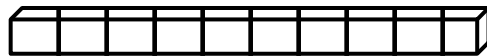
- **I still have 1 more _cube_.** Put down a cube next to the ten-stick.

- **That makes 11. Ten and 1 _more_. Ten and 1 _more_ make 11.**

- Show the numeral 11 card.
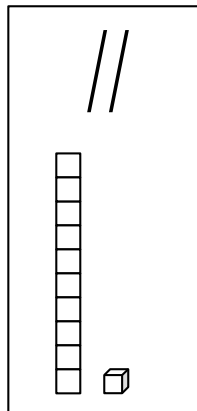
- **That's what the numeral 11 means. It means we have 10** (point to the ten-stick) **and 1 _more_** (point to the single cube). **Listen again, 11 means we have 10** (point to the ten-stick) **and 1 _more_** (point to the single cube).

- **Try to say that _with me_. 11 means we have 10 and 1** children several times. Challenge them to complete the sentence, **11 means we have…** ("10 and 1 more.")

- **You really worked hard on this! Clap for yourselves and tell your neighbors, "Good job!"**

- Collect the ten-stick and cubes.

5. Math Practice 33 Instructions (Vocabulary: cube)

Name

- Hand out the Math Practice and have children write their name on the line next to the snowman.

Count ten-sticks and count by 10s to tell how many cubes

Teacher Note: This activity is designed to have the children count by 10s in two different ways. Children count the ten-sticks as "one 10, two 10s, three 10s," etc. Then they count the ten-sticks by 10s (10, 20, 30, etc.) to tell how many cubes in all. Help children make the connection that counting by 10s is another way to count the cubes that make up the ten-sticks.

- Have the children find the row that has the pencil. Model how to count the ten-sticks by saying, **One 10, two 10s, three 10s. There are three 10s.**

- Have the children count the ten-sticks with you, then on their own. ("One 10, two 10s, three 10s.") Repeat until firm.

- Tell the children that each ten-stick has 10 cubes. If they count the ten-sticks by 10s, they can find out how many cubes there are in all. Model counting by 10s saying, **10, 20, 30. There are 30 cubes in these 3 ten-sticks. If I counted each cube, there would be 30.**

- Have the children touch and count the ten-sticks in the pencil row by 10s.

- Repeat with the next two rows having children first count one 10, two 10s, etc., then counting by 10s to find how many cubes in all.

- Provide additional counting practice by randomly selecting a row and having the children count by 10s again and tell how many cubes there are in all.

- Have the children work with a partner. Have the partner touch the row and the other partner counts. Switch roles.

Trace and write numeral 3

- Have the children turn their papers over. Have the children find the next set of boxes with the numeral 3. Tell children to pick up their pencils (or crayons)

Lesson 33

and start at the dot and trace the 3s. When they get to the box with only a dot, direct them to copy the numeral 3 in the box. Praise children for writing 3s all by themselves.

Identify and write the missing numeral on the number line

- Have the children find the number line. Ask the children to count to themselves along the number line and raise their hand when they know what numeral is missing. When the children identify the missing numeral (3), have them write it in on the number line.

Models for 10

- Have the children find the finger model. Ask what number it represents. Have the children hold up their hands to show 10.

- Have the children find the tallies. Ask what number they represent. Confirm and have them count the tallies (or make a large example on the board and have the children count with you).

- Have the children find the ten-frame. Ask what number it represents. Confirm and have the children count the dots in the ten-frame.

Check and clean-up
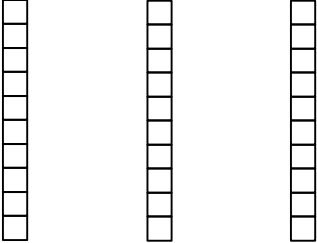
- Read the note home. Check children's work. Have children put checked and completed worksheets in their take home (or homework) folders/cubbies.
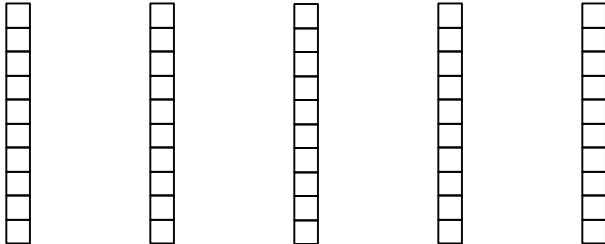
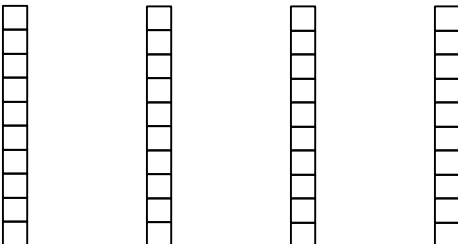Teacher Reminder: Prepare the "Kids Are Teachers Activity 6" envelope, "Crazy Counts" for the next lesson.

