# 180 Days of
# Number Sense Routines
## Grade 2
## Days 21-40

Calvert County Public Schools

# 180 Days of
# Number Sense Routines

**WHY IS DEVELOPING NUMBER SENSE IMPORTANT?** Number Sense is the foundational building block for all strands of mathematics. Students who struggle in mathematics do not lack mathematical ability, but rather, they simply do not have a strong number sense on which to build their knowledge. Just as we are not born knowing how to read, we are not born with Number Sense. It must be developed and nurtured over time through a progression of understandings about numbers and their relationships to one another. With time and focused practice, students come to understand that numbers are meaningful, and outcomes are sensible and expected. Number Sense development encourages students to think flexibly and promotes confidence with numbers.

**WHAT IS A NUMBER SENSE ROUTINE?** A routine is an activity or event that occurs on a regular basis over time. Routines provide a framework for our day to support both the teacher and students. Routines help to build community and create a safe learning environment for students. Routines build a sense of belonging, ownership, and predictability which make the classroom a place to take risks. We learn through risk-taking; we take risks when we feel safe; we feel safe in a supportive learning environment; we create supportive learning environments through routines. Just as we have established routines for bus dismissal and fire drills, we must also establish routines that build mathematical thinking and discourse.

# 180 Days of
# Number Sense Routines

**HOW WILL THESE NUMBER SENSE ROUTINES BENEFIT ME AND MY STUDENTS?** What teachers do and how they do it is critically important and has a profound impact on the quality of the educational experience of our students. Effective pedagogy, the art and science of teaching, is a key element in the learning process. The Number Sense are models of effective pedagogy and ensure that the critical Number Sense instruction we provide is equitable to all our students regardless of geography, teacher experience, or student circumstance. As we prepare our students to be mathematically proficient in their lives beyond the classroom walls, these Number Sense routines will help to lay the critical foundation for all future mathematical endeavors.

**WHAT ARE THE CCPS IMPLEMENTATION EXPECTATIONS?** Number sense routines have been developed for all 180 instructional days in grades 1-5. These routines are to be used every day, including early dismissal, late arrival, and field trip days. Because the routines do not require a specific order, it is permissible to trade routines among days to best match the time available. Number Sense must be built over time. With consistency, we can build students' number sense creating a strong mathematical foundation. If students or the teacher is struggling with a routine, it is expected that the teacher collaborate with colleagues to build capacity in that routine – do not just choose to skip the routine. If additional help is needed, the teacher should seek the assistance of their content specialist or mathematics supervisor.

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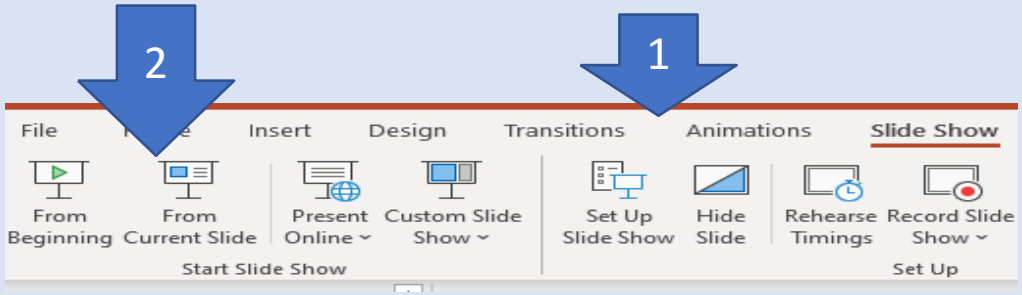
# 180 Days of
# Number Sense Routines

## 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>

# 180 Days of
# Number Sense Routines

## Acknowledgements

We are grateful to those who have inspired this project – and there have been many. These slide decks were designed for Grades 1–5 with custom-built daily routines for each grade level. The nine routines blend original creations, adaptations, and borrowed OER materials. We have made our work available in Open Educational Resources so that others may benefit as we have. Our deepest gratitude and respect to all those who helped move our work forward, and a special thank you goes to the following whose own work had such a tremendous impact on our 180 Days of Number Sense Routines:

- *Decide & Defend* and *Quick Count* routines were adapted from templates created by Grace Kelemanik and Amy Lucenta at http://FosteringMathPractices.com
- *Estimation Clipboard, Esti-Mysteries,* and *Splat!* templates created by www.SteveWyborney.com
- *Same But Different* discussion from Developing Grayscale Thinking by Looney Math Consulting at https://www.samebutdifferentmath.com
- *Which One Doesn't Belong* tasks adapted from http://wodb.ca by Mary Bourassa

## Usage Rights

# Directions for the CHORAL COUNT routine

Choral Counting is an activity in which the teacher leads children in counting aloud together by a given number. As the class calls out each number, the teacher records the count on the board, pausing the count at strategic moments.

To begin, the teacher decides on a number for the students to skip count by, whether to count forwards or backwards, and what number to start and end the count on. Different numbers lend themselves well to surfacing different mathematical ideas.

The goal of this activity is not just to practice rote counting, but to engage children in reasoning, predicting, and justifying. To do this, teachers record the count so that patterns within the numbers are readily noticeable and pause during the count to ask questions like, “What do you think will come next? How do you know?”

– Tedd.org


Want to see a Choral Counting routine in action?
Click the image.

# Count on by 2s – starting on 16

Day 21

**BEGIN WITH NUMBER:** 16
**COUNTING RULE:** +2
**GOAL:**

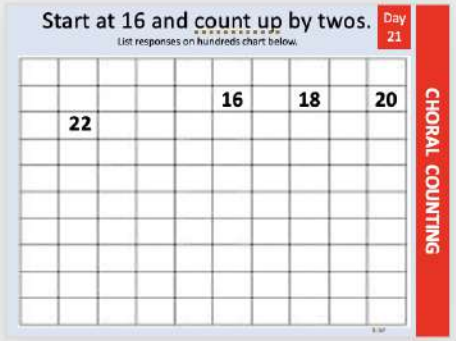
- Find PATTERNS within the counted numbers.
- Use those patterns to PREDICT numbers that will appear later in the counting sequence.

