

Number Sense Interventions

Lesson 1

Learning Goals

Establish behavior boundaries
 Count to 10 orally
 Build numbers 1, 2 using blocks
 Number recognition 0-2
 Count and sequence to 2
 Count to 2 on fingers
 Make numbers 1, 2 on fingers
 Recognize quantities 1, 2
 Partners of 2 (1/1)
 Story problems and number sentences: 2 family
 Perform number operations on fingers
 Write the numerals 0-2
 Connect the quantity to numerals 0-2
 Solve written number sentences: 1 and 2 families

Materials

COPY

Cardinality Chart
 Subitizing Circle Cards (#1-12)
 Dot Chart for 2
 Partner Dot Card for 2
 Number Sentence Cards: $1 + 1 = 2$, $2 - 1 = 1$, $1 - 1 = 0$, $2 - 2 = 0$
 Lesson 1 Activity Sheet

★ *Teacher Tip:* It is important to gather and organize materials before each lesson to save valuable time.

GATHER

White board magnetic easel
 3 interlocking blocks in a plastic bag
 2 of each: pencils, erasers, crayons, and blocks
 Pencils without erasers and crayons

PREPARE

Put student names on Lesson 1 Activity Sheets.
 Number Recognition Cards (0-2); See *Chapter 1* for instructions on making Number Recognition Cards.

ESTABLISHING BEHAVIOR BOUNDARIES

- Say, When we work together, I expect you all to carefully listen and do your best. Okay? When I am talking, you should be listening. And when I call on one of you to speak, we will all listen to you. That is how we show respect for each other. It is important that we respect each other so we can all do our best.
- To show me you are ready to learn, your body should be still, sitting just like this, feet under the table, bottom on the chair, and hands to myself. Wait for imitation. Exactly! That shows me you are ready.

COUNTING WARM-UP

- Say, Let's count to 10. Use your inside voices and let's stay together. Ready? 1, 2, 3, 4, ... 10. Count slowly and clearly.

- Say, **Let's count around the group this time. Each of you will say the next number when it is your turn. I will start ... 1.** Point to the child to your right. Take a turn yourself.
- If a child says the incorrect number, then say, **That was a good try but the next number is ____.** Let's try again. For each error, back up 2 children and repeat so the child has an opportunity to be successful.

MAGIC NUMBER ACTIVITIES (Magic Number is 2)

★ Cardinality

MATERIALS: Cardinality Chart, 3 interlocking blocks in a plastic bag

- Lay the Cardinality Chart on the table and say, **This is a number chart. It has the numbers 1-10 across the bottom in a list.** Run your finger across the numbers.
- Point to the number 1 and say, **The first number is 1.** Hold up 1 block and say, **This is 1 block. How many blocks do I have?** Wait for a response.
- Put 1 block on the first block above the number 1 and say, **1 block.**
- Point to the number 2 and say, **The next number is 2.** Hold up 2 blocks—one in each hand—and say, **These are 2 blocks. 1, 2. How many blocks do I have?** Wait for a response.
- Put the blocks together and say, **2 blocks.** Then put them right above the number 2 on the chart.
- Say, **As we go up the list of numbers on the number chart** (gesture up the number list on the Cardinality Chart), **we add 1 block at a time. It is like climbing up steps, 1 at a time. See, 1** (put your finger on the block above 1) **and 1 more** (move to the top block above 2) **is 2.** Touch the number 2 and run your finger up the 2 blocks.
- Say, **Let's try that again! 1 and 1 more is ____.** If they do not answer right away, then use the previous gestures to scaffold the answer.