Count the ten-sticks in each box, then count by 10s to tell how many cubes there are.

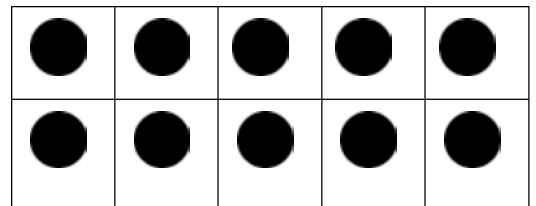Trace numeral 3. Write the numeral 3 in the rest of the boxes.

3	3	3	•	•	•

Tell what numeral is missing and then write that numeral on the number line.

$1 \quad 2 \quad \boxed{} \quad 4 \quad 5$

What number do these things represent?
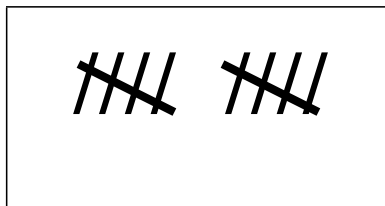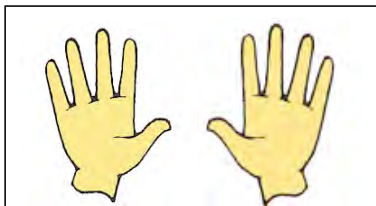
☛Note home

☛Nota para casa

Have your child show you how to touch each ten-stick as he/she counts by 10s. Ask your child to count by 10s to 50 (or farther). Have your child tell you the name of the missing numeral above. Ask your child to show you different ways to represent 10.	Pida a su hijo(a) que le muestre como toca cada palillo de diez al mismo tiempo que cuenta de diez en diez. Pídale que cuente de diez en diez hasta 50 (o más). Pídale que le diga el nombre del numeral que falta arriba. Pídale que le muestre las diferentes maneras de representar el número 10.

Lesson 77 Objectives	Numbers & Operations	Add 1 to a number; **Decompose numbers to 10**; Identify, sequence, compare, and write numerals 26-30
	Geometry	
	Measurement	
	Vocabulary	Understand and use the vocabulary words: *add, plus, join, separate, after, greater than, less than*

Materials	Teacher	Addition Facts cards (from 0+1 to 10+1); Small numeral cards 25-30
	Student	10 linking cubes for each child; Small numeral cards 26-30 (enough for each child to have a numeral)

1. Add 1 to a Number: Plus 1 Card Game (Vocabulary: add, plus, equal)

Overview

- Place Addition Facts cards in a pile. Select a card and read it to the class. For example, say, **"2 + 1 = ____."** Pause for a couple of seconds and then say, **Tell me.** Children respond. Confirm the correct response. Repeat with another equation card.

Teacher wording

- **You're so good at knowing how to *add* or *plus* 1 that today I'm going to show you how to play the "*Plus* 1 Card Game." I'm going to show you a *plus* 1 card. I'll read it to you and you'll get ready to tell me the answer. But don't say anything until I say, "Tell me."**

- Select an equation card, show, and read to the class. Give some think time, then say, **Tell me.** Children respond. Confirm the correct response. Repeat with other equation cards.

- Call on a child to be the "teacher." Repeat the activity. Assist as needed.

Lesson 77

2. Decompose numbers to 10 (Vocabulary: join, separate, plus, equal)

Overview

- Students coun
  t out and *join* 10 linking cubes. Then they *separate* the cubes and compare the different ways they separated the cubes with a partner. Next, show various numeral cards and have the students count out and join that many cubes. Then separate the cubes and compare their groups with their partner's groups.

Teacher wording

- Distribute or have children count out 10 linking cubes.