**CHART**: As students choral count, chart their responses (see next slide) – this will provide a visual while counting AND will prompt great discussion when finished counting.

**Ask:** What patterns do you notice when you look at the numbers that we counted?

16 18 20
22 24 26 28 30
32 34 36 38 40

**NOTE:** You do not need to fill all of the spaces on the next slide. Go until students see the patterns emerge. Discuss the patterns and make predictions about numbers that have not yet been written.




Be sure to SKIP the spaces on the chart where ODD numbers would fall. For example, the 18 would be written 2 spaces to the right of 16.
Emphasize the pattern on the hundreds chart when counting by twos.
**Stop part-way through the routine, choose an empty box near the bottom of the hundreds chart. Will this number be odd or even? How do you know?**
Continue with other boxes and have students defend their predictions.

Possible Patterns to Notice

- **For each column, the ONES place is the same number all the way down the column**
- **The TENS place increases by 1 as you look down each column**
- **The numbers are all even numbers**
- **There is a space between each number on each row (for the odd numbers we did not count)**

CHORAL COUNTING

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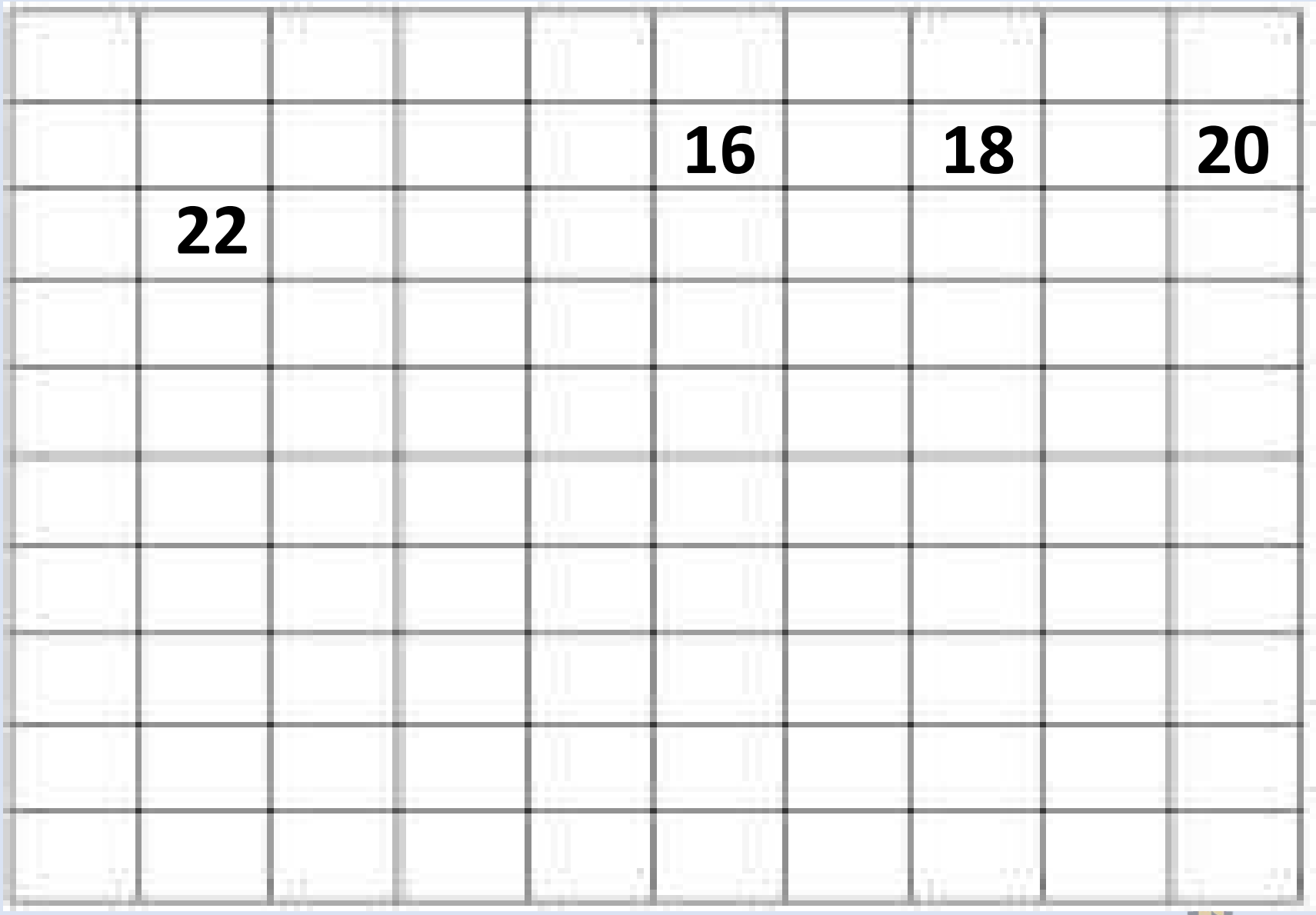
# Start at 16 and count up by twos.

List responses on hundreds chart below.

Day 21




CHORAL COUNTING

Day 22

## Using the DECIDE & DEFEND routine

As you do this routine with students, USE the CHECKLIST on the left side of the problem as a way to help organize the thinking process

- **READ to Understand:** Begin by having students discuss the question being asked. At this time, do NOT focus on the math calculations required or the answer. This step is designed for students to understand the context of the question (What is the gist of the question?)

- **DECIDE**: Pair or group students. Using a consistent pairing will make this routine more fluid so you do not have to take time to pair students every time you want them to discuss. Have students discuss the question and discuss the question and decide which solution is correct (note: partners may not agree and that is fine provided they can justify their own thinking).

- **DRAFT**: Students draft a statement about their ideas (either as a group or individually and it can be written or oral – teacher's choice)

- **DEFEND**: Students share their ideas and defend their reasoning with the whole group. Encourage active listening and accountable talk.