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1	2	3	4	5	6	7	8	9	10

Cardinality Chart [number chart]

★ Sequencing and Number Recognition 0–2

MATERIALS: Number Recognition Cards 0–2 (the 0 card is used for number recognition only—not sequencing), white board magnetic easel

- Say, **I have cards here with numbers on them. Say the numbers with me as I put them down. We will say the numbers together. Ready? 1, 2!** Put the cards down horizontally as if building a number list. Orient the cards toward the children.
- Hold up the Number Recognition Card 1 and say, **What number is this?** Wait for a response.
- Hold up the 2 card and say, **What number is this?** Wait for a response.
- Hold up the 0 card and say, **What number is this?** Wait for a response.
- Say, **That's right, this is the number 0. Can you show me 0 blocks?** Children should respond with showing empty hands or saying, "No blocks" or "Nothing."
- Say, **Each day we are going to have a Magic Number. Today our Magic Number is 2.** Hold up the Number Recognition Card 2 and say, **What number is this?** Wait for a response.
- Say, **That is right. This is the number 2. Our Magic Number today is 2.**
- Say, **This is how we write a 2. Watch carefully. Around and across.** Write a 2 on the white board magnetic easel (no loop at the bottom of the numeral 2).



Number Recognition Cards

- Say, **Now it is your turn! We are going to write a big number 2 in the air. Follow my finger. Ready? Copy me!**
- Trace a number 2 in the air backward (about 18 inches high) so that the children will see it in the correct orientation. Say, **Let's try that again!** Repeat twice.
- Say, **Let's play a game. I will hold up a card with a number on it, and I want you to tell me the name of the number. I will point to you when it is your turn, okay? Everyone else, say it in your mind, not out loud.**
- Say, **But, if the Magic Number comes up, I want everyone to say the number, even if it is not your turn. Pay close attention so you will know when our Magic Number comes up!**
- Go around the group, showing each one a different number from 0–2 (not in order). Make sure all children can see the number. Go around the group three times.

★ Error Correction

- If the children do not *all* answer for the Magic Number, then say, **This is the Magic Number so everyone is supposed to answer. Let's try that again!** Hold up the number 2 and say, **What number is this?**
- If a child incorrectly answers, then say, **That is a good try but the number is ____.** Put the card down, hold it up again, and say, **What number is this?**

★ Finger Counting

- See Chapter 1 for a discussion of counting styles.
- Say, **Let's count to 2 on our fingers. Watch me. 1, 2.** Demonstrate starting with index finger.
- Say, **Now you try! 1, 2.** Make sure all the children are correctly counting. **Let's try again. 1, 2.**
- Say, **Now let's try on your other hand. 1, 2. Let's try again. 1, 2.**

SUBITIZING QUANTITIES (0-2) ACTIVITIES

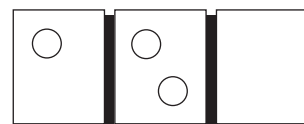
★ Finger Automaticity

- Say, **Let's practice making numbers on our fingers quickly. Let's start with 1. This is how we make 1.** Put up an index finger. **Everyone show me 1 on your fingers.**
- Make sure everyone shows his or her index finger.
- Say, **This is how we make 2.** Show 2 on your fingers. **Everyone show me 2 on your fingers.** Correct any errors.
- Say, **Now we are going to play a game. When I say a number, you hold up that many fingers.** Say the numbers 1 or 2 in random order. Practice until all children are proficient (quick), but no more than 10 trials.

★ Recognizing Sets

MATERIALS: Subitizing Circle Cards #1-12

- Say, **Now I am going to hold up a card with some circles on it, and I want you to tell me how many circles are on the card. Try to tell me as fast as you can without counting. Let's try some together.**
- Hold up Subitizing Circle Card #5 (with 1 circle) and say, **How many circles?** After 1 second, put the card down. Use error correction previously listed if needed.
- Say, **Let's try another one!** Hold up card #9 (with 2 circles) and say, **How many circles?** After 1 second, put the card down. Use error correction if needed.
- Hold up card #1 (with 0 circles) and say, **How many circles?** After 1 second, put the card down. Children may say "nothing" or "no circles." If so, then ask, **What number means nothing or no circles?**



Subitizing Circle Cards

- Say, **Now we are going to play a game. Each of you will take a turn telling how many circles are on the card. If it is not your turn, then say the answer in your minds, not out loud.**
- Go around the group three times, showing each child a different card using the following protocol.
 - Hold up the card and say, **How many?** Wait 1 second. Put the card down.
 - If the child does not respond or shows indications of counting, then put the card down and say, **Try to tell me right away—just by looking, not counting.** Hold it up again and say, **How many?** Wait 1 second. Put the card down.
 - If the child responds incorrectly, then say, **That is a good try, but there are __ circles.** Put the card down, hold it up, and say, **How many?** Wait 1 second. Put the card down.