- Say, **Today we are going to *join* and *separate* linking cubes. Let's count together as we *join* our cubes to make a train.** ("1-2-3-4-5-6-7-8-9-10.") **Great! You have 10 cubes.**

- **Now separate your train in 1 place - any place you want.** (Children respond.)

- **Now how many cube trains do you have?** ("2.") **Everyone count the number of cubes in 1 train.** (Children respond.) **Now count the number of cubes in the other train.** (Children respond.)

- **Look at your neighbor's cubes. Did he or she separate the cubes the same way?** (Children respond yes/no.)

- Ask several students to tell how he/she separated the cubes. Write those as equations on the board. Have children read the equation after you write it.

  $$3 + 7 = 10$$

  $$2 + 8 = 10$$

  $$5 + 5 = 10 \dots$$

- **No matter where the cubes were *separated*, how many did they *equal* altogether?** ("10.") **Yes, 10.**

- **Today we're going to play "Break it!" with linking cubes. I'll show and say a number between 2 and 10. You'll count out that many cubes and *join* them to make a train. Then I'll say "Break it!" You'll *separate* the cubes in 1 place. Then you'll compare the way you *separated* your cube trains with your neighbor's.**

- Hold up a large numeral card 7 and say, **This is 7. Count out 7 cubes and _join_ them to make a train.**

- Monitor that all students join 7 cubes.
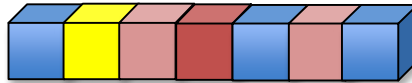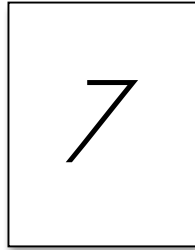
- Say, **Break it**!

- Ask the children to count how many cubes in each train.
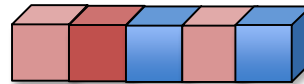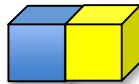
- Ask the children to compare the way they _separated_ their cube train with their neighbor's.

- Choose children to share how many cubes in each train. Write those equations on the board. Have children read the equations after you write them. Always tell children there are lots of ways to make 7 (or other number) altogether.

$$3 + 4 = 7$$
$$2 + 5 = 7$$
$$6 + 1 = 7$$

- Repeat with various numerals 2-10.

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3. Identify, sequence, and compare numerals 26-30 (Vocabulary: after, less than, greater than)

Overview

As in previous lessons, review numeral cards 26-30 with the class, then give each child 1 of the numerals and review in a game format.

Lesson 77

- **We're going to play our number game again. We're going to name some numerals and put them in order.** Stand up and hold up the numeral 25. Ask, **Everybody, what's the name of this numeral?** ("25.") **Yes, 25.**

- **If you have the numeral that comes _after_ 25, raise your hand.** Check that children who have their hands raised are holding numeral 26. **Everybody, what numeral comes _after_ 25?** ("26.") **Yes, 26 comes _after_ 25. If you have the numeral 26, make a line next to me.** Children should line up next to the teacher and behind each other. Assist children as needed.

- **If you have the numeral that comes _after_ 26, raise your hand.** Check that children who have their hands raised are holding numeral 27. **Everybody, what numeral comes _after_ 26?** ("27.") **Yes, 27 comes _after_ 26. If you have the numeral 27, make a line next to the children holding numeral 26.** Children should line up next to the children holding numeral 26 and behind each other. Assist children as needed.

- Repeat the preceding step until all the children have lined up in sequence.

- **Great work! We've put all the numerals up to 30 in the right order.**

- Collect the numerals and put 25-30 on the white board tray (in order).

- **Now we're going to identify numerals that are _less than_ and _greater than_ other numerals again.**

- **What number is _greater than_ 29?** ("30.") **Right. Say that with me. 30 is _greater than_ 29.**

- **What number is _less than_ 26?** ("25.") **Right, Say that with me. 25 is _less than_ 26.**

4. Math Practice 77 Instructions

Name

- Hand out the Math Practice and have children identify the shape at the top. Have them write their name on the line next to the shape.

Decompose 10 and write equations that equal 10

- Tell the children they will write equations to show how many dots are in the ten-frame and how many more make 10.
- Have the children find the first ten-frame, tell how many dots there are, and write that number in the first space in the equation.
- Have the children fill in the empty spaces with dots. Have them count those dots and fill in the second space in the equation.
- Have the children read the equation for the ten-frame.
- Repeat with the remaining ten-frames.