- **RELECT**: To further develop comprehension, have students use ONE of the sentence starters on the "Reflect on Learning" slide after they have discussed and listened to new ideas with classmates.

*NOTE: This is the CCPS adaptation of the original Decide and Defend protocol*

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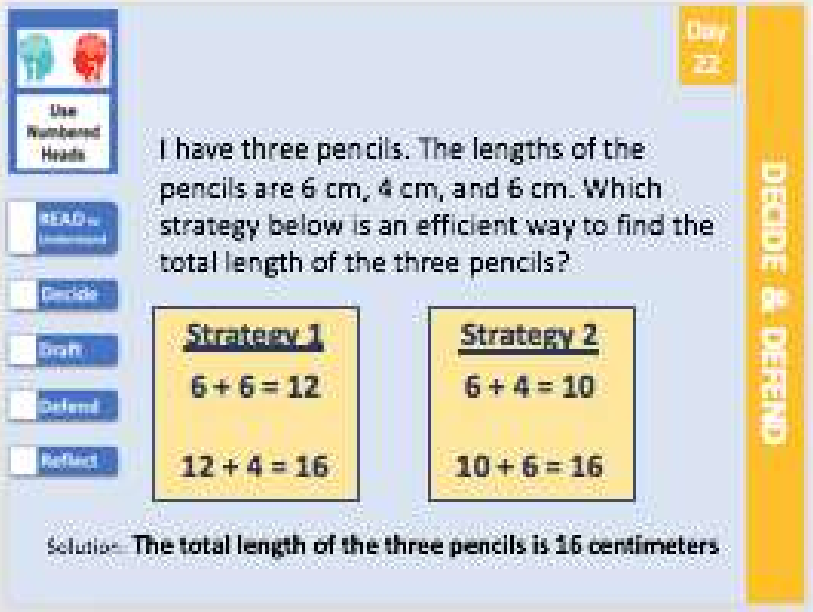
DECIDE & DEFEND

# Use the NEXT SLIDE with students.

Here is are some possible responses. This list is not all-inclusive.
Additional ideas encouraged!

Day 22

DECIDE & DEFEND




- **BOTH strategies are efficient strategies.**
- **Strategy 1 uses the Doubles strategy. Strategy 2 uses the Make Ten strategy.**
- **The focus is on student discussion and understanding that there is more than one strategy – there is no "right" answer here.**

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Use Numbered Heads

READ to Understand

Decide

Draft

Defend

Reflect

Day 22

DECIDE & DEFEND

I have three pencils. The total length of the three pencils is 16 centimeters. The lengths of the pencils are 6 cm, 4 cm, and 6 cm.

**Strategy 1**

**6 + 6 = 12**

**12 + 4 = 16**

**Strategy 2**

**6 + 4 = 10**

**10 + 6 = 16**

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Day 22

# Reflect on Learning

- A new math idea I learned today is…

- Next time I interpret someone else's work, I will… *(ask myself, pay attention to,…)*

DECIDE & DEFEND

Day 23

# Estimation Activity

Have you already watched the teacher information video?


When you are ready to use this activity, use the PowerPoint platform so the slides work properly.

PROMPT: **How many glass gems are in the glass?**

ESTIMATION

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How many glass gems are in the glass?
Steve Wyborney
The Reveal
www.stevewyborney.com


25 glass gems


The Reveal


The Reveal


The Reveal
www.stevewyborney.com

Day 24

NUMBER TALK

4 + 6 + 8 + 2

9 + 3 + 1 + 7

5 + 6 + 5 + 4

**TEACHER NOTES**

**BEFORE**

This slide has the String of expressions that you will use for today's Number Talk. You can use Smart Ink, right click for PowerPoint Pen, or convert this slide to Smart Notebook so you can easily annotate on the slide. The annotation is an important part of the routine. The expressions should be presented one-at-a-time with skills building on one another. Remember, students will come with a wide variety of strategies. Allow student sharing of these strategies and work toward determining which of the ways were most efficient and brain-friendly.

**DURING**

**Making Tens:**

The following number talks encourage students to make a quick ten to make addition more efficient and brain-friendly.

Example: 9 + 3 + 1 + 7

Add the 7 + 3 for a sum of 10
Add the 9 + 1 for a sum of 10
Then add 10 to the 10 for a total sum of 20
9 + 3 + 1 + 7 = 20
Come back to the original expression and its solution so students can see the relationship

**AFTER**

After doing the Number Talk String, be sure to highlight this strategy and encourage students to "look for" places they can use it throughout the day.

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Day 24

NUMBER TALK

4 + 6 + 8 + 2

9 + 3 + 1 + 7

5 + 6 + 5 + 4

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**Directions for OPEN NUMBER LINE routines**

**If you have never watched, or haven't watched it recently, we encourage you to watch the video that models how to use and interactive number line.**
**https://www.youtube.com/watch?v=p8nssffnHkM&feature=youtu.be**

**Teacher Note**: You may want to create an interactive number line in your classroom for some of the Open Number Line routines. The slides provided can be used as teacher reference or used interactively if this file is "printed" as a Smart Notebook file.

