RightStart™ Mathematics

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KINDERGARTEN LESSONS

Second Edition

Activities for Learning, Inc.

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RightStart™ Mathematics Objectives for Kindergarten

Name _____ Year _____

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Numeration				
Can recognize quantities to 100 by grouping in 5s & 10s				
Knows even numbers				
Knows odd numbers				
Can count by twos to 100	N/A	N/A		
Can count by fives to 100	N/A	N/A		
Can count by tens to 100	N/A	N/A		
Money				
Knows name and value of penny, nickel, and dime	N/A			
Place Value				
Knows 10 ones is 1 ten	N/A			
Knows 10 tens is 1 hundred	N/A	N/A		
Knows 37 as 3-ten 7	N/A	N/A		
Addition				
Understands addition as combining parts to form a whole	N/A			
Can partition numbers 3–10 into parts	N/A			
Knows number combinations equal to 10	N/A	N/A		
Knows number combinations up to 10	N/A	N/A		
Subtraction				
Understands subtraction as missing addend	N/A	N/A		
Understands subtraction as separating	N/A	N/A		
Problem Solving				
Can solve addition problems	N/A	N/A		
Can solve missing addend problems	N/A	N/A		
Can solve basic subtraction problems	N/A	N/A		
Geometry				
Knows mathematical names for triangle, rectangle, and circle				
Knows mathematical names for cubes, cylinder, sphere, and cone				
Knows parallel and perpendicular lines				
Can continue a pattern on the geoboard	N/A			
Time				
Knows days of the week	N/A			
Knows months of the year	N/A			
Can tell time to the hour	N/A	N/A	N/A	
Can tell time to the half hour	N/A	N/A	N/A	
Measurement				
Can determine length in centimeters and inches	N/A	N/A	N/A	
Fractions				
Can divide into halves and fourths	N/A	N/A	N/A	
Knows unit fractions up to 1/10	N/A	N/A	N/A	

Kindergarten: Table of Contents

Kindergarten: Table of Contents

Kindergarten: Table of Contents

Kindergarten: Table of Contents

Lesson 2: Subitizing 4 and Patterning

OBJECTIVES:

1. To learn finger sets and tally marks for 4
2. To recognize quantities 1 to 4 without counting
3. To recognize and continue a simple pattern

MATERIALS:

1. Music for "Yellow is the Sun"
2. *Yellow is the Sun* book
3. Finger cards, cut apart (Appendix p. 2)*
4. Tally sticks
5. Tiles

ACTIVITIES FOR TEACHING:

Warm-up. Gather in the circle; continue teaching the song, "Yellow is the Sun."

Yellow is the Sun

Yellow is the sun.
This is only one. (Raise one finger.)

Why is the sky so blue?
Let me show you two. (Raise two fingers.)

Salty is the sea.
One more and it's three. (Raise three fingers.)

Hear the thunder roar.
Here's the mighty four. (Raise four fingers.)

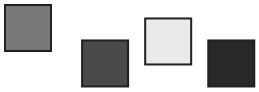
Ducks will swim and dive.
My whole hand makes five. (Raise five fingers.)

Read the book *Yellow is the Sun* to the children.

Quantities 1 to 3. Show the finger card* with 2 fingers for one to two seconds and ask the children to show the quantity with their fingers on their left hands and to build it with tally sticks. Repeat with finger cards 1 and 3. Also, clap 2 times. Ask: How many claps did you hear? [2] Repeat with 3.

Subitizing 4. Show 4 with your fingers and ask the children to show 4 with their left hand. Then show 4 tiles and say: This is 4. See the figures below.

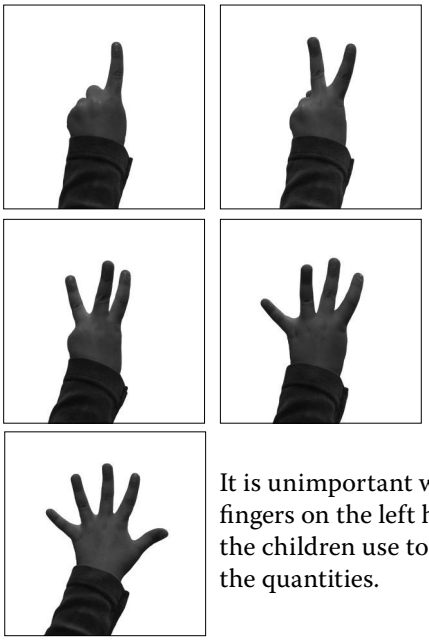
Four.



