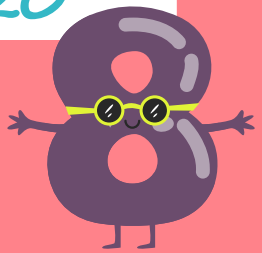
Prekindergarten

NUMBER SENSE Routines

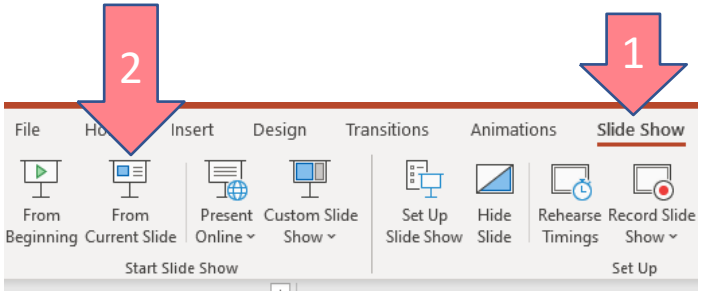
Days 101-120



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 Measure Mix

This routine is designed to build vocabulary specific to the measurable attributes of objects. In addition to these routines, the foundation of these understandings must come from experiences with real objects to explore heavier/lighter, longer/shorter, etc.

To facilitate this routine,

1. Show the image on the slide (up to 3 objects will be presented)
2. Ask the question shown on the slide. The question will focus on a single measurable attribute (weight, length, height).
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.
5. Prompt students to also answer the question "How do you know?"

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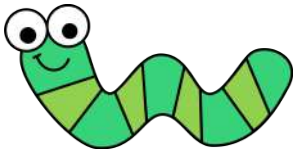
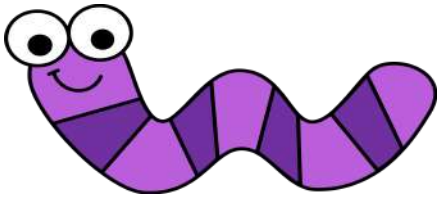
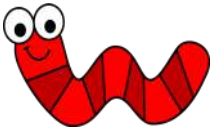
Day 101

ASK: If we want to place these four worms in order from smallest to biggest, where does the red worm go? [Point to the red worm at the bottom].
ASK: How do you know?
FOCUS: Ordering by length/size







smallest → biggest

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Measure Mix

PK.MD.A.2

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

Day 102

ASK: How are these two images the SAME but DIFFERENT?

FOCUS: The focus is on identifying whether the number objects in one group is greater than, less than, or equal to the number of objects in another group. In this case, students are comparing the number of layers.

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Same But Different

PK.CC.C.6 & PK.MD.A.1

How to facilitate Example – Not Example

In Slide Show mode, right click to annotate on the slide. Select > Pointer Options > Pen.
Circle the images that students think will move to the *Example Ring*.
Objects will move when you click the mouse. The items you circled, should move.
Discuss as appropriate. Focus on the like characteristic of the items in the Example Ring.

This routine may be presented in one of two different formats:

Format 1:

1. Students will be given a single focus category (i.e., Rectangles / Not Rectangles).
2. Students will be asked to sort objects into groups. One group should contain the objects that are EXAMPLES of the category, and the other group contains objects that are NOT EXAMPLES of the category. Discuss student reasoning throughout the routine. [*NOTE: The objects in the slides are NOT drag and drop. After the discussion, all objects will move when the slide is advanced*].

Format 2:

1. Students will be shown a group of objects.
2. The class decides on ONE category [i.e., round things]
3. Discuss which items should be moved into the Example Ring.
4. Circle the objects that belong in the ring.
5. Erase the drawn circles and have students name a different category. Repeat the process.
6. As the slide is advanced, SOME of the examples will be revealed.

