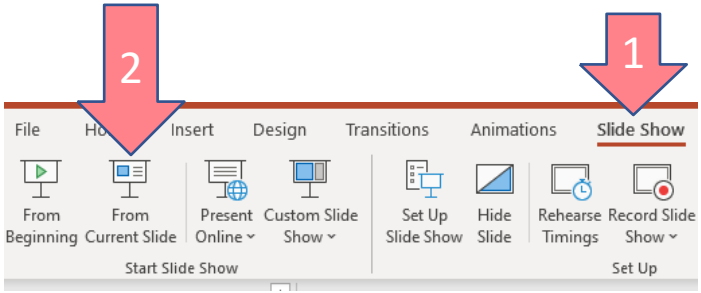
Kindergarten NUMBER SENSE Routines

Days 21-40

HOW TO RUN POWERPOINT IN SLIDE SHOW MODE:

Slides with animation features, must run in Slide Show mode of PowerPoint for the animations to work correctly.

1. Select <Slide Show> from the menu at the top
2. Select <From Current Slide>



HOW TO ANNOTATE STUDENT THINKING ON THE SLIDE:

- With the slide in Slide Show mode, right click on the slide
- Select <Pointer Options> then choose <Pen>

How to facilitate Rapid Naming

This routine is designed as a building block to arithmetic fluency. Research indicates that a student's ability to "rapid name" correlates to the student's skill in both reading and mathematical fluency.

To facilitate this routine,

1. Tell students to focus very carefully on the images that will appear on the screen.

2. Say, "As the images appear, say the name of the image out loud. We will be calling out the name of each item together. Try to name the image right when it appears."

3. Monitor students' ability to rapid name the images.

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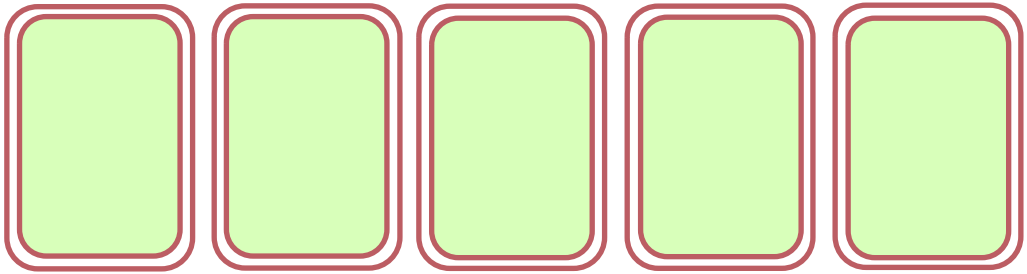
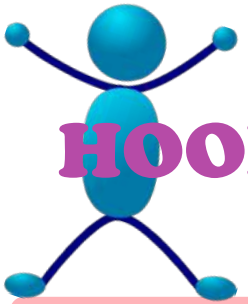
Day 21

SAY: Stay very focused to the board. The little doors will open briefly to reveal some number representations. We're going to see if we can name each of the numbers before the door closes shut again. If it gets hard, keep trying. It'll get easier the more we practice. Ready?

****CLICK ONCE to begin the automated reveal process.*





HOORAY!

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Rapid Naming

K.CC.B

How to facilitate Same But Different

At the start of this routine, students are shown two images. They are asked to identify not only the attributes that are the SAME between the two objects, but also the attributes that are different. This routine helps build students' grayscale thinking where things do not have to be all one or the other, they can be both at the same time.

To facilitate this routine,

1. Ask your students to think about what is the same about the two objects AND what is different. If scaffolding is needed, you can ask them to first think about how the objects are the same. Discuss. Then ask how the objects are different. Discuss.

2. Ideally, students will state how they are same and different in one sentence: For example, when shown a hula hoop and dinner plate, the student may respond, "They are both round, but one is a toy, and the other is a dish."