Four tiles.

Rearrange the 4 tiles and ask how many they see. Remove 1 tile and ask: How many? [3] Replace it and again ask: How many? [4] Now clap 4 times and ask: How many claps they hear? [4]

EXPLANATIONS:



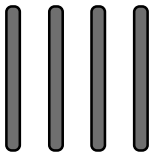
It is unimportant which fingers on the left hand the children use to show the quantities.

*The finger cards are found on page 2 in the Appendix. In future lessons, the dot, bead, and tally cards will be needed. They are also found in the Appendix pages 6, 7, and 19.

Use one color for the sets of finger cards, another color for the dot cards, a third color for the bead pattern cards, and a fourth color for the tally stick cards. You will need two of each of the four card sets.

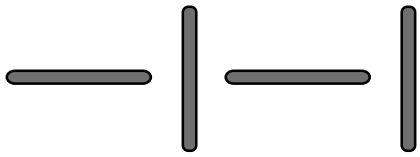
ACTIVITIES FOR TEACHING CONTINUED:

Changing quantities. Tell them to make 4 with 4 tally sticks. Then ask them to remove 2 sticks and say how many? [2] Ask them to add 1 and say how many? [3] Repeat with one more.



Four.

Introducing patterning. Take a group of tally sticks and lay one out horizontally. Place another next to the first vertically, the third one horizontally and the fourth one vertically. Give a child a tally stick and ask: What do you think comes next? Tell them we will call this the "do-re" (doe-ray) pattern. Tell the children to continue to lay out the pattern.



Continuing the pattern with tally sticks.

Next take out the tiles and lay out a red tile followed by a blue tile and then another red tile. Ask the children which color would come next in the do-re pattern? [blue] Ask the children to continue the pattern.

Continuing the do-re (AB) pattern.

Encourage the children make the same pattern with different colors.

In conclusion. Ask the children to say how many fingers they see while you do the following: Raise 4 fingers, then put 1 down and back up several times. [4, 3, 4, 3, . . .] Ask: Do you hear a do-re pattern? [yes]

EXPLANATIONS CONTINUED:

Our brains are wired to look for patterns.

Patterns are often named using letters of the alphabet. The letters are used sequentially, naming each different element of the pattern. For example, a strictly alternating pattern is AB. To avoid using the letters of the alphabet for beginning readers, we will use musical scale names to designate pattern names. The names are do (doe), re (ray), mi (me), fa (fah).

You might want to teach the children the "Do Re Mi" song from the "Sound of Music."

Conclusions may be a summary of the day's lesson or an expansion of the lesson to challenge higher level thinking.

K.CC.1

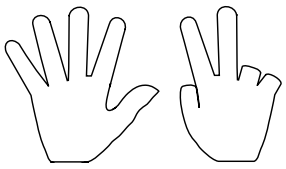
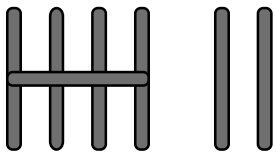
Lesson 8: Subitizing 7 and the Cotter Abacus

OBJECTIVES:

1. To subitize 7
2. To learn the terms *above* and *below*
3. To learn the terms *top* and *bottom*
4. To enter 1 to 5 beads on the Cotter Abacus without counting

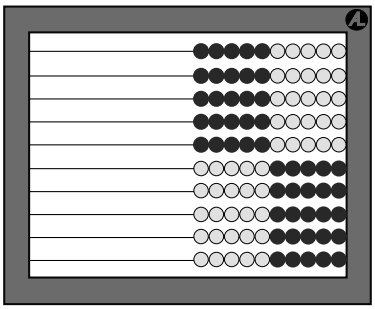
MATERIALS:

1. *Yellow is the Sun* book
2. Finger cards
3. Tally sticks
4. Tiles
5. Cotter Abacuses