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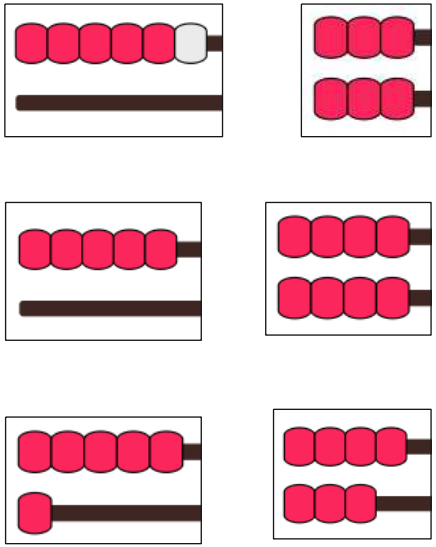
Example – Not Example

ASK: Which of these numbers represent 6? [circle student choices –allow for self-correction as needed].
After discussing/sorting the images, click for animation.
ASK: Do more of the models represent 6 or not 6?

6

six

not 6



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Example – Not Example

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 104

SAY: Each child wants a stuffed bear.
ASK: Do we need to add more bears or take away some bears, so the number of children and bears is the same? Prompt students to explain their thinking.
After children decide that they will need to add more bears, click to show animation
The concepts of "*more*" and "*need more*" can be tricky. Continue to discuss and explore these concepts as appropriate.
ASK: Are there more children or more bears?
RE-ASK: Do we need more bears or less bears to make the number of children and bears the same?

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More or Less

PK.CC.B.5

How to facilitate Copycat

This routine supports students' ability to recognize and replicate patterns. As the year progresses, this routine will increase in rigor by only showing the image for a short amount of time and then asking students to replicate the pattern from memory.

To facilitate this routine,

1. Show the image or play the recording for auditory patterns.
2. Ask, "How many are in the pattern?"
3. Ask students to replicate the pattern.
   The pattern may require physical blocks, clapping and tapping, or a verbal description of the pattern.
4. If the pattern was hidden after showing it for a short time, reveal the pattern again so students can compare their pattern to the original pattern.

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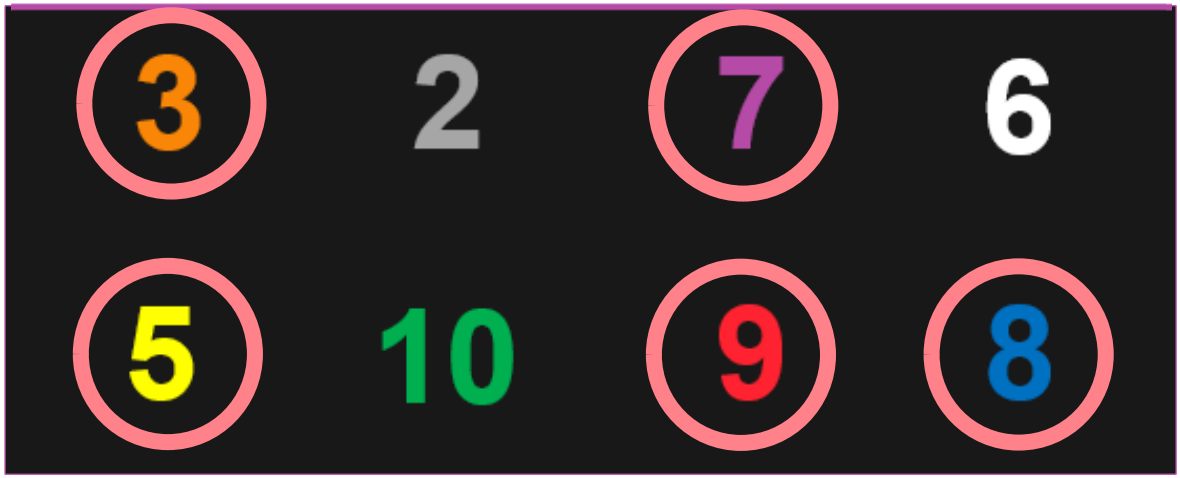
Copycat

For this slide, students will see a set of numbers. The set will rearrange each time. The teacher will prompt the students to look for the number symbol that represents the number word that is called out.
SAY: I see the number EIGHT. Where do YOU see the number eight? [students identify the number by color] [click to have the numbers rearrange themselves then say, "I see the number __ " by reading the number word on the new arrangement. Repeat with each of the five targeted numbers].