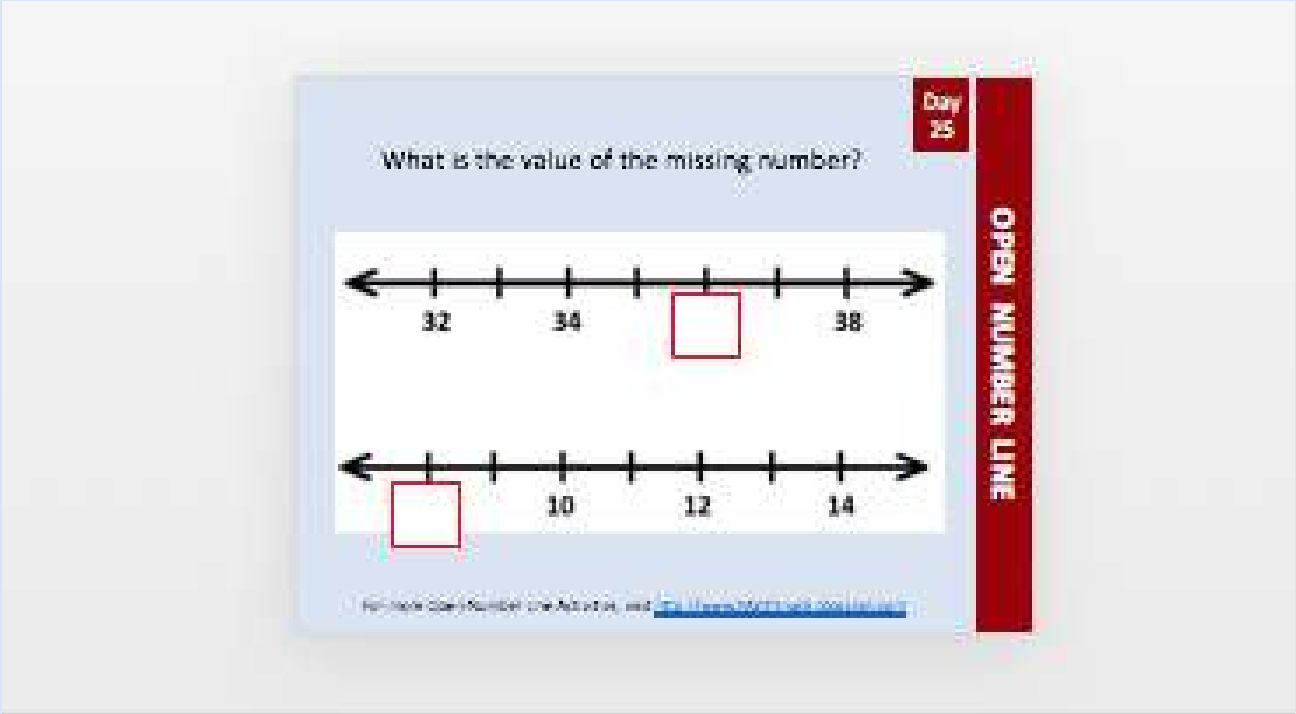

For more Open Number Line Activities, visit http://www.MathSnack.blogspot.com

# Use the NEXT SLIDE with students.

Here is are some possible responses. This list is not all-inclusive.
Additional ideas encouraged!

Day 25

OPEN NUMBER LINE




- 36 and 8 – discuss each number line separately
- Both number lines skip-count by 2s
- Have a variety of students explain how they know 36 and 8 are the correct numbers using a variety of reasoning skills.

For more Open Number Line Activities, visit http://www.MathSnack.blogspot.com

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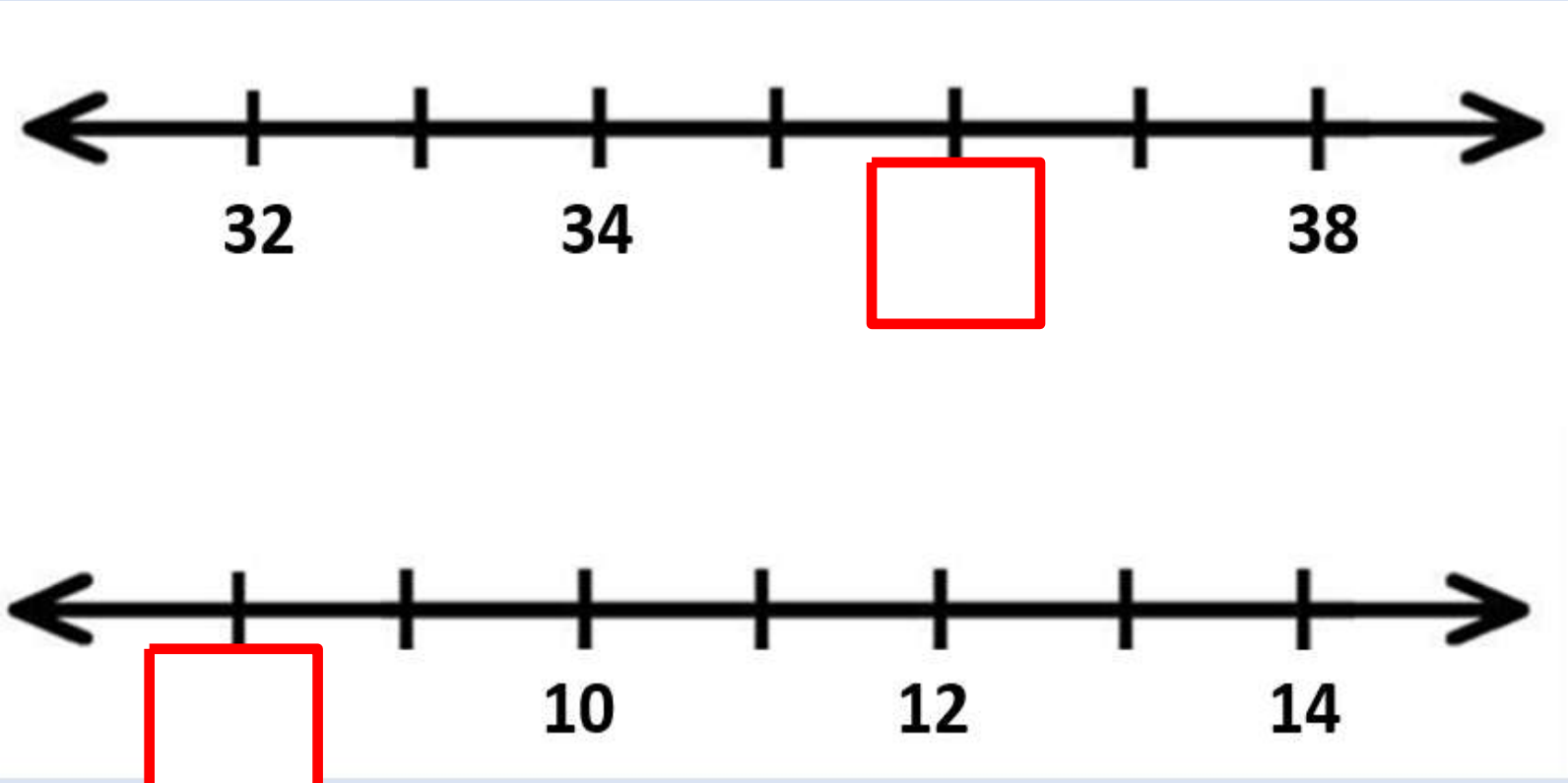
Day 25