ACTIVITIES FOR TEACHING:	EXPLANATIONS:
Warm-up. Continue reading the book and singing the song, "Yellow is the Sun."	
Show the finger cards 1 to 6 at random for 2 seconds and ask the children to show them on their fingers. Also have them show the number with tally sticks and say the numbers.	
Quantity 7. Show 7 to the children with your fingers. Ask them to show it on their fingers. Also ask them to build it with the tally sticks. Now, ask them to make a 7 with the tiles, using two colors as shown below.	It might help to say "sev-en" as you point to the "two" part of 7.
 Seven.  Seven.  Seven.	As this point, 7 must be shown as 5 on the left hand and 2 on the right, not, for example, as 4 on one hand and 3 on the other.
Above and below. To help the children understand the words *above* and *below*, ask the children is your nose above or below your mouth. Ask: Is your chin above or below your eyes? Repeat with different parts of the face using the words above or below.	The terms *above, below, top,* and *bottom* are part of the spatial terms suggested by the Common Core State Standards.
Now have the children show you something under the table or desk. Ask them to name something above their heads.	
Top and bottom. Point out examples of *top* and *bottom*, such as "Where is the *top* of the window" and "Where is the *bottom* of the window." Repeat for the top and bottom of a page in a book.	
Cotter Abacus. Show the children the Cotter Abacus. Help them learn to handle it with respect, as due any tool. You might give them a few minutes to make patterns and designs.	

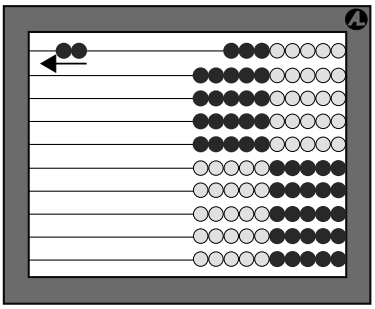
ACTIVITIES FOR TEACHING CONTINUED:

Entering quantities. Show them how to place the abacus with the circle logo at the top. This means the circle will be on the right and the wires horizontal. Demonstrate clearing the abacus by lifting the left edge so the beads fall toward the side with the circle. See the figure below.

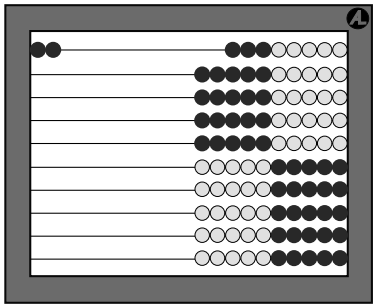


Cotter Abacus cleared.

Ask the children to clear the abacus. Ask them to show 2 with their fingers. Ask them to enter 2 on the top wire. See the figures below.

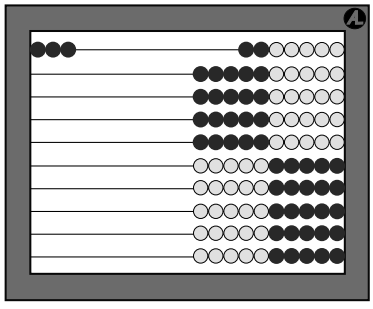


Entering 2 as a unit.

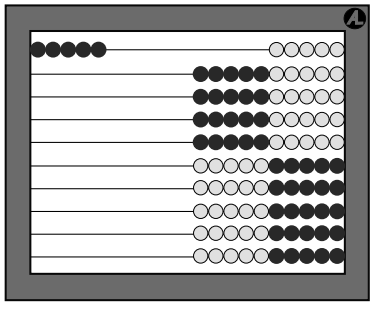


Two.

Ask them to clear the abacus. Then ask them to show 3 with fingers and enter 3 on the abacus. Repeat for 5 and ask how they could tell it was 5. [a whole hand, all the dark colored beads on a wire] Lastly, ask them to show 4 and enter 4.



Three.



Five.

In conclusion. Show 5 on your fingers and ask: How much is this? [5] Repeat for 7.

EXPLANATIONS CONTINUED:

To enter a quantity on the Cotter Abacus, move the beads from right to left. This allows the eyes to travel from left to right as in reading.

Quantities are entered on the abacus as a group; they are not counted. If a child counts when entering a quantity, simply say: Okay, now can you enter (3) without counting.

K.CC.1, K.G.1

Lesson 94: Dozens & Partitioning Teens into Tens

OBJECTIVES:

1. To introduce the term *dozen*
2. To partition teens

MATERIALS:

1. **Egg carton with 2 eggs or other objects**
2. Place-value cards
3. Cotter Abacuses
4. Dry erase boards
5. Worksheet 34, Partitioning Teens

ACTIVITIES FOR TEACHING:

Warm-up. Ask the children to count by 1s to 80.

Ask the children to count by 10s to 200.