PARTNERS OF 2 ACTIVITIES

MATERIALS: Pencil, Partner Dot Cards for 2, Dot Chart for 2, Number Sentence Cards

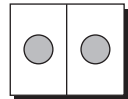
Note: Do not use the words *plus* or *equals* until it is introduced in the activity.

★ Partners of 2 (1 + 1) Using Dot Chart for 2

- Put down the Dot Chart with 2 dots. Orient it horizontally.
- Say, **See, here are 2 dots. 1, 2.** Touch the dots as you count. **I can break them into 2 parts with my pencil.** Separate the 2 dots using a pencil.
- Say, **1 and 1 is 2.** Point to the dots when you say “1 and 1” and circle around the 2 dots when you say “2.”
- Say, **We call 1 and 1 partners for 2 because together they make 2. I made a partner card so I do not have to use my pencil to make parts. See how it looks the same.** Put the Partner Dot Card for 2 above the Dot Chart for 2. Orient it horizontally. **1 and 1 is 2.** Remove the chart and pencil.



Dot Chart for 2

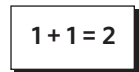


Partner Dot Card for 2

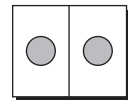
★ Partners and Number Sentences

$$1 + 1 = 2$$

- Put down the $1 + 1 = 2$ card and say, **Here is another way to show 1 and 1. This is a number sentence. We call this *plus*. It means to put these two amounts together. 1 and 1 or 1 plus 1.** Gesture to each addend as you say them.
- Point to the equals sign and say, **We call this *equals*. Equals means the same amount as 1 plus 1 is the same amount as 2.** Gesture to each part of the number sentence as you say it. **1 plus 1 equals 2.**
- Point to the plus sign and say, **What do we call this?** Repeat.
- Point to the equals sign and say, **What do we call this?** Repeat.
- Say, **Let’s say this number sentence together: 1 plus 1 equals 2.**
- Put down the Partner Dot Card for 2 and say, **See how the dots on each part match the numbers on the plus card. 1 plus 1 equals 2.** Point to each dot, and then circle the 2 dots.
- Say, **Let’s say it again. 1 plus 1 equals 2.** Touch the numbers and the signs on the Number Sentence Card.



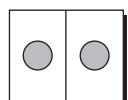
Number Sentence Card for 1+1=2



Partner Dot Card for 2

$$2 - 1 = 1$$

- Using the Partner Dot Card for 2, say, **I can use this partner card to show a take-away problem, too. Watch what I do.**
- Say, **I have 2, but if I take away 1 (cover up the dot on the left), then I have 1 left.** Point to the remaining dot. Demonstrate again.



Partner Dot Card for 2

- Put down the $2 - 1 = 1$ card and say, **Here is another way to show 2 take away 1. We call this minus.** Point to the minus sign. **What do we call this?** Wait for a response. **Minus means take away.**
- Say, **So this says 2 minus 1 equals 1. Let's say this number sentence together. 2 minus 1 equals 1.** Repeat. Touch the numbers and the signs in the number sentence.
- Say, **That means that 2 take away 1 is the same amount as 1.**
- Put down the $2 - 2 = 0$ card and using the Partner Dot Card for 2 say, **If I have 2 dots (circle the 2 dots) and take away 2 dots (cover both dots), how many dots are left?** Wait for a response.
- Say, **So 2 minus 2 equals 0.** Repeat. Touch the numbers and the signs on the Number Sentence Card.

$$2 - 1 = 1$$

Number Sentence Card for $2-1=1$

$$2 - 2 = 0$$

Number Sentence Card for $2-2=0$

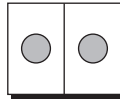
★ Review

- Put the $1 + 1 = 2$, $2 - 1 = 1$, and the $2 - 2 = 0$ cards next to each other above the Partner Dot Card for 2.

$$1 + 1 = 2$$

$$2 - 1 = 1$$

$$2 - 2 = 0$$



- Say, **Let's say these 1 more time. 1 plus 1 equals 2, 2 minus 1 equals 1, and 2 minus 2 equals 0.** Gesture using the Partner Dot Card for 2 as you say each number sentence.