# What is the value of the missing number?




OPEN NUMBER LINE

For more Open Number Line Activities, visit http://www.MathSnack.blogspot.com

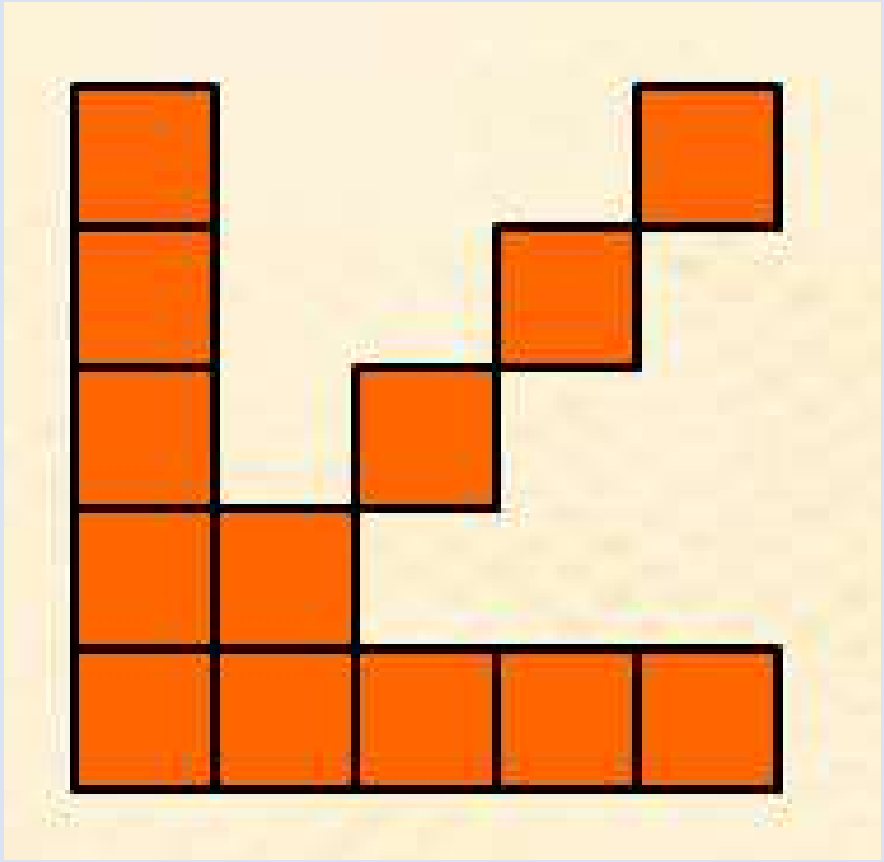
## Directions for QUICK COUNT routines

Quick Count is an instructional routine designed to shift attention away from mindless calculations and toward necessary structural interpretations of mathematics. This routine fosters structural thinking, Math Practice 7, and promotes student discourse.

1. Pair students into Numbered Heads (or Peanut Butter Jelly partners, etc.)
2. Show students the first image slide for about 3-5 seconds depending on the complexity of the image and level/experience of the students.
3. With their partner, students discuss everything they can remember about the image.
4. After a minute of partner discussions, have students share ideas to the group.
5. Create a list of student ideas that students can refer to when the image is shown again.
6. Tell students that you are going to put the slide back up. Ask students to COUNT the images using some type of shortcut strategy (chunking, symmetry, arrays…)
7. Show the image again and leave it displayed as students look for counting shortcuts.
8. With their partner again, students discuss how many objects are in the image and how describe the shortcut counting strategy they used. Give time for partner discussions. Walk around and take notes about discussions to determine which students will share.
9. Use the slide with identical images as a comparative visual as students take turns explaining how they counted the objects in the image.
    - Use your notes to select different students with different approaches.
    - The student explains his/her shortcut as the teacher **gestures** over the image.
    - A **different student** is asked to **REPEAT the original student's shortcut** as the teacher **annotates** (circles, underlines) on the image to show the shortcut used.
    - Repeat the process using different student-generated shortcut strategies.
10. End by asking students to explain what was "mathematically important"

Day 26

QUICK COUNT



What do you NOTICE?

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Day 26

QUICK COUNT

# What did you NOTICE?

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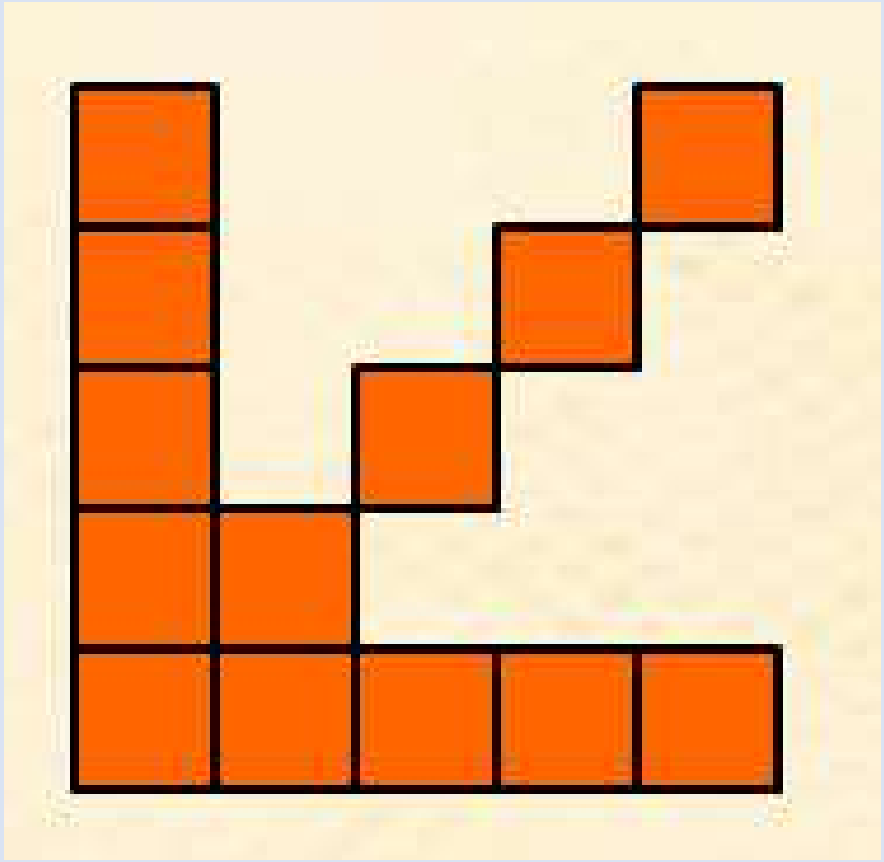
Day 26