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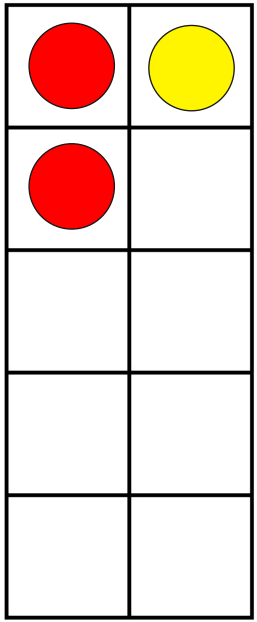
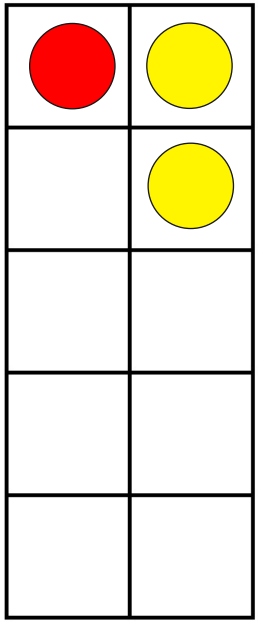
Same But Different

ASK: How are these two images the SAME but DIFFERENT?
FOCUS: The focus is on decomposing numbers less than ten in various ways and recognizing that it still has the same total.





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Same But Different

How to facilitate Clue by Clue

During this routine, students are shown a group of objects. Then they are given clues about the object's attributes that helps them to narrow the possibilities down to just one possible object from the group.

To facilitate this routine,

1. Show the group of objects to your students.

2. Tell students that you are thinking of ONE of these objects and you will give them clues to help them discover which object you are secretly thinking about.

3. Reveal the first clue. Ask students to think about which objects could be your mystery object. Which objects cannot be the mystery object. Discuss.

4. Use the annotation tool to visually mark off objects that do not fit the clue. In Slide Show mode, right click to annotate on the slide. Select >Pointer Options>Pen. Cross off images as students determine it does not fit the clue. The answer is revealed after Clue 3 is shown.

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Clue by Clue

Day 23

ASK: Can you use the clues to guess which bear I am?
FACILITATION NOTE: Use the annotation tool to mark off bears that do not fit the clues.

Clue 1
Five of us are the same color

Clue 2
I am out of the pool

Clue 3
I am a large bear

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Clue by Clue

K.MD.B.3

How to facilitate More or Less

For this routine, students will determine which of the images shows "more" or "less" or if the two images show "equal" values.

To facilitate this routine,

1. Show the two images.
2. Ask the question shown on the slide.
3. Allow students to discuss their ideas with a partner first (this gives them time to gather their ideas and allows all students an opportunity to talk).
4. Ask a few students to share their ideas with the whole group.

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Day 24

SAY: This is a scale. It is used to measure the weight of things. The veterinarian wants to weigh these two dogs.
ASK: Which dog do you think will have a heavier weight? How do you know?

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More or Less

K.MD.A.2

How to facilitate Math Talks

This routine is designed to elicit multiple strategies and provide opportunities for students to reason about numerical relationships and make mathematical connections.

To facilitate this routine,

1. Show the image. Pose the problem by reading the prompt given on the slide.
2. Ask students to use the discreet signal system that has been established as a classroom Number Sense Routine norm – i.e., a thumbs up in front of their chests when they have an answer in mind.
3. When most students have signaled that they are ready, call on students to share their strategies as you annotate the answers they provided.
4. It is important to remain neutral as students respond; avoid indicating whether the student is correct or incorrect at this point in the discussion.
5. Encourage students to actively listen to each other's ideas, ask their classmates clarifying questions, and connect their own strategies to the other strategies that have been offered. Be patient and persistent – these skills will take time to develop.

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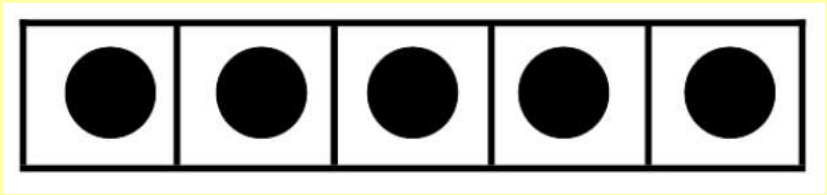
Day 25

FOCUS: Five
ASK: How many dots?
ASK: How did you count them?
ANNOTATION: Record student thinking with the pen or with gestures. Include written equations if appropriate.
SOME OF THE POSSIBLE STRATEGIES:

- Five Frame Structure – students may know the frame holds five
- Doubles – students may have seen two dots, two dots, and one extra dot
- Counting On – students may have seen three dots and then counted on three, four, five
- Count All – students may have counted one-by-one

ASK/DISCUSS: Were any of the strategies we talked about today similar?
ASK/DISCUSS: Which strategy do you think was most efficient for counting THESE dots? Why?