I see the number **EIGHT**



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Copycat

PK.CC.B.5

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 106

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

Clue 1
My family has more than two people

Clue 2
My family has less than five people

Clue 3
My family has one more than three people

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Clue by Clue

How to facilitate Would You Rather?

For this routine, you will notice that there isn't a single right answer. The goal is for your young mathematicians to develop math-related vocabulary that allows them to articulate their ideas and support their choice. Focus on the mathematical attributes, not on a single answer.

To facilitate this routine,

1. Ask your students, "Would you rather have "this" or "this"?
   Tell them each to think about the reason why they picked that one.

2. Then have your students share their ideas with a partner (this allows them time to practice and gives everyone a chance to talk).

3. Next have a few students share their choice and the reason they made that choice with the whole group.

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Would You Rather?

Day 107

ASK: Would you rather have THIS ice cream cone or THIS ice cream cone?
FOCUS: The focus is on conservation. Two side-by-side scoops is about the same as two stacked scoops.

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Would You Rather?

PK.MD.B.4

How to facilitate Where Does It Go?

This routine is designed to build sequencing skills, mathematical reasoning, and vocabulary.

To facilitate this routine,

1. Show students the slide (some will be animated) and ask students to think about where the target object might go.

2. After some think time, call on a student to share their idea. Do not acknowledge if the idea is correct or incorrect (yet!).

3. If the student does not offer an explanation, prompt the student by asking, **"How do you know?"** *(yes, ask even if the answer they provided is not accurate – students will often self-correct when prompted to explain).*

4. Call on another student and repeat Step 4. After several students have shared their ideas, reveal the correct solution (and celebrate!).

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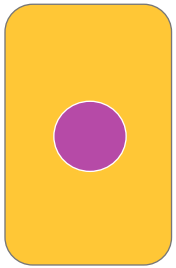
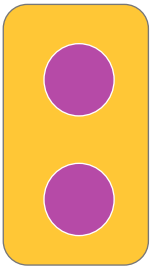
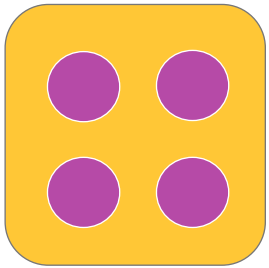
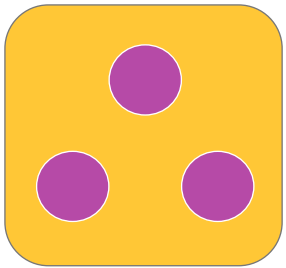
Day 108

ASK: **Where does this one go?** (point to the one at the bottom). **How do you know?**
FOCUS: Recognize numbers that come right before or right after.
TEACHER TIP: Encourage students to describe the position in multiple ways before revealing the solution: "The three goes before the four" and "The three goes after the two".









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Where Does It Go?

PK.CC.A.2

How to facilitate One More One Less

For this routine, students will determine what is ONE more or ONE less than a given value using visual images as cues.

To facilitate this routine,

1. Show the image.
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.
5. Prompt students to also answer the question "How do you know?"