QUICK COUNT



How many do you see?

What counting shortcut did you use?

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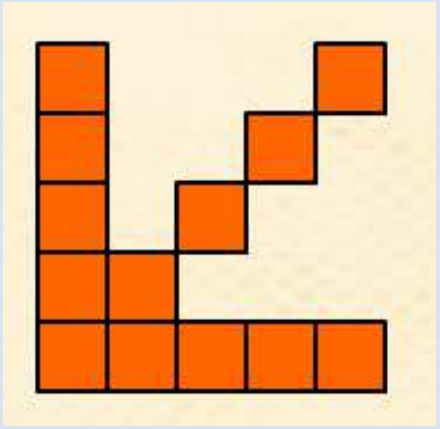
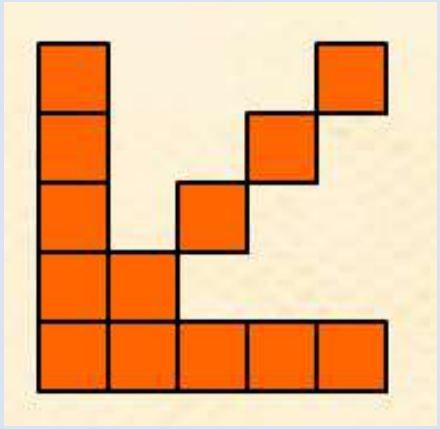
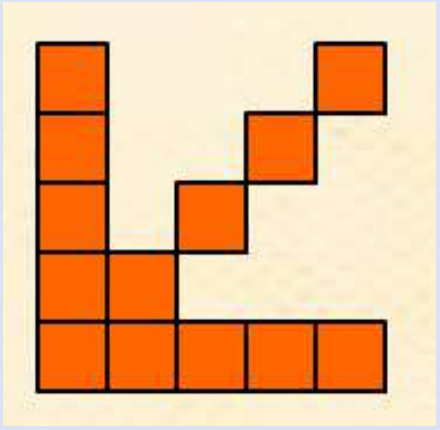
I noticed ____ so I _____

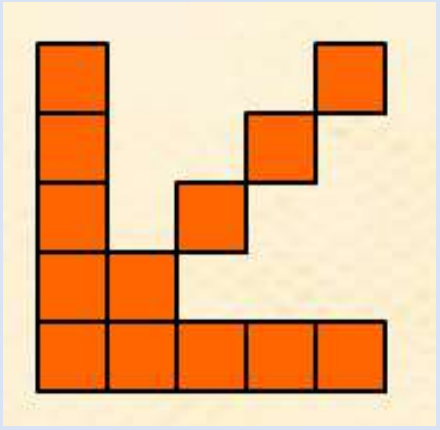
(They) noticed ____ so they___

Day 26









QUICK COUNT

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Day 26

# Reflect

**What was mathematically important?**

QUICK COUNT

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Intro

SAME BUT DIFFERENT

## About the SAME BUT DIFFERENT Routine

*Same But Different* is a powerful routine for use in math classrooms. The *Same but Different* routine compares two things **calling attention to both how they are the same and how they are different**. This apparent paradox is the beauty of the activity. In this analysis, *instead of making a choice and trying to prove that these are the same or prove that they are different,* ***students consider how two items can be both***. This is a critically important distinction from many other tasks.

**One of the reasons students struggle in math is that they struggle to make connections**. Someone who has poorly developed number sense might see each number as its own thing, and not part of the larger network of mathematical ideas. A mathematical conversation using the language *same but different* that calls attention to how a new concept in math is the same as another familiar and comfortable concept but different in a specific way is a useful conversation in growing a student's network of connections. Building these connections could also reduce anxiety as children become the sense-makers in the conversation.

Source: www.samebutdifferent.net.com/about

## Facilitating the SAME BUT DIFFERENT Routine

1. Present the slide
2. Ask students to THINK about how the two items are both the SAME AND DIFFERENT.
3. Do not allow conversation at this time -- give ample think time for students to consider the possibilities
4. After some time has been given (a minute or so), ask students to talk with their Number Head partner or small group about their ideas -- allow this conversation to dominate the time dedicated to this routine
5. As students talk with partners/groups, walk around and listen to the conversations. Resist jumping in; let them grapple with the ideas with their peers.
6. As you walk around listening, take notes. You will use these notes to help direct the whole group conversation.
7. Refocus student attention to the front of the room for a whole group debriefing session. Ask students to share some of their ideas about how the two were both the SAME and DIFFERENT – use the notes you took to bring out important ideas that will benefit the entire room.