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Math Talks

How to facilitate Number Strings

This routine includes a set of related math problems designed to teach strategies based on number relationships. To facilitate this routine,

1. Show the visual prompt. Ask the prompt question. Ask students to use the discreet signal system that has been established as a classroom Number Sense Routine norm – i.e., a thumbs up in front of their chests when they have an answer in mind.

2. When most students have signaled that they are ready, call on students to share their strategies. Decide if you are going to model the strategy shared. The goal is to find efficient ways to solve the problem accurately.

3. Advance the slide to progressively include additional problems within the number string.

4. If a number string's purpose is a certain strategy to be developed and that strategy is not emerging from students, then you may need to ask questions that encourage students to consider the strategy that is intended to be developed.

5. Throughout the routine, encourage students to actively listen to each other's ideas, ask their classmates clarifying questions, and connect their own strategies to the other strategies that have been offered. Be patient and persistent – these skills will take time to develop.

Day 26

FOCUS STRATEGY: Counting On
There are five images with today's routine. Advance the slide to see each one.
Allow students to share strategies before advancing to the next slide within this routine.
SAY: I had some bears in a box. How many bears? How do you know?
GOAL: Students will subitize small grouped quantities and then COUNT ON to find the total amount.
Remember to allow several students to share their strategy. Celebrate the variety of strategies that will emerge.
Write related math expressions when appropriate (i.e., 3+1)

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Number Strings

K.CC.B

How to facilitate Quick Count

Quick Count is an instructional routine designed to build on students' natural ability to subitize (recognize the quantity of objects in sets of 1-5 without counting the objects one-by-one). This routine will help students become more aware and purposeful when subitizing and to apply subitizing skills when finding the total quantity of larger sets.

This routine follows a developmental progression with slight changes in the routine after several of the same type are presented.

Step-by-step directions are provided on each slide. Typically, a Number Sense Routine is one slide per day. A Quick Count routine is a single routine like all the other routines but contains more than one slide as part of that day's routine.

The Quick Count progression of skills is listed below:

- 5 subitizing routines
- 3 comparative quantities routines
- 6 composite subitizing routines that ask students to create an equation
- 6 teen number routines with a group of 10 ones and some additional ones

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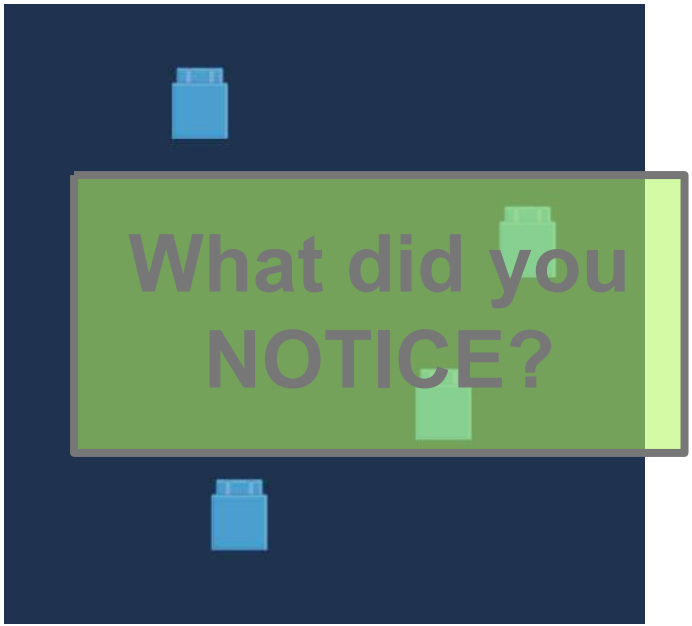
Quick Count