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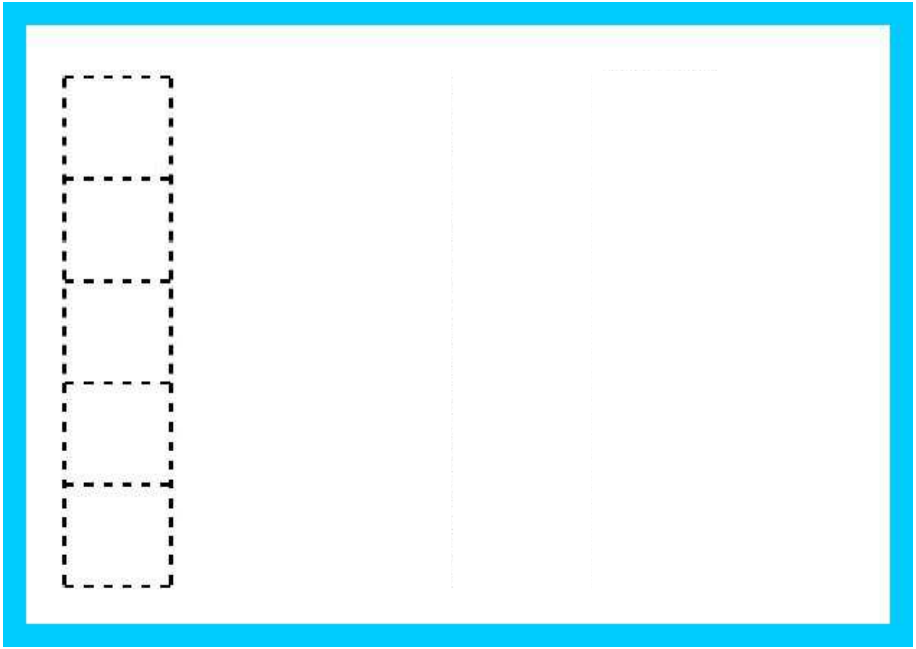
Day 109

SAY: This is a 5-frame. [click] There is 1 dot in this new frame.
[click] This frame has two dots.
[click] This frame has 3 dots.
ASK: How many dots will the next frame have? [Give think time and discussion time] Then click to reveal 4 dots.
ASK: How many dots will the next frame have? [give think time and discussion time]. Then click to reveal 5 dots.



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One More One Less

PK.CC.A.2

Day 110

ASK: Which will be heavier: 2 small counting bears or 2 large counting bears? How do you know?
FOCUS: Weight (heavier)

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Measure Mix

PK.MD.A.2

Day 111

ASK: If you wanted to give someone 5 flowers, which bouquet would you rather give?
FOCUS: The focus is on recognizing that 5 can be decomposed in more than 1 way.
EXTEND: What other ways could we arrange the roses and daisies to make 5 flowers? (there are 4 more ways!)

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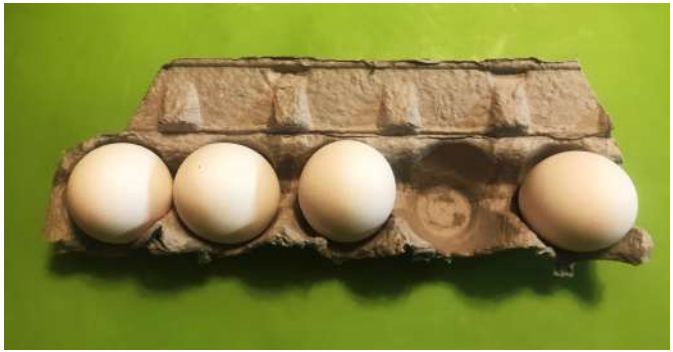
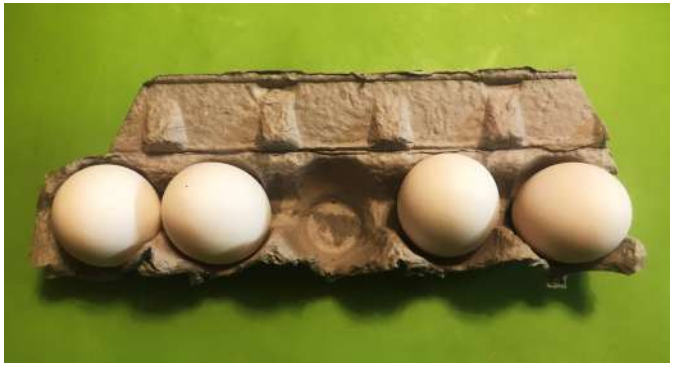
Would You Rather?

PK.OA.A.2

Day 112

ASK: How are these two images the SAME but DIFFERENT?





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Same But Different

PK.CC.C.6

Day 113

ASK: Can you use the clues to guess which number set I am describing?
FACILITATION NOTE: Use the annotation tool to mark off numbers that do not fit the clue.

