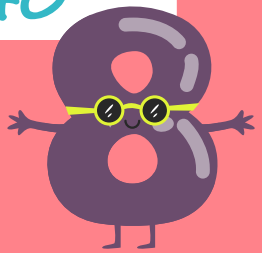
Prekindergarten

NUMBER SENSE Routines

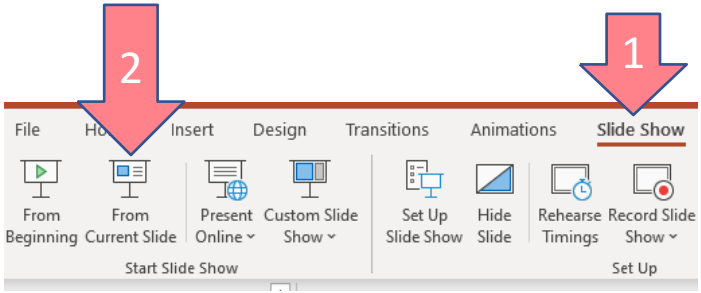
Days 121-140



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 121

ASK: Which will be lighter: 3 counting bears or 2 counting bears? How do you know?
FOCUS: Weight (lighter)

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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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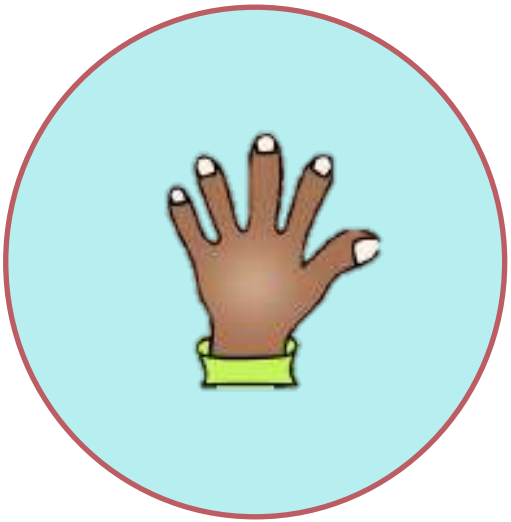
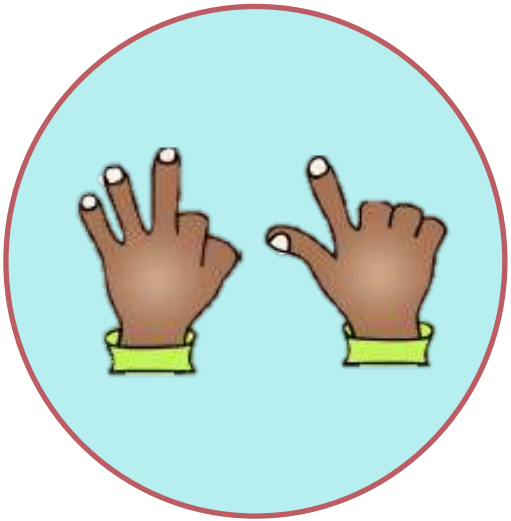
Same But Different

Day 122

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





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Same But Different

PK.CC.C.6

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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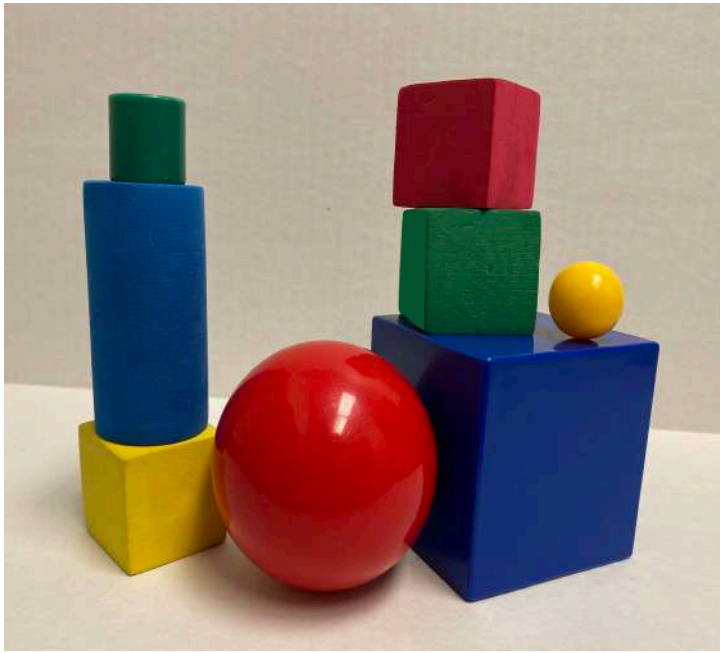
Clue by Clue