STORY PROBLEMS

MATERIALS: 2 of each: pencils, erasers, crayons, blocks; Number Sentence Cards

- Say, **Now I am going to tell you a story.** Give a pencil to a child sitting nicely and say, (Child) has 1 pencil. His/her teacher gave him/her 1 more pencil (give the child another pencil). **How many pencils does (Child) have now?**
- Hold up the $1 + 1 = 2$ card and say, **That is right because 1 pencil plus 1 pencil equals 2 pencils.** Point to the numbers as you say them.
- Say, **This story is going to be a little different.** Give another child an eraser and say, (Child) has 1 eraser. His/her teacher takes the 1 eraser (take the eraser). **How many erasers does he/she have now?**
- Children may say nothing or no erasers. If so, then ask, **What number means nothing or no erasers?**
- Hold up the $1 - 1 = 0$ card and say, **See, this says that 1 eraser minus 1 eraser equals 0 erasers.** Point to the 0 and say, **What number is this?**
- Say, **Here is another story.** Give another child 2 crayons and say, (Child) has 2 crayons. **The teacher takes 1 of his/her crayons (take 1 crayon). How many crayons does (child) have now?**
- Hold up the $2 - 1 = 1$ card and say, **That is right because 2 crayons minus 1 crayon equals 1 crayon.**
- Say, **Here is 1 more story.** Give another child 2 blocks and say, (Child) has 2 blocks. **The teacher takes the 2 blocks (take 2 blocks). How many blocks does (child) have now?** Children may say nothing or no blocks. If so, then ask, **What number means nothing or no blocks?**
- Hold up the $2 - 2 = 0$ card and say, **See, this says 2 blocks minus 2 block equals 0 blocks.**
- Point to the 0 and say, **What number is this?**

$$1 + 1 = 2$$

Number Sentence Card for $1+1=2$

$$1 - 1 = 0$$

Number Sentence Card for $1-1=0$

$$2 - 1 = 1$$

Number Sentence Card for $2-1=1$

$$2 - 2 = 0$$

Number Sentence Card for $2-2=0$

NUMBER SENTENCES ON FINGERS

MATERIALS: Number Sentence Cards

Note: See Chapter 1, Finger Counting, for a trajectory of solving number sentences on fingers.

$1 + 1 = 2$

- Hold up the $1 + 1 = 2$ card and say, **Watch me do this using my fingers.**
- Say, **The first number is 1. This is 1 finger.** Hold up your index finger on your right hand.
- Point to the $+ 1$ on the card and say, **This says $+ 1$ so I will put up 1 more finger.** Put up 1 finger on the left hand.
- Say, **How many fingers do I have up? That is right. 1 plus 1 equals 2.** Emphasize each finger as you say “1 plus 1” and both together as you say, “equals 2.”
- Say, **Now you try it. 1 (check all hands) plus 1 (check all hands) equals 2.** Repeat.

$1 + 1 = 2$

Number Sentence Card for $1+1=2$

$2 - 1 = 1$

- Put the $2 - 1 = 1$ card in front of you. Say, **Watch me do this on my fingers.**
- Say, **The first number is 2. I will put up 2 fingers.** Put 2 fingers up at once, not one at a time.
- Say, **Now I will put them on the table like this.** Put 2 fingers on the edge of the table.
- Say, **This says take away 1 or minus 1. Watch how I take away 1 finger!** Demonstrate holding 1 finger with your other hand, covering it.
- Say, **How many fingers are not covered? That is right. 2 minus 1 equals 1.** Demonstrate again as you speak.
- Say, **Now you try it. 2 (check all hands) minus 1 (check all hands) equals 1.** Repeat.