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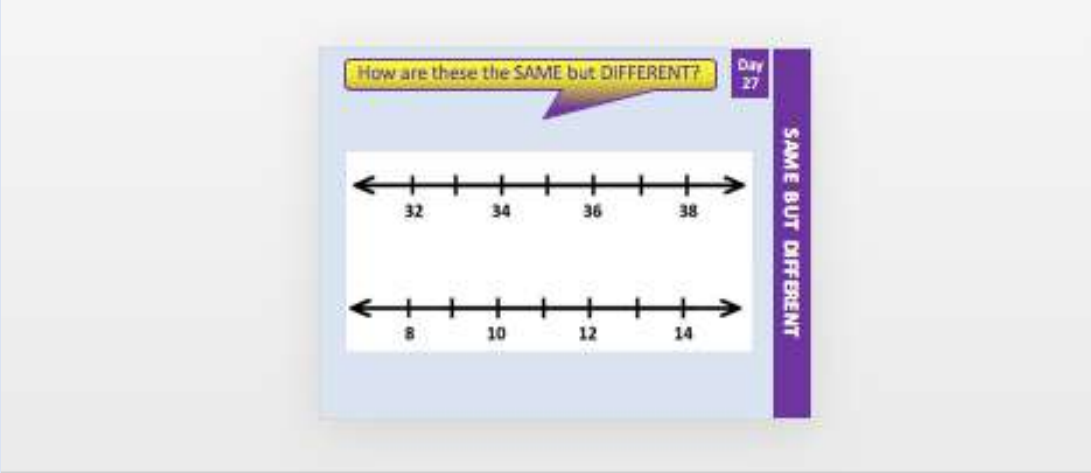
Day 27

# Use the NEXT SLIDE with students.

Here is are some possible responses. This list is not all-inclusive.
Additional ideas encouraged!

- Students may simply recognize a component that makes them the “same” OR “different”
- Some students may state a same/different relationship and say that they are the “same because…. But different because….”




Possible Responses

SAME:

- Equal intervals (physically) – the spacing is the same between hash marks
- Equal intervals (numerically) - both skip-count by 2s
- Both have numbers missing
- Both are showing the even numbers, not the odd numbers
- Both show an total distance of 6 units

DIFFERENT:

- Different starting/ending point

SAME BUT DIFFERENT

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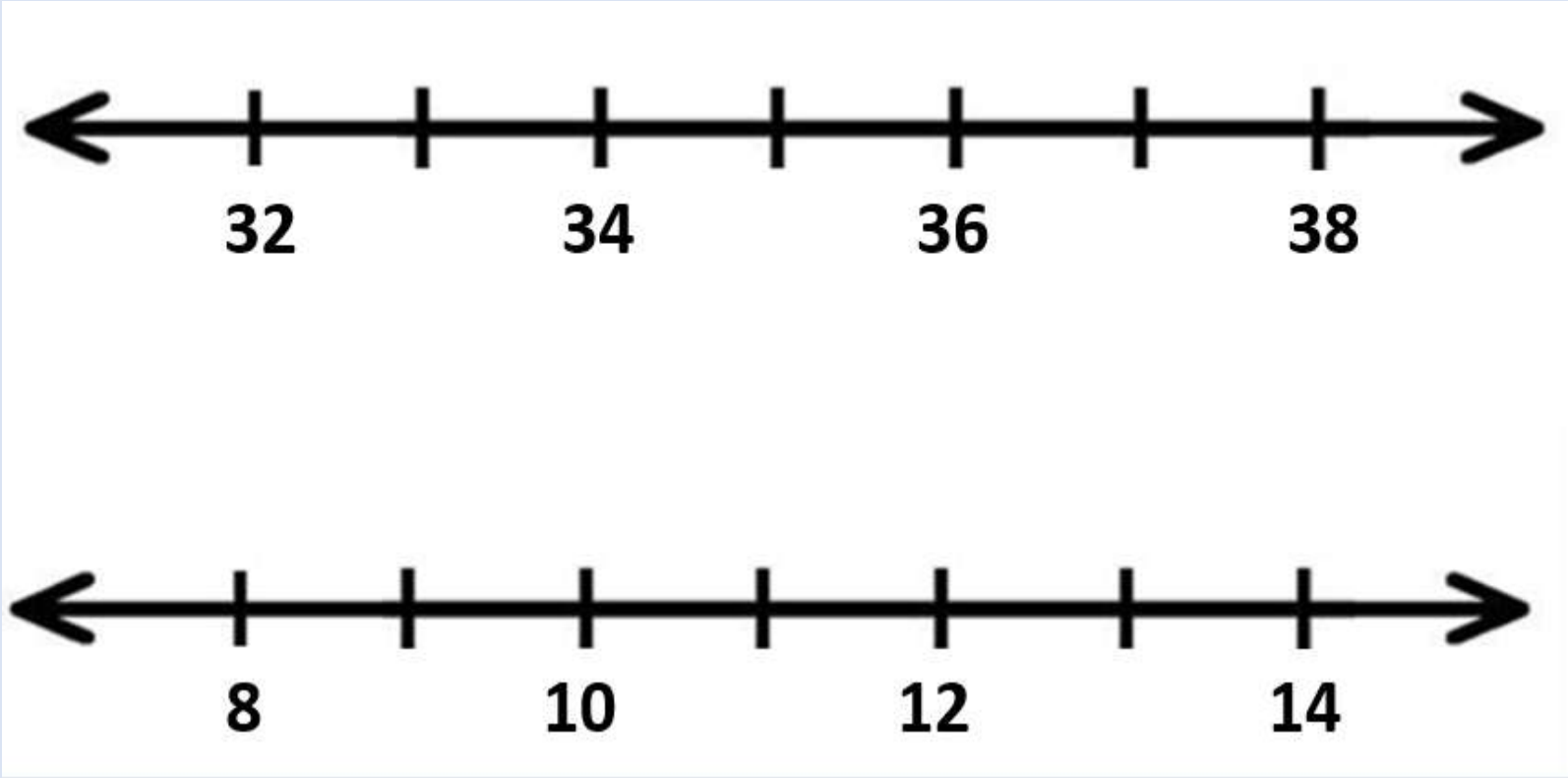
# How are these the SAME but DIFFERENT?