Identify, write, and compare numerals 26-30

- Have the children turn their papers over. Ask them to touch the numeral 25 and identify it.
- Have the children touch the empty boxes as they count to 30.
- Have them write the correct numerals in each box.
- Ask the children to tell you a numeral that is greater than 27.
- Ask the children to tell you a numeral that is less than 27.

Add 1 to a number and write equations

- Have children find the 1st fish and count the bubbles. Have them write that number in the first space of the equation below.
- Tell the children to draw 1 more bubble, then add the bubbles to find out how many altogether.
- Have the children read the equation.
- Repeat with the other fish.
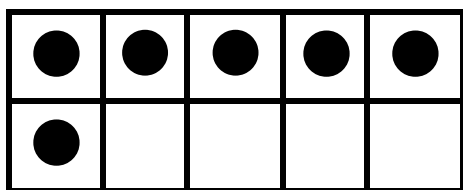
Check and clean-up

- Check children's work. Have children put checked and completed worksheets in their take home (or homework) folders/cubbies.
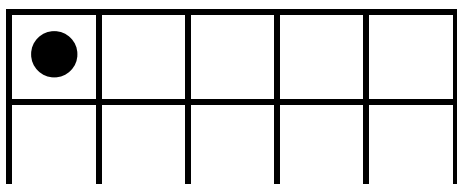
Count the dots in the ten-frame. Add dots to make 10 altogether.
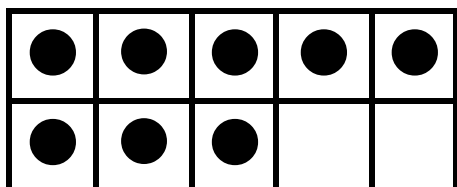Write an equation in the box for each.
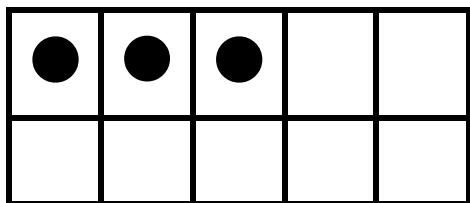
___ + ___ = 10

___ + ___ = 10

___ + ___ = 10

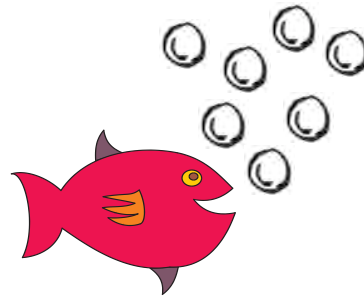___ + ___ = 10

Touch the numeral 25. Touch each empty box and say all of the numbers that come after 25. Write the numerals in the boxes.

25					

Identify a numeral that is greater than 27. Identify a numeral that is less than 27.

Count the bubbles. Write that numeral. Draw 1 more bubble and write how many altogether.

_____ + / = _____   _____ + / = _____

✍ Note home   ✍ Nota para casa

Ask your child to identify the numerals in the boxes above. Ask which numerals are greater than and less than 27. Have your child tell you how to add 1 to a number and explain the equation for each fish. On the other side, ask your child to tell you the equations that match each ten-frame to equal 10.	Pídale a su hijo(a) que identifique los números que están en los recuadros de aquí arriba. Pregúntele qué números son mayores que y menores que el 27. Pídale a su hijo(a) que le diga cómo se suma 1 a un número y que le explique la ecuación que hay en cada pez. Del otro lado de la página, pídale a su hijo que le diga qué ecuación corresponde a cada marco de diez del otro lado, pídale a su hijo(a) que le diga las ecuaciones que se deben relacionar con cada marco de 10 para que tengan un total de 10.