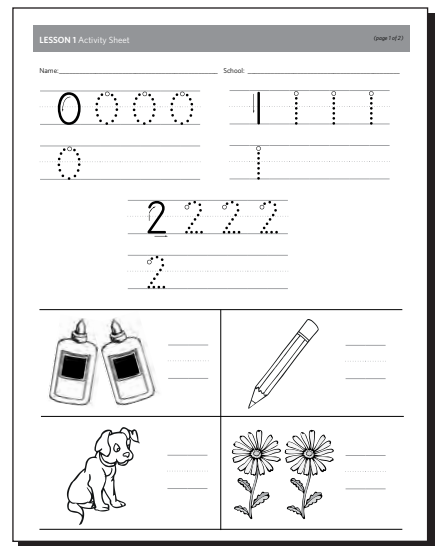
$2 - 1 = 1$

Number Sentence Card for $2-1=1$

WRITTEN NUMBERS

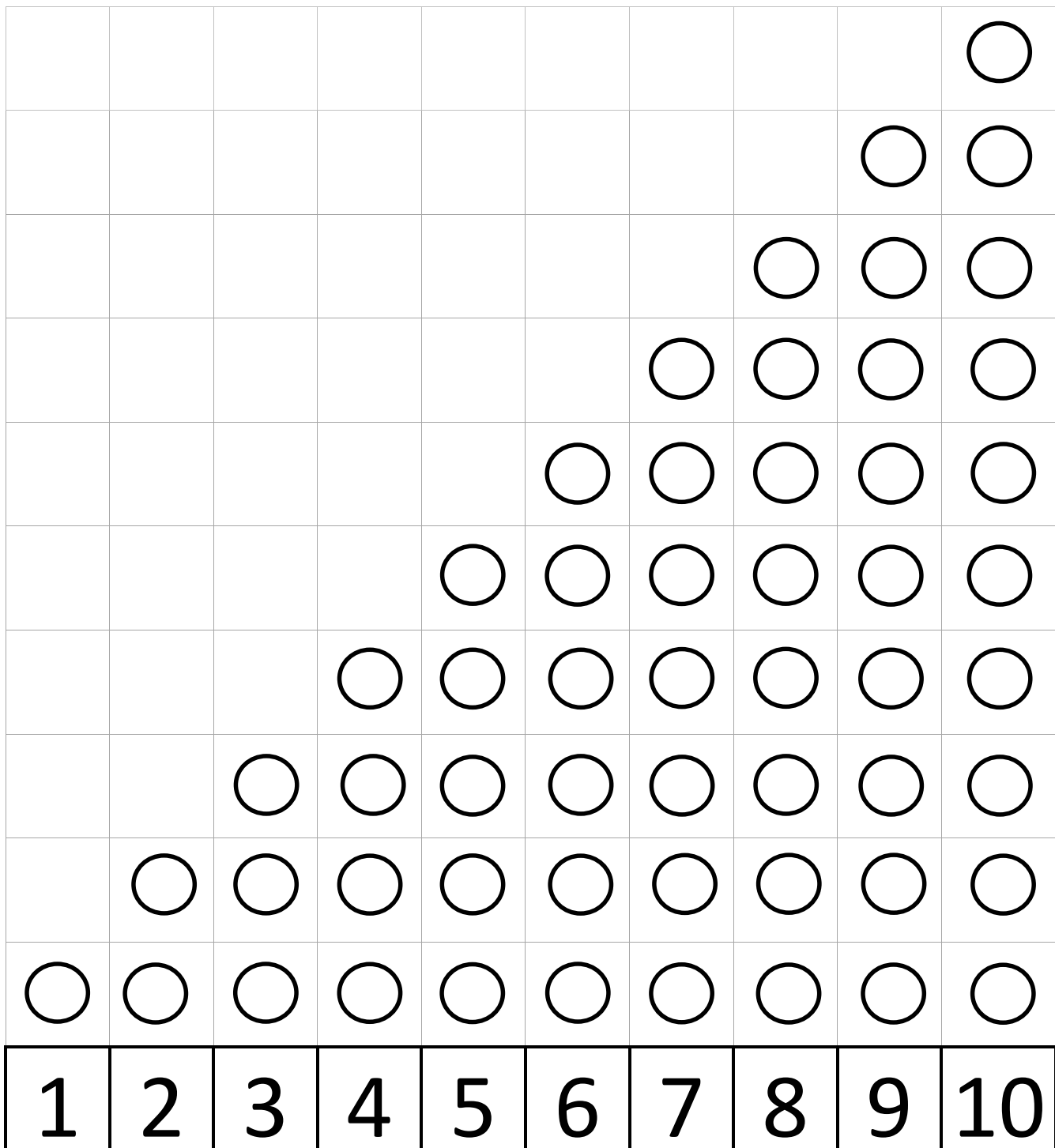
MATERIALS: Lesson 1 Activity Sheet, pencils, crayons