Day 27

SAY: I am going to show you an image. The image will appear for only two seconds, so pay close attention – I want you to remember what you saw. Remember, the image will appear and disappear quickly, you won't have time to count each object – see if your brain can just recognize how many objects without even counting.
****CLICK ONCE to begin the automated reveal process.*
[Then allow students to share what they noticed – do not correct inaccurate observations – the image will be shown again]



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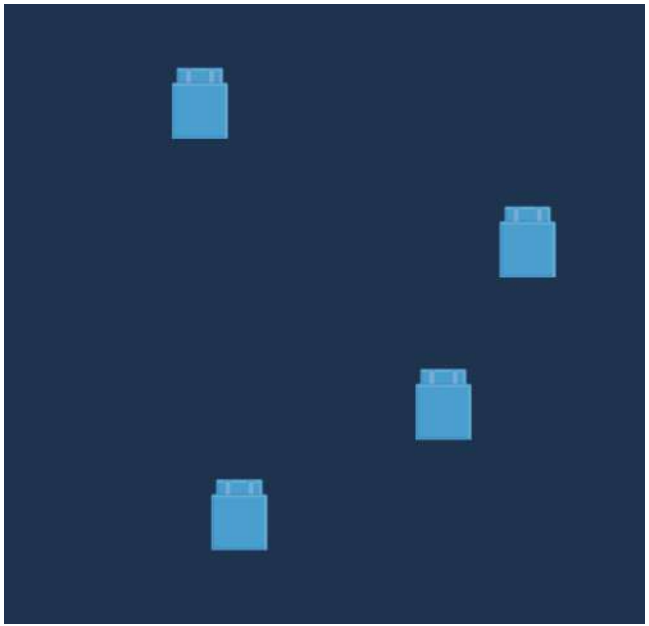
Quick Count

K.CC.B.4

Day 27

SAY: Here is the image again. This time it will not disappear.
ASK: Did you think there were 4 counters?
ASK: What if there was one fewer cube? How many cubes would we have then?



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Quick Count

K.CC.B.4

How to facilitate GeoChat

This routine is designed to build students understanding of various geometric concepts and the specialized vocabulary required to talk about geometric shapes.

To facilitate this routine,

1. Show the image on the slide
2. Ask the question shown on the slide.
3. Allow students to discuss their ideas with a partner first (this gives them time to gather their ideas and allows all students an opportunity to talk).
4. Ask a few students to share their ideas with the whole group.
   The focus of these number sense routines is for STUDENTS to do most of the talking as they make sense of the math. Encourage students to develop their mathematical vocabulary in a way that allows them to talk about their mathematical ideas with others.
5. Prompt students to also answer the question "How do you know?"

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GeoChat

SAY: Let's play a game of "I Spy". Look closely at this room. Do you see any CIRCLES?
Give students time to look at the picture. Have students name objects.
Consider using the annotation pen to outline the targeted shapes that students name.

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GeoChat

How to facilitate Splat!

This routine is designed to help students use strategies to count quantities efficiently, build addition and subtraction fluency within 10, and develop an understanding of the relationship between addition and subtraction facts.

To facilitate this routine,

1. Follow the prompts provided with each animation.

2. Students will be shown a set of dots. They will be asked how many dots are on the slide. Ask a few students, "How many dots do you see?"

3. Then ask students to explain how they counted the set of dots. As students explain their strategy (one-by-one counting, grouping, counting by 2s, etc.), annotate student thinking by writing on the slide or through simple gestures.

4. As the animation continues, a Splat! will cover some of the dots. Ask students to determine how may dots are hiding under the Splat! The student explanation of how they know is the most important part of this routine. Listen and celebrate the various efficient strategies that students share.