3rd Quarter Assessment Directions

Materials needed: Numeral cards 21-30; Math Practice 90

#	Item	Directions	Scoring
With the teacher			
1	Rote count	Ask the child to count to 60 starting with, "30, 31…"	Record highest number correctly counted (stop at 60).
2	Count by 5s to 50	Ask the child to count by 5s to 50.	Record highest number correctly counted
3	Sequence numerals 21-30	Give the child the numeral cards for 21-30 and have him/her place the cards in order (you may want to draw/ provide a number line to make it easier to line up).	Circle "Yes" for correct or "No" if incorrect.
Use Math Practice (MP) 90 to assess items 4-9			
4	Identify numerals 31-60	Ask the child to name the numerals in each row.	Circle if correct; Cross out if incorrect
5	Identify hexagon	Ask the child to name each shape.	Circle if hexagon is correct; Cross out if incorrect
6	Identify ordinal 5th	Have the child touch the 5th shape.	Circle if correct; Cross out if incorrect
7	Decompose 10 and write equation	Have the child select 2 different color crayons and color in the tea cups. Then write an addition equation to match.	Circle if correct; Cross out if incorrect
8	Write numerals 11-20	Have the child write numerals 11-20 in the boxes below.	Circle if correct; Cross out if incorrect
9	Add within 5	Have the child write the answer to the addition problems.	Record number of problem correct out of 6

Lesson 90
3ʳᵈ Quarter Assessment

Student Record Form

Student Name: _____   Date: _____

Examiner: _____

#	Item	Response
1	Rote count to (record highest # counted correctly or 60)	Counts to _____
2	Count by 5s to 50 (highest # or 50)	Counts by 5s to _____
3	Sequence numerals 21-30	Yes No
Use Math Practice 90 to assess the following:		
4	Identify numerals 31-60	31 35 39 42 44 48 50 53 56 60
5	Identify shape	Hexagon
6	Identify ordinal position	5ᵗʰ
7	Decompose 10; Write equation	Yes No
8	Write numerals 11-20 without a model	11 12 13 14 15 16 17 18 19 20
9	Add within 5 (+1, +0, 2+2)	# correct _____ out of 6

Comments:

Class Summary	Student Name		
Rote count to 60 (record highest number counted)	1		
Count by 5s to 50 (record highest # counted)	2		
Sequence numerals 21-30 (record Y or N)	3		
Identify numerals 31-60 (# correct/10)	4		
Identify hexagon (record Y or N)	5		
Identify ordinal position 5th (record Y or N)	6		
Decompose 10; Write equation (record Y or N)	7		
Write 11-20 without a model (# correct /10)	8		
Add within 5 (record # correct/6)	9		

Lesson 103

Lesson 103 Objectives	Numbers & Operations	Count on from a number; **Count and identify 71-80; Subtract within 5 (#-#= 0, -1, -0 and 4-2)**
	Geometry	**Identify** cone and **cube and their attributes**
	Measurement	
	Vocabulary	Understand and use the vocabulary words: *subtract, minus, equal, equation, shape, solid, flat, circle, square, triangle, cone,* ***cube***

Materials	Teacher	Hundreds Chart; Large circle, square, triangle shape cards; 3-D shapes: cube, sphere, cylinder and cone
	Student	None

1. Count on from a number; Count and identify 71-80 on the Hundreds Chart

Overview

- Review counting on from any number between 31 and 70. Then using the Hundreds Chart, children will count a new row of numerals from 71-80. After the children count, have the class stand up and call on individual children to identify one of the numerals in the row. The class repeats the name of the numeral. Continue until all of the children are sitting down.

Teacher Note: If all of your children are firm on counting to 100, you can move through this activity quickly.

Teacher wording

- **Let's practice some crazy counts starting with different numbers.**

- Write 31–40 on the board.

- **Your turn to start counting with 31 and stop at 40. Start with 31.**

- Monitor that children start the sequence with 31 and count the successive numbers correctly. If they have difficulty, use the Hundreds Chart to provide a visual of the sequence, then repeat the sequence without referring to the Hundreds Chart. Children may have difficulty stopping at 40 so say "stop" if they count beyond. Praise children who remembered to stop at the designated number.

- Repeat with 45–55.

- Repeat with 58–70.

- **Wow, you can count all of these rows up to 70. Now you'll get to count the 70s!**

- Touch the row starting with 71 and ask, **Raise your hand if you know the name of this numeral.** Call on individuals to offer answers. Confirm, **Yes, 71. What numeral?**

- If needed, model "61" and "71" and have the children clearly repeat each number.

- Touch the last numeral in the row and ask, **Who knows the name of this numeral?** Call on individuals to offer answers. Confirm, **Yes, 80. What numeral?** ("80.")

- **Count the row with me starting with 71 and stopping at 80.** Touch the numerals as the children count with you. Repeat until firm. Then have the children count the row by themselves.

- Call on groups of children to stand and count the row.