Clue 1
I am more than 5

Clue 2
I am less than 8

Clue 3
I am before 7 on the number path

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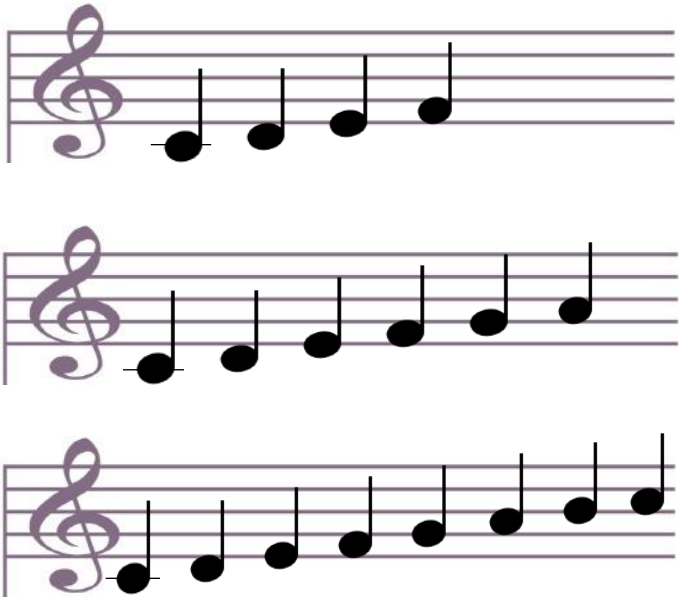
Clue by Clue

SAY: We are going to hear some piano notes. Count the number of music notes you hear.
[Click enter to play the sound].
SAY: Let's listen one more time. This time, use your fingers to help you keep track of the notes.
SAY: Be ready, you might need fingers on both hands to count the notes.
[Click to play the piano notes again]
ASK: Which set of music notes matches the number of sounds you heard? How do you know?
[After discussing, click to reveal the correct set of notes]



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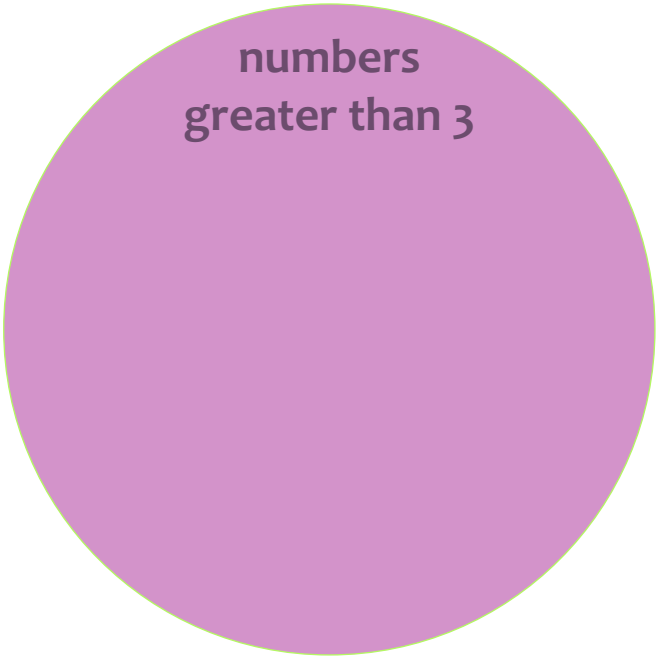
Copycat

Day 115

ASK: Which of these numbers are greater than 3? [circle student choices – allow for self-correction as needed].
After discussing/sorting the numbers, click for animation.
ASK: Are more of the numbers greater than 3 or not greater than 3?



not greater than 3

1 4

3 5

0 2

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Example – Not Example

PK.MD.B.3 & PK.CC.B.4

Day 116

SAY: Many types of frogs start out as tadpoles. Look at this row of tadpoles. Let's count how many there are [count the tadpoles – annotate by writing a number above each tadpole as you count together].
SAY: Now watch the tadpoles swim around. [click for animation]. We are going to count them again.
ASK: Do you think there will be more, less, or the same number of tadpoles?
[discuss all ideas then count the tadpoles and annotate by writing the number near each tadpole once again].
FOCUS: Reinforce that the way the tadpoles are arranged does not affect the total; the count remains the same.