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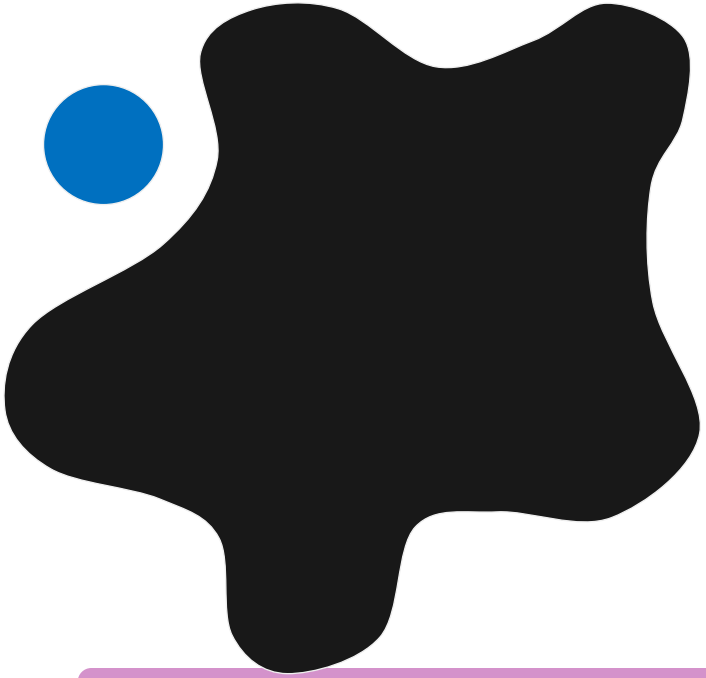
DIRECTIONS: Click to view animations. Read each prompt as you go through the routine.
Remember to use gestures to annotate student thinking. Allow multiple students to share ideas.

4

How many blue

What can we learn from this picture?



Splat!

Day 30

ASK: How are these nuts and bolts the SAME but DIFFERENT?
FOCUS: The focus is on attributes (both metal, both have hexagon shapes, one is long/other is not, etc.)

nuts

bolts

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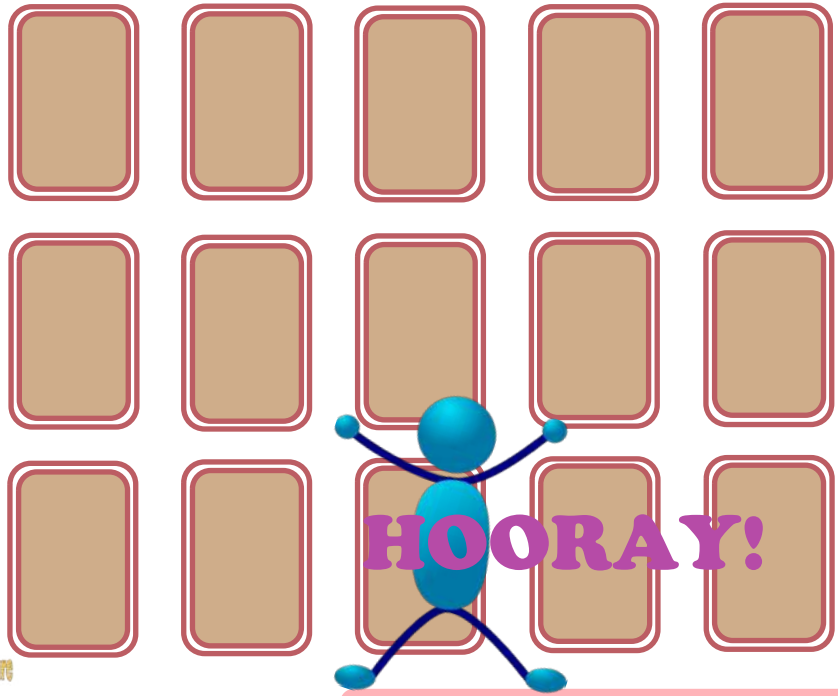
Same But Different

K.MD.A.2

Day 31

SAY: Stay very focused to the board. The little doors will open to reveal a number representation.
We're going to see if we can say each of the values before the next door opens.
Watch for some to be equal to zero. What will we see if the value is zero? Ready?
****CLICK ONCE to begin the automated reveal process.*



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Rapid Naming

K.CC.B

Day 32

ASK: Which pencil do you think is longer? How do you know?