- Say, **Now we are going to practice writing numbers. Here is a paper with the numbers 0, 1, and 2 on it. I would like you to trace over the numbers with your pencil. Do your best to stay on the dotted lines, but do not erase if you make a mistake. Just try it again. Under the dotted numbers is a place to copy the numbers on your own. Then write the number that tells us how many things are in the box.** Point to the pictures at the bottom of the page.
- As each child finishes, have him or her turn the paper over and say, **Trace the answer for these number sentences. Figure them out on your fingers and see if you get the same answer!** If some children finish early, then they can color the objects on the paper. Have children self-correct their papers by orally counting the objects. Do not let a child color an incorrect paper.



Lesson 1 Activity Sheet

Cardinality Chart



Subitizing Circle Cards

1

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SUBITIZING CIRCLE CARDS

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
SUBITIZING CIRCLE CARDS

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
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
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
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Subitizing Circle Cards

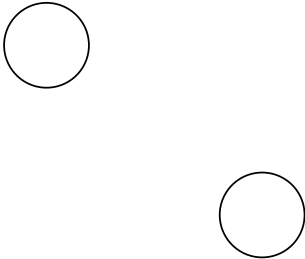
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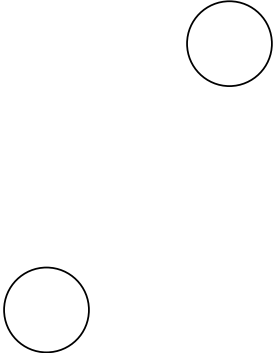
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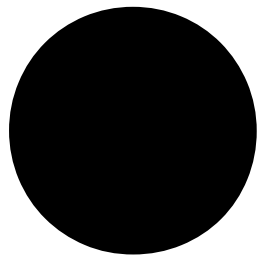
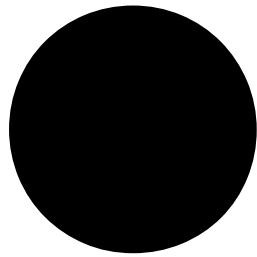
SUBITIZING CIRCLE CARDS