- Tell the children that you will give each child a turn to name one of the numerals. Have all the children stand up (but be sure they can see the Hundreds Chart.) Point to one of the numerals between 71-80. Call on an individual to name the numeral, then ask the whole class to say the name of the numeral. After each child's turn, have them sit down. Continue until all the children are sitting down.

- Repeat the preceding step with other random examples. Repeat until firm.

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2. Subtract within 5 (#-#=0) (Vocabulary: subtract, minus, equals, equation)

Overview

- Children already know -1, -0, and 4-2 facts. In this lesson, children will model subtracting the same number and learn the rule that the answer will always be 0.

Teacher wording

- Write on the board: 5 - 5 = and   3 - 3 =

- **Let's solve these 2 problems. Read the first problem.** ("5 - 5 = " .)

- **Let's act this out.** Call on 5 children to stand in front of the class.

- **Here's 5 children.** Count and confirm. **Now let's _subtract_ 5 children.** Tell the 5 children to sit down.

- **How many are left?** ("0, or none.") **Yes, we started with 5, then we _subtracted_ or took away 5, and we have 0 left. 5 - 5 = 0.**

Lesson 103

- Finish the equation on the board, then say, **Everyone, read this _equation_.** ("5 – 5 = 0.")

- **Let's read the next _equation_ on the board.** ("3 – 3 = .")

- Call on 3 children to stand in front of the class. **We have 3 children in front of the class. How many children do we need to _subtract or take away_?** ("3.")

- Have the 3 children sit down.

- **How many are left?** ("0, or none.") **Yes, we started with 3, then we subtracted or took away 3, and we have 0 left. 3 - 3 = 0.**

- Finish the equation on the board, then say, **Everyone, read this _equation_.** ("3 – 3 = 0.")

- Erase the answers to 5 - 5 and 3 - 3.

- **Let's solve these problems with your fingers. Read the first problem.** ("5 – 5 = .")

- **Show me 5 fingers.** Monitor and check.

- **Now, take away your 5 fingers but leave your hand up.**

- **Do you have any fingers still up?** ("No.")

- **Everyone, what does 5 – 5 = ?** ("0.") **Right, 5 - 5 = 0.**

- Finish the equation on the board and have students read the equation with you.

- **Read the next problem.** ("3 – 3 = .")

- **Show me 3 fingers on one hand. Keep that hand up but now put your 3 fingers down.** Monitor and provide feedback as needed.

- **Do you have any fingers still up?** ("No.")

- **Everyone, what does 3 – 3 = ?** ("0.") **Right, 3 - 3 = 0.**

- Finish the equation on the board and have students read the equation with you.

- **I wonder if you can solve these 2 problems in your head?**

- Erase the board.

- **I'm going to say one of the _subtraction_ problems and you'll tell me the answer. You can look at your fingers if you need help. Ready? Everyone, what does 5 – 5 equal?**

- Give think time, then signal. ("0.")

- **Great, I didn't fool you! If I have 5, and _take away_ 5, the answer will be 0.**

- **What if I have 3 and _take away_ 3. What's the answer?** ("0.") **So what does 3 – 3 _equal_?**

- Give think time, then signal. ("0.")

- **Right, 3 – 3 = 0. You are so smart!**

- Present: 5 – 5; 3 – 3 making sure children are firm. For variation, call on groups of children to answer (such as children with tennis shoes, girls, boys, children with long sleeves, etc.)
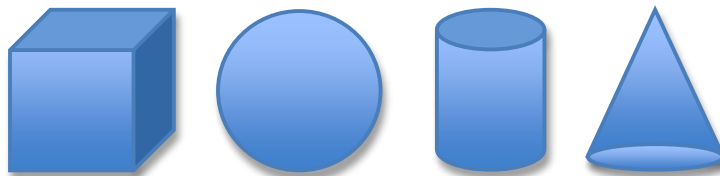
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3. Identify cone; Introduce 3-D shape cube (Vocabulary: shape, solid, flat, circle, square, triangle, cone, cube)

Overview

- Children will name and identify the characteristics of a _cube_. Children will recognize the differences between a cone and a cube.

Teacher wording

- Show the models of the cube, sphere, cylinder, and cone.