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



Clue 1
I am on top of a cube

Clue 2
I am not a cube

Clue 3
I have no flat sides

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Clue by Clue

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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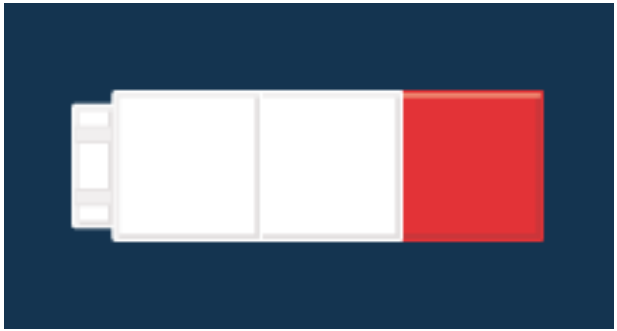
Copycat

Day 124

ASK: Which math equation matches the cube model? How do you know?
Then have students use the cubes to help them find the sum of 5+4.
IDEA: Give students cubes and ask them to build the model shown



2 + 1

3 + 1

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Copycat

PK.OA.A.1

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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Day 125

ASK: If you have 5 cookies, which way would you rather share them with a friend?
Tell us why you picked that way of sharing..
What other ways could we share the five cookies? (some might even talk about breaking one in half!!)
FOCUS: The focus is on decomposing 5 in a variety of ways.

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Would You Rather?

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 126

ASK: Which number matches this picture? How do you know?
Encourage students to explain how they "saw" the eight – did they see 4 and 4 more or count 1 by 1?
FOCUS: The ability to understand the relationship between numbers and quantities.

7 8 9 10

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Where Does It Go?

PK.CC.B.4

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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Day 127

Give plenty of time for discussion of student ideas. Then click to see possible sorting categories.

How can we sort these leaves?

_____

not _____

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Example – Not Example

PK.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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ASK: A group of children were asked if they prefer to play on the swing or the slide during play time.
Their teacher recorded their votes using tallies. Let's look at the tallies.
ASK: Did more children prefer to play on the swing or the slide? How do you know?
EXTEND: The number of children who liked the ____ was greater than the number of children who liked the _____.

swing	slide
𝍸	𝍸 𝍸

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More or Less

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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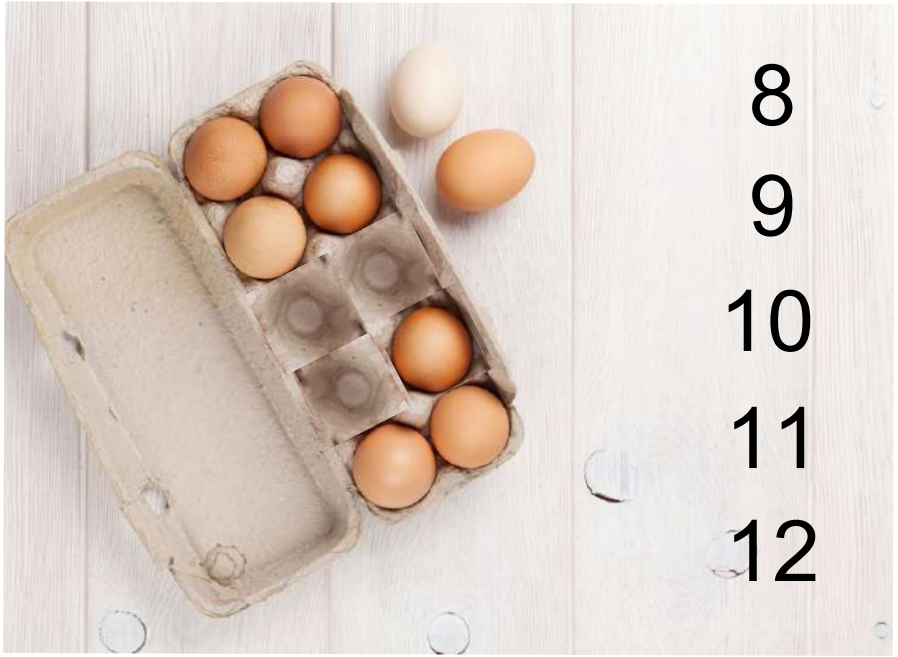
Day 129