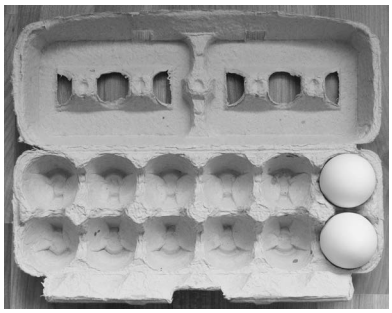
Ask the children to count by 5s to 100.

Ask: How much is 43 + 1? [44] How much is 44 + 2? [46] How much is 78 + 1? [79] How much is 99 + 1? [1 hundred]

Ask the children to show parallel lines using their arms. Then ask them to show perpendicular lines.

Ask the children to listen to the pattern and to continue it with the next number: 46, 47, 48; [49] 57, 56, 55; [54] and 50, 60, 70. [80]

Dozen. Show the children an egg carton. Tell them that it holds one *dozen* eggs. Open the carton and display it as shown below. Ask them: How many eggs would fit? [12] Ask: How many eggs are in a dozen eggs? [12] How many buns are in a package of a dozen buns? [12]



An egg carton.

Then ask the children to solve the following problem:

How many eggs are in 2 dozen eggs.

Let them solve the problem in their own way and to explain how they did it. Ask them to show their solution with place-value cards. [24]

If appropriate, ask them to find the number of eggs in 3 dozen. [36]

EXPLANATIONS:

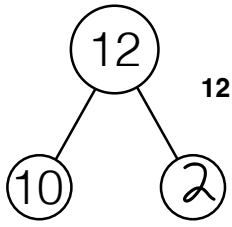
While the term dozen has virtually no mathematical significance, 12 continues to be important in a cultural sense. We have 12 in a dozen, 12 months in a year, 12 hours on the clock, and 12 inches in a foot.

Showing the egg carton with two eggs (or similar objects) makes the ten empty spaces more prominent.

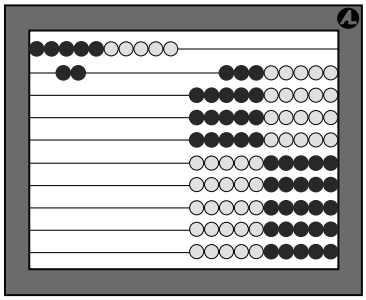
ACTIVITIES FOR TEACHING CONTINUED:

Ask the children if it is easier to count by dozens or by tens and why.

Partitioning the teens. Draw a part-whole circle set and write 12 in the whole and 10 in the left part-circle. Ask: What goes in the other part-circle? Ask them to demonstrate the partitioning on the abacus and to explain it.



12 = 10 + 2



Partitioning 12 into 10 and 2.

Next ask them to say and write the equation. [12 = 10 + 2] Also ask them for the inverse: What is 10 + 2? [12]

Repeat with 15 written in the whole-circle and 10 in the left part-circle. Continue with other teen numbers.

Practice. Ask the children: Sixteen is 10 and what. [6] Fifteen is 5 and what? [10] Thirteen is 3 and what? [10] Nineteen is 10 and what? [9]

Problem. Give them the following problem:

> Lee hid a dozen eggs. Lee's friends found 10 of them. How many of them are still hidden?

Ask: What does the word dozen means? [12] How many eggs were found? [10] How many eggs are still hidden? [2]

Worksheet 34. Ask the children to do the worksheet for partitioning the teens into 10 and another number. The problems and solutions are as follows:

15 = 10 + **5**
19 = 10 + **9**
13 = 10 + **3**
11 = 10 + **1**
17 = 10 + **7**
16 = 10 + **6**
14 = 10 + **4**
18 = 10 + **8**
12 = 10 + **2**
20 = 10 + **10**

In conclusion. Ask: How much is a dozen? [12] How much is a half dozen? [6]

EXPLANATIONS CONTINUED:

English-speaking children usually have difficulty conceptualizing the teen numbers as 10 + another number. In other words, the children tends to see 14 as 14 ones, rather than a ten and 4 ones. The following activities are designed to help them make that connection, which becomes harder since they started using the traditional names. Refer back to math way saying the numbers, if necessary.