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More or Less

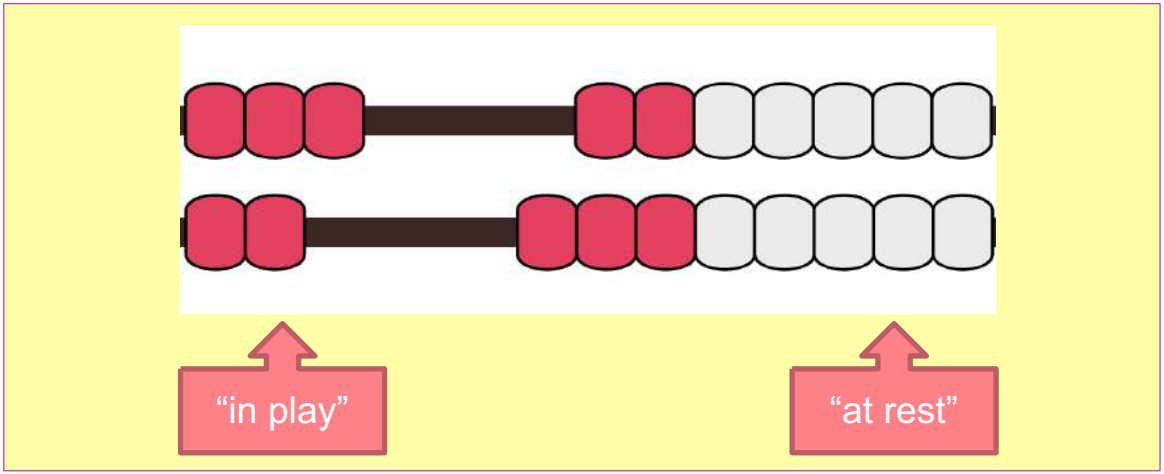
K.MD.A.2

Day 33

FOCUS: Five
SAY: These beads are “in play”. These beads are “at rest”.
ASK: How many beads are “in play”?
ASK: How did you count them?
ANNOTATION: Record student thinking with the pen or with gestures. Include written equations if appropriate.
SOME OF THE POSSIBLE STRATEGIES:

- Doubles – students may have seen two beads and two beads
- Counting On – students may have seen two beads at the top and then count on the beads at the bottom two, three, four
- Count All – students may have counted the four beads one-by-one
- Use the Five/Ten Structure – students may have considered the 5 red beads or the 10 total beads on each row

ASK/DISCUSS: Were any of the strategies we talked about today similar?
ASK/DISCUSS: Which strategy do you think was most efficient for counting THESE beads? Why?



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Math Talks

Day 34

ASK: Can you use the clues to guess which bird I am?
FOCUS: Vocabulary development (BELOW, ON, NEXT TO)

Clue 1
I am BELOW the bird nest

Clue 2
I am ON a tree branch

Clue 3
I am NEXT TO the kite

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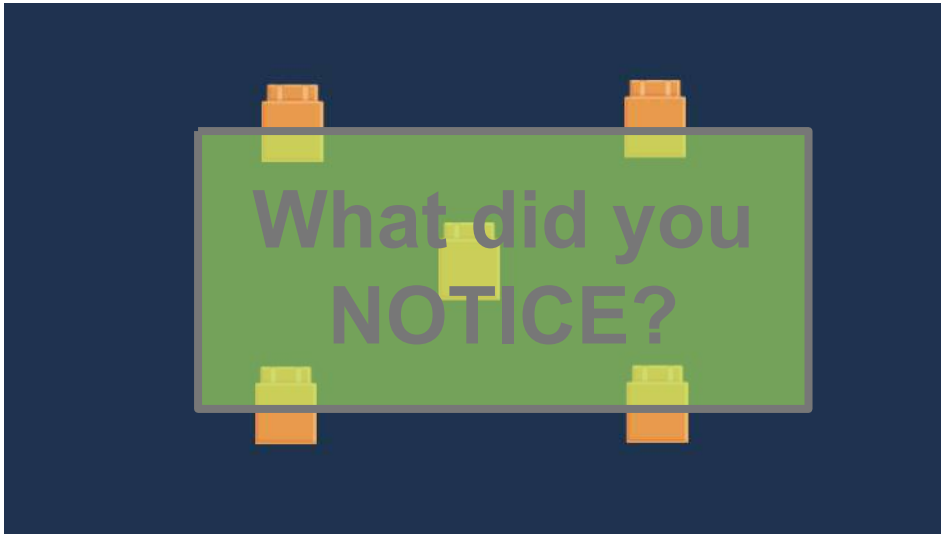
Clue by Clue