SAY: There are 8 eggs.
I see 6 eggs in the carton and two on the table. Six, seven, eight. We see 8 eggs. [do not start the count at 1]
[click to reveal another egg]. SAY: Now there are 9 eggs.
[click] Ten eggs. [click] Eleven eggs.
[don't click yet] ASK: What number will come next? [Discuss. Then click to reveal the twelfth egg].



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One More One Less

PK.CC.A.2

Day 130

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

Clue 1
I have LESS THAN six eggs

Clue 2
All of my eggs are IN the nest

Clue 3
I have the FEWEST eggs

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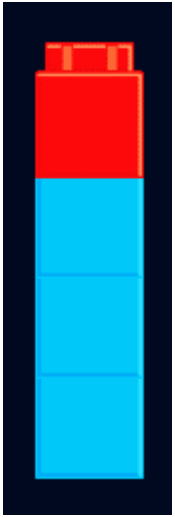
Clue by Clue

PK.CC.C.6 & PK.MD.A.2

ASK: Which math equation matches the cube model? How do you know?
Then have students use the cubes to help them find the sum of 1+3.
IDEA: Give students cubes and ask them to build the model shown.



1 + 3

1 + 4

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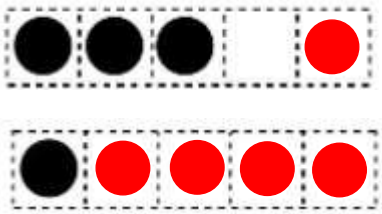
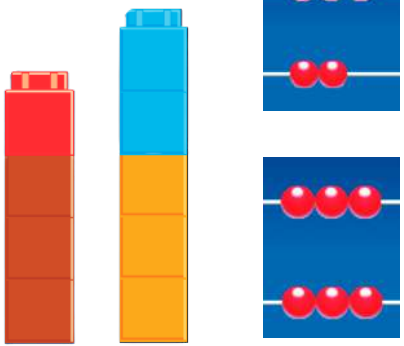
Copycat

ASK: Which of these model represent the number 5? [discuss]
[click to animate objects]. Discuss the patterns of 5 shown here: 1+4 and 2+3 and 3+2

make 5

does not make 5





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Example – Not Example

Day 133

SAY: The baby tiger, baby elephant, and baby squirrel are all being cared for at rescue centers.
ASK: Which baby animal do you think weighs the LEAST? How do you know? [discuss]
FOCUS: Weight

Image Source: WWF.org

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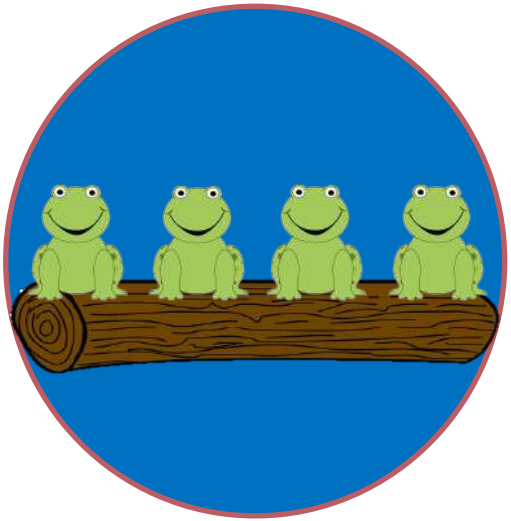
Measure Mix

Day 134

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



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Same But Different

PK.CC.C.6

Day 135

ASK: Which set of cubes matches the number sentence? How do you know?
Then have students use the cubes to help them find the sum of 2+2.
IDEA: Give students cubes and ask them to build the model for 2+2.