- **These are some _solid_ three-dimensional _shapes_. Today, we'll learn the name of a new _shape_, but first I need to be sure that everyone remembers the name of the _shape_ that has a _circle_ on one end and has a _shape_ like a _triangle_.** Point to the cone. **Everybody, what's the name of the _shape_ that has a _circle_ on one end and has a _shape_ like a _triangle_?** ("Cone.") **Right. The _shape_ that has a _circle_ on one end and has a _shape_ like a _triangle_ is called a _cone_.**

- Call on a child to select and hold up the cone, show the circle on one end, and outline the triangular shape. Have the child replace the cone and sit down.

Lesson 103

- Ask if any of the children noticed or brought in objects that look like any of the 3-D solid shapes. Allow them to show their object and tell which 3-D shape their object resembles. Discuss the similarities and differences. Compliment each child who shared an object.

- Display pictures of a triangle, circle, and square.
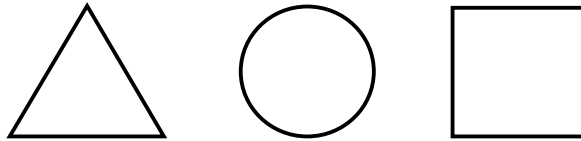
- **These _shape_s are _flat_. Remember, our 3-D _shapes_ are not _flat_. They are _solid_.**

- Hold up the cube so that the children see 1 of the 6 squares. Outline 1 of the squares.

- **This 3-D _shape_ is called a _cube_. If you look carefully at this _cube_, you may see a _triangle_, _circle_, or _square_ in it. Does this part look like a _triangle_, _circle_, or _square_?** ("Square.")

- **Yes, it looks like a _square_.** Confirm by holding the cube next to the square.

- **A _cube_ has _squares_ on every side** (show the 6 sides of the square). **Let's count how many _square_ sides it has. I'll touch each side and you count. Maybe I should put a small piece of masking tape (or a post-it) each time we count a side. That way we can be sure we don't miss any sides and we don't count a side twice.**

- Touch each side of the cube and put a small piece of masking tape (or a post-it) on each side as the children count. ("1… 2… 3… 4… 5… 6.")

- **Let's do that again. This time I'll take off the piece of masking tape (or a post-it) each time we count a side.**

- Touch each side of the cube, removing the piece of masking tape (or a post-it) on each side as the children count. ("1… 2… 3… 4… 5… 6.")

- **Remember, a _cube_ has 6 _square_ sides. You might see a _shape_ that has 6 sides, but if all 6 sides are not _square_, the _shape_ is not a _cube_.**

- **Does anybody have an idea how you might be able to remember the name of a _cube_?**

- Call on a child. Accept reasonable responses, such as the idea that the children have used linking <u>cubes</u>. Point out that some boxes or tissue boxes are in the shape of a cube. Ice cubes do not usually have 6 square sides anymore.

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4. Math Practice 103 Instructions (Vocabulary: shape, cube, cone, square, circle, triangle)

Name

- Hand out the Math Practice and have children identify the shape at the top. Have them write their name on the line next to the shape.

Identify 3-D solid shape cube or cone given teacher clues

- **Look at the 2 _shapes_. Touch the first _shape_. What _shape_?** ("Cube.")

- **Touch the next _shape_. What _shape_?** ("Cone.")

- **I'll give you a clue. If the clue tells about a _cube_, touch the picture of the _cube_. If the clue tells about a _cone_, touch the picture of the _cone_. Listen.**

  - ➢ **This _shape_ has 6 _square_ sides. Touch the picture of the _shape_ that has 6 _square_ sides.** Confirm or correct.

  - ➢ **This _shape_ has a _triangular shape_ and a _circle_ on one end. Touch the picture of the _shape_ that has a _triangular shape_ and a _circle_ on one end.** Confirm or correct.

  - ➢ **This _shape_ looks like a birthday hat. Touch the picture of the _shape_ that looks like a birthday hat.** Confirm or correct.

  - ➢ **This _shape_ looks like a linking _cube_. Touch the picture of the _shape_ that looks like a linking _cube_.** Confirm or correct.

- Continue as in the preceding step until the children can correctly identify the appropriate shape.

- **Raise your hand if you have a clue about a _cone_ or a clue about a _cube_.** Call on individual children to give a clue to the class. Accept appropriate clues, even if the clue has already been used.

- **Tell somebody in your family what you know about _cubes_ and _cones_.**

Identify cubes

- Have the children find the box with the 3-D shapes. Have them find and touch one of the cubes.