K.G.A.1

Day 35

SAY: I am going to show you an image. The image will appear for only two seconds, so pay close attention – I want you to remember what you saw. Remember, the image will appear and disappear quickly, you won't have time to count each object – see if your brain can just recognize how many objects without even counting.
****CLICK ONCE to begin the automated reveal process.*
Then allow students to share what they noticed – do not correct inaccurate observations – the image will be shown again



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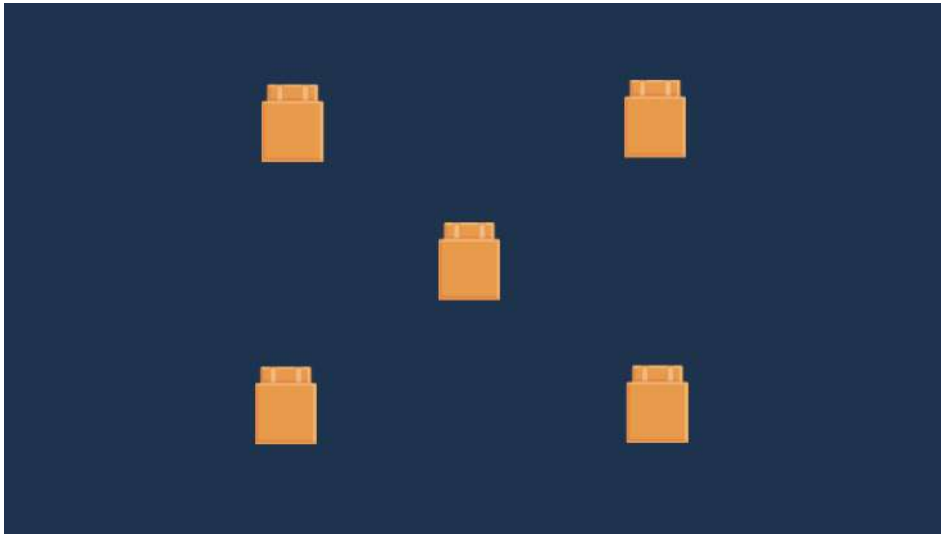
Quick Count

K.CC.B.4

Day 35

SAY: Here is the image again. This time it will not disappear.
ASK: Did you think there were 5 counters? How did you know there were 5 counters?
ASK: What if there was one fewer cube? How many cubes would we have then?



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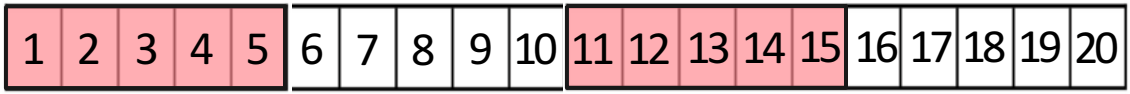
Quick Count

K.CC.B.4

Day 36

FOCUS STRATEGY: Counting On
There are several image progressions with today's routine. Advance the slide to see each one.
Allow students to share strategies. Model student strategies.
GOAL: Begin on the first number and find the total by counting on using a number path and drawing "hops".
For the last prompt, "What is 1 and 8?", the goal is for students to recognize it is easier but still equal to start at 8 and hop 1.



What is 1 and 8?

What did we learn that would make this easier?

Number Strings

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K.OA.A.1

DIRECTIONS: Click to view animations. Read each prompt as you go through the routine.
Remember to use gestures to annotate student thinking. Allow multiple students to share ideas.

6

How many blue

What can we learn from this picture?

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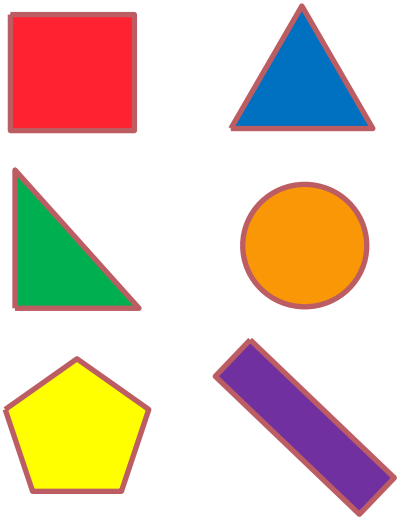
Splat!