$2 + 2$

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Copycat

PK.OA.A.1

Day 136

ASK: If each child gets a plate, how many plates do we need?
Discuss. Students should talk about the count and the symbol that represents that count.
Click to highlight the number symbol. Click again for plates to animate. Click to show the next question.
ASK: If we put a cupcake on each plate, how many cupcakes do we need?
Discuss the count and the symbol.
Click for animation to highlight the number symbol. Click for cupcakes to animate.

If we put a cupcake on each plate, how many cupcakes do we need?

5 6 7

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Where Does It Go?

PK.CC.B.5

ASK: Do you think this girl would rather collect four more eggs from her chickens or five more eggs? Tell why.
FOCUS: There is not one right answer.
Students may say four to fill the carton or may say five because five eggs is more than four.

Image Source: Steven Depolo

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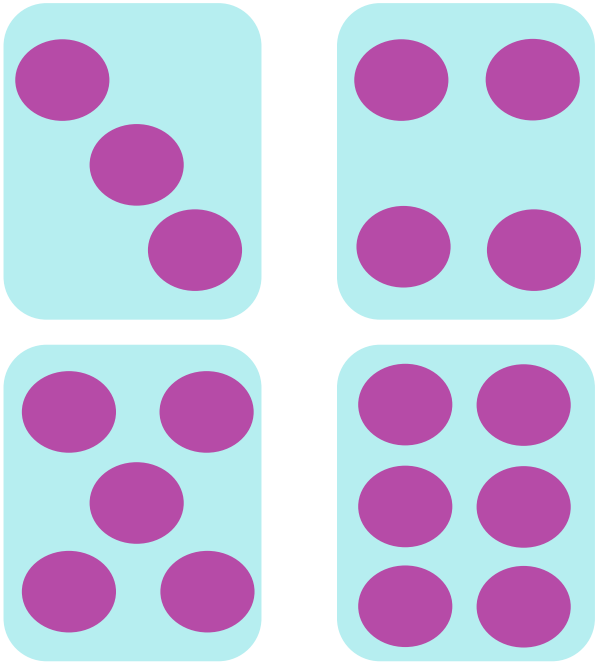
Would You Rather?

Day 138

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



Clue 1
I am greater than 3

Clue 2
I am fewer than 6

Clue 3
I am 1 more than 4

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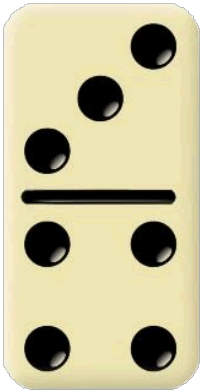
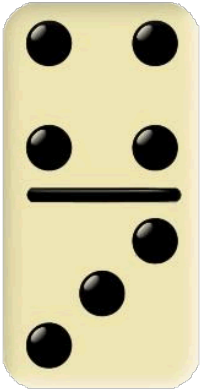
Clue by Clue

PK.CC.B.4

Day 139

Did you know the dots on a domino are called a “pips”?
ASK: Which has FEWER pips? How do you know?





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More or Less

Day 140

SAY: Listen to the woman count.
[click to play audio and to show the numbers she is counting – there is a slight delay]].
Guide your students to choral count with you 1-11.
ASK: What number should we say next? [solicit responses from students]
[After students have agreed that twelve comes next, click to show the number choices]
ASK: Which number is the number twelve? [students can use the color to indicate their choice]

1	2	3	4	5	6	7	8	9	10	11	

10 11 12 20

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One More One Less

PK.CC.A.1

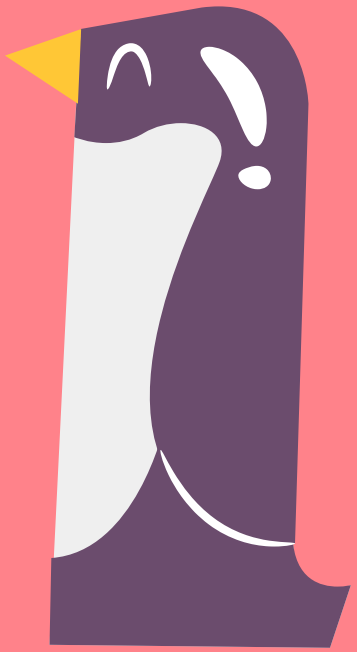
Many THANKS!

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

youngj@calvertnet.k12.md.us
plachnok@calvertnet.k12.md.us
cained@calvertnet.k12.md.us



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