- Have the children circle or color all the cubes in the box.

Lesson 103

Touch and count numerals 71-80

- Have the children touch and count each numeral from 71-80.

- Say the numerals in random order and have the children touch each numeral and tell what numeral they touched. Have the children color each numeral as you identify it.

- If time allows, have children tell a partner to touch different numerals and tell what numeral they touched.

Subtract within 5 (-1, -0, and 4-2)

- Tell children to turn their papers over and that they will complete the subtraction problems.

- Remind them of the strategy for each.

- Have children read each equation, then tell the answer. Repeat until firm.

- Have the children pick up a pencil and write the answer to each problem.
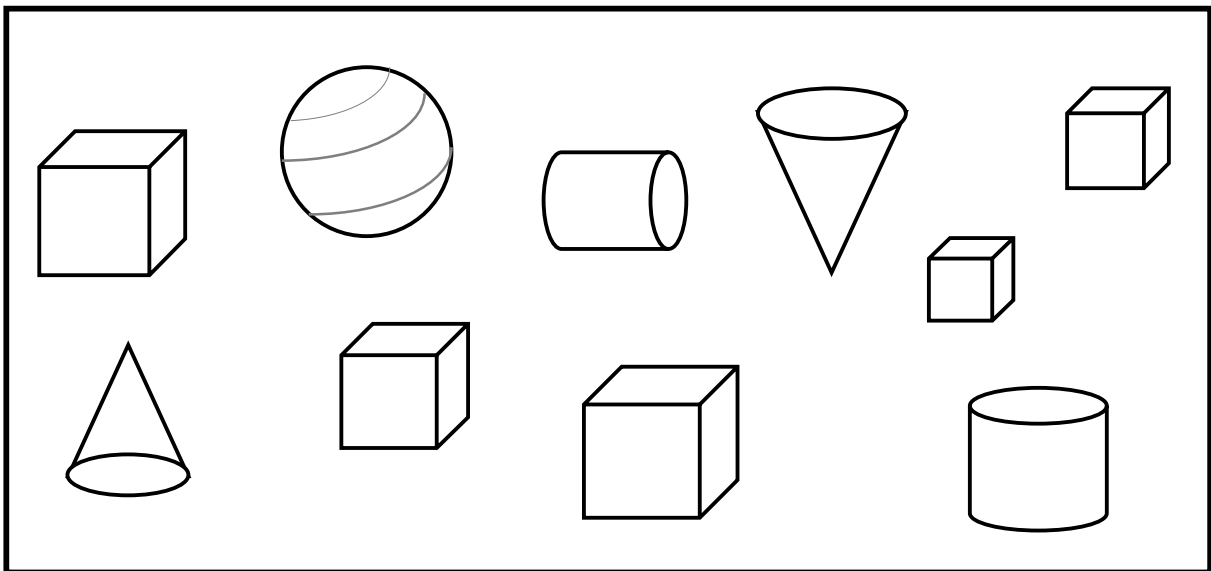
Check and Clean-up

- Check children's work. Have children put checked and completed worksheets in their take home (or homework) folders/cubbies.

Cube or Cone? Listen to the clues your teacher gives. Touch the shape that goes with the clues.
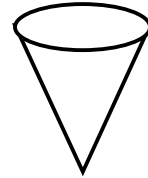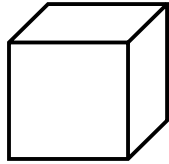
Color the cubes in the box below.

Touch and count each numeral starting with 71 and ending with 80. Color the numerals your teacher tells you.

| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |

Solve the subtraction problems below.

2 – 1 =	2 – 0 =
4 – 2 =	4 – 1 =
5 – 0 =	3 – 1 =

✍ Note home

✍ Nota para casa

Have your child practice the subtraction problems and tell how he/she found the answers. Ask your child to identify the 3-D shapes cone and cube. Ask your child to give you clues about each. Have your child say the numerals that they colored. Have your child count from 71-80 and identify these numerals.	Pídale a su hijo(a) que practique los problemas de resta y que le hable de cómo encontró las respuestas. Pídale a su hijo(a) que identifique los conos y los cubos. Pídale que le dé pistas para identificar cada una de estas formas geométricas. Pídale a su hijo(a) que le diga qué números coloreó. Pídale que cuente del 71 al 80 y que identifique estos números.