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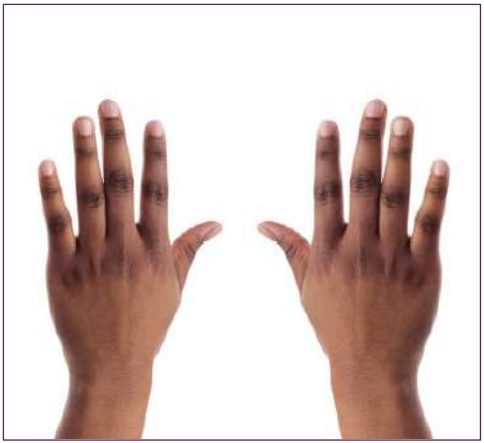
More or Less

ASK: How are these two images the SAME but DIFFERENT?



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Same But Different

ASK: How many eggs are in this nest? If a racoon steals one of the eggs, how many eggs will be left?
TIP: Number the eggs as you count them aloud together.

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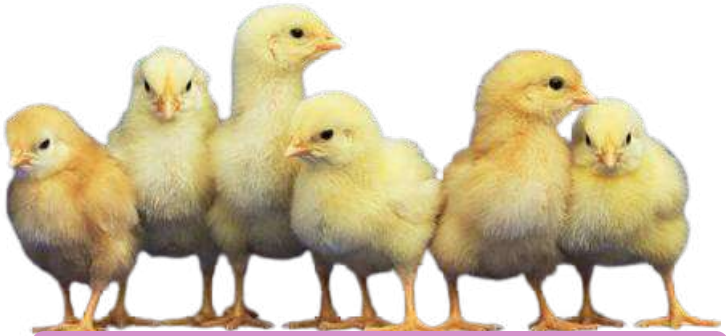
One More One Less

Day 119

ASK: These baby chicks hatched from the same nest. Which nest matches the number of chicks?
ASK: How do you know?



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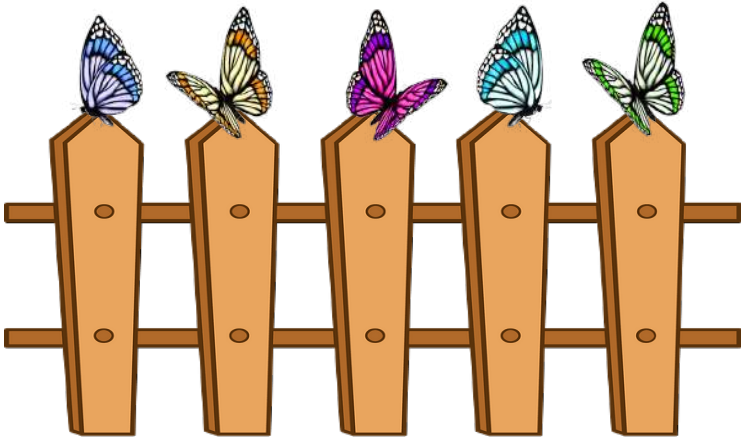
Where Does It Go?

PK.CC.B.4

Day 120

ASK: Are there MORE butterflies resting on the fence or flying in the air? How do you know?



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More or Less

Many THANKS!

180 Days of Number Sense Routines for Prekindergarten

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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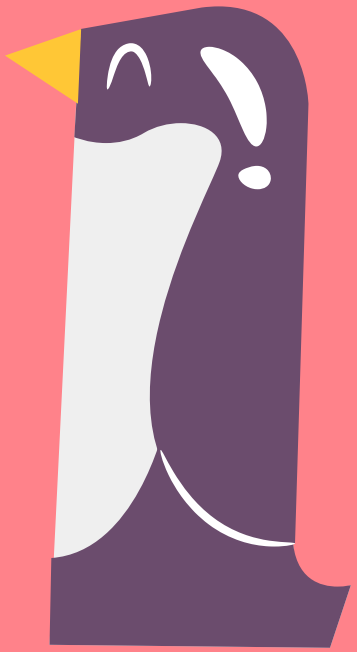

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