K.NBT.1

Name: _____

15 = 10 + ____
19 = 10 + ____
13 = 10 + ____
11 = 10 + ____
17 = 10 + ____
16 = 10 + ____
14 = 10 + ____
18 = 10 + ____
12 = 10 + ____
20 = 10 + ____

Lesson 104: Comparing Weights

OBJECTIVES:

1. To become aware of weight
2. To introduce the term *heavier*
3. To compare weights

MATERIALS:

1. **Two identical glasses, one empty** and **with water**
2. Geometric solids
3. *Math balance, two weights, **two 4-inch (10 cm) paper cups,** and **two rubber bands**
4. **Small objects to weigh: plastic, metal, etc.**

ACTIVITIES FOR TEACHING:

Warm-up. Ask: How much is 15 plus 1? [16] How much is 15 minus 1? [14] How much is 10 plus 1? [11] How much is 10 minus 1? [9] How much is 12 plus 1? [13] How much is 12 minus 1? [11]

Ask the children: Is 1 plus 1, adding or subtracting? [adding] Is 9 and 2 more, adding or subtracting? [adding] Is 10 minus 1, adding or subtracting? [subtracting] Is taking 2 from 8, adding or subtracting? [subtracting]

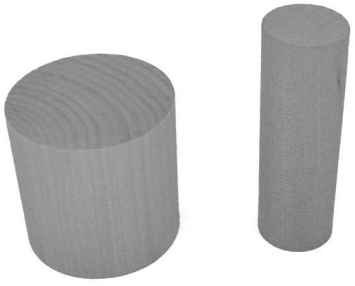
Ask the children: After adding on the abacus, will your answer be greater or less? [greater] After subtraction, will your answer be greater or less? [less]

Ask the children: How long is one edge of a tile? [1 inch] How long are 2 edges of a tile? [2 inches] How long are 3 edges of a tile? [3 inches] How long are all four edges of a tile? [4 inches]

Ask: Which is longer, an inch or a centimeter? [inch] Which is shorter? [centimeter]

Comparing weights. Set two glasses in front of the children, one empty and one half full of water. Ask one child to carefully lift the empty glass and set it down. Then ask him to lift the glass with water and tell him the second glass is *heavier*. Explain that the glasses look alike, but the one with water feels heavier.

Ask the children to find the two cylinders from the geometric solids. Ask: Which one is taller? [the right cylinder shown below] Ask one child to lift each one. Which cylinder is heavier? [the left cylinder]



The two cylinders.

EXPLANATIONS:

*To prepare the math balance to be used as a scale, punch holes in two paper cups and insert a rubber band in the holes as shown above. Instead of the rubber bands, twist ties or two paper clips per side will also work.

Clear plastic cups allow the children to see the contents of the cups more easily, but use only cups with plastic code 1. The code is found in the recycling triangle, usually on the bottom. A cup with plastic code 6 is brittle and often breaks when making the hole, leaving sharp edges.

ACTIVITIES FOR TEACHING CONTINUED:

Comparing weights using the scale. Hang a cup from each 10-peg on the math balance as shown below. Tell the children we will now use this as a scale and we will not using the numbers.

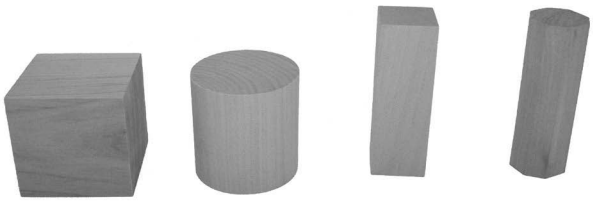
The math balance converted to a scale.

Ask the children: What do you think will happen if we put a blue weight in each cup? Tell them to try it. [stays balanced]

Comparing the solids using the scale. Ask: What do you think will happen if we put one cylinder from the geometric solids in each cup? Ask them to try it. [The cup with the heavier cylinder sinks.]

Ask them to choose any two geometric solids, guess which is heavier, and then check with the scale. Ask them to try several combinations.

As a challenge, give them several solids and ask them to use the scale to figure out which one is heaviest. Then ask them to put the solids in order from heaviest to lightest.



Four geometric solids in order by weight.

Comparing other objects using the scale. Ask them to compare two other objects, such as a piece of styrofoam and a piece of plastic or metal. Encourage them to find things to compare.

In conclusion. Ask: Can you always tell which of two things is heavier by just looking? [no] How can you find out? [by weighing]

EXPLANATIONS CONTINUED:

If necessary, move the little white weights to adjust the balance.

This can be done by first comparing any two items. Then take the heavier one and compare it with the others.

Your solids may have a different order because the weights may vary.

K.MD.1, K.MD.2