Day 38

ASK: Which of these shapes are rectangles? [circle student choices – allow for self-correction as needed]. After discussing/sorting the shapes, click for animation. Do not correct students if they miss the red square/rectangle. Instead wait until after the animation and use the opportunity for a deeper discussion. ASK: Why is the red square also classified as a rectangle?

rectangles

not rectangles



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GeoChat

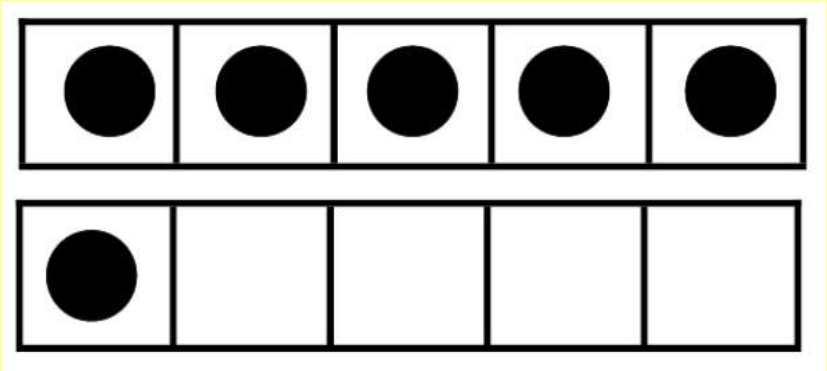
K.G.B.4

Day 39

FOCUS: Six
ASK: How many dots?
ASK: How did you count them?
ANNOTATION: Record student thinking with the pen or with gestures. Include written equations if appropriate.
SOME OF THE POSSIBLE STRATEGIES:

- Five/Ten Frame Structure – students may know the frame holds five and said five, six
- Doubles – students may have seen three dots and three dots
- Counting On – students may have seen three dots and then counted on three, four, five, six
- Count All – students may have counted one-by-one

ASK/DISCUSS: Were any of the strategies we talked about today similar?
ASK/DISCUSS: Which strategy do you think was most efficient for counting THESE dots? Why?



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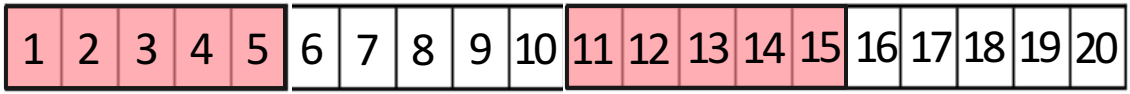
Math Talks

K.CC.B.4 & K.CC.B.5

Day 40

FOCUS STRATEGY: Counting On
There are several image progressions with today's routine. Advance the slide to see each one.
Allow students to share strategies. Model student strategies.
GOAL: Begin on the first number and find the total by counting on using a number path and drawing "hops".
For the last prompt, "What is 2 and 7?", the goal is for students to recognize it is easier but still equal to start at 7 and hop 2.



What is 2 and 7?

What did we learn that would make this easier?

Number Strings

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K.OA.A.1

Many THANKS!

180 Days of Number Sense Routines for Kindergarten

created by the Elementary Mathematics Team of **Calvert County Public Schools**, Maryland

Want to know more? Reach out to our team

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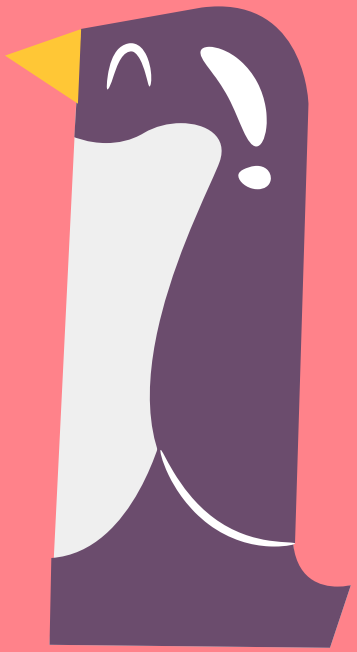

CREDITS: This presentation template was created by **Slidesgo**
Slide deck graphics and animations designed by Dawn Caine

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