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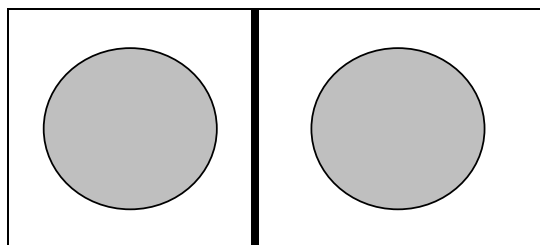
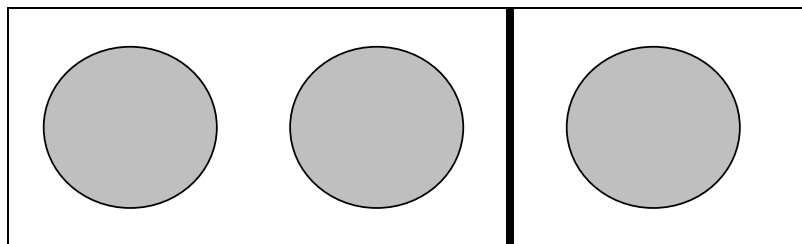
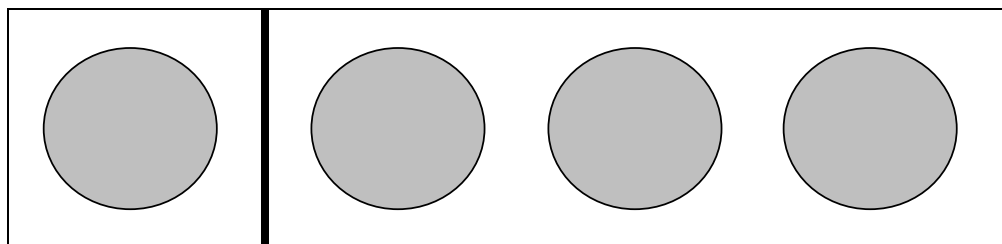
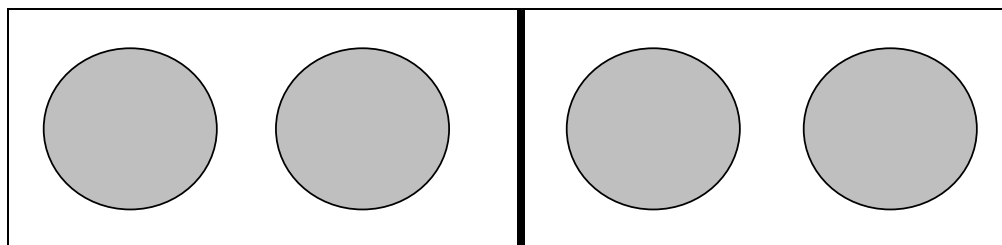
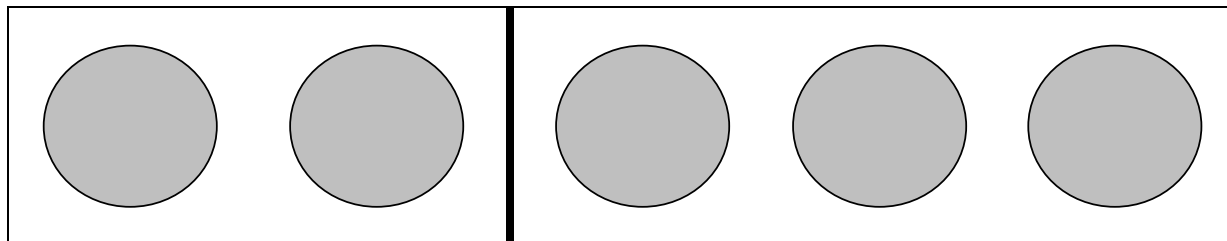
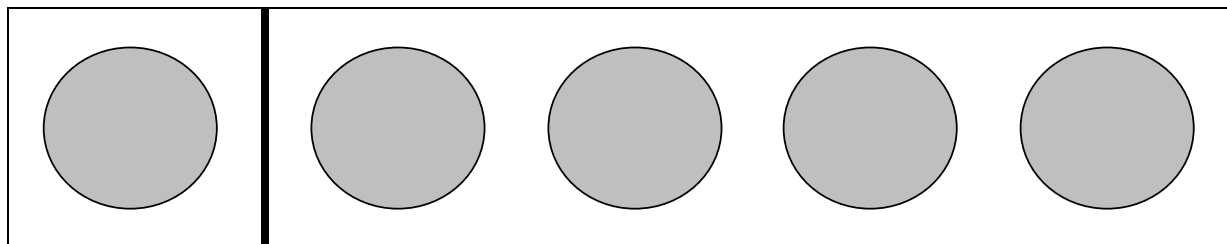
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SUBITIZING CIRCLE CARDS



Partner Dot Cards

(page 1 of 1)



$$2 - 2 = 0$$

$$2 - 1 = 1$$

$$1 + 1 = 2$$

$$1 - 1 = 0$$

LESSON 1 Activity Sheet

Name: _____ School: _____