Day 27




SAME BUT DIFFERENT

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**Directions for SPLAT! routines**


SPLAT! is a number sense activity that was developed by an educator in Oregon. There are dozens of SPLAT! activities including SPLAT! within ten, multi-SPLAT!, colored SPLAT!, and fraction SPLAT!

In order for SPLAT! to work correctly, you will want to keep this activity in PowerPoint format.

To learn more about Steve Wyborney's Splat activity, click this link http://www.stevewyborney.com/?p=893

How many blue shapes do you

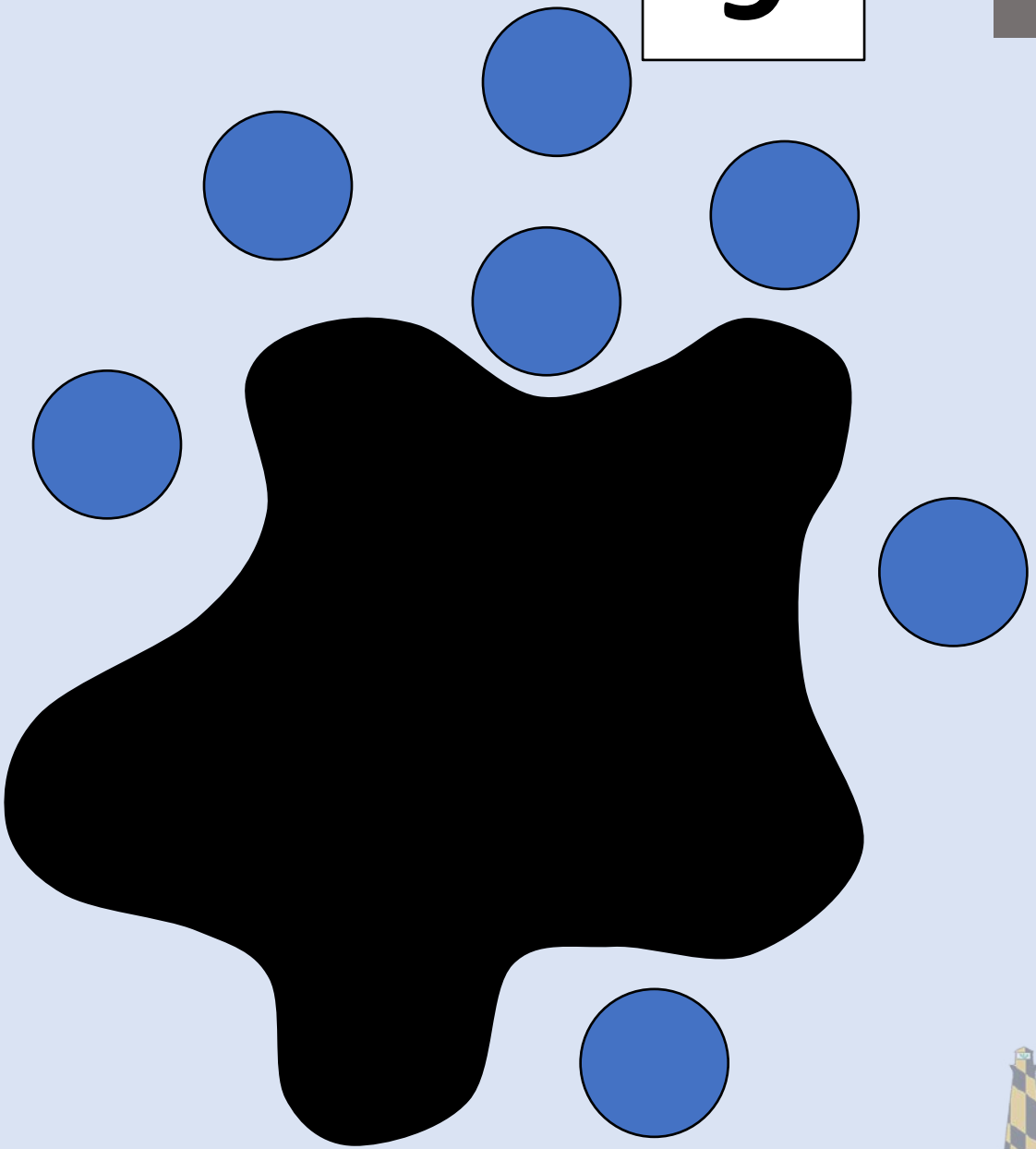
Splat!

How many shapes are under the splat? How do

How else could

Let's look under the splat to see how many shapes

What can we learn from this picture?



9

Day 28

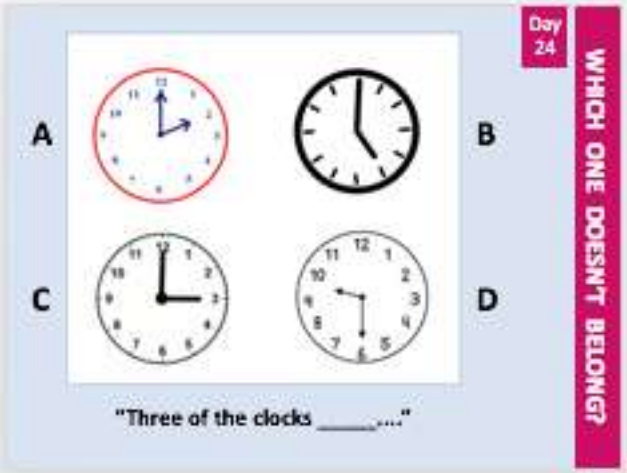
SPLAT!

# Use the NEXT SLIDE with students.

Here is are some possible responses. This list is not all-inclusive.
Additional ideas encouraged!

Day 29

WHICH ONE DOESN'T BELONG?




Encourage the use of the sentence starter "Three of the _____...."

Possible Responses:

- Three of the images are in black and white. Clock A is not in black and white, it is in color.
- Three of the images have numbers. Clock B does not have numbers.
- Three of the images do not have hash marks to show each minute. Clock C has hash marks.
- Three of the images are times on the hour. Clock D is to the half-hour, not the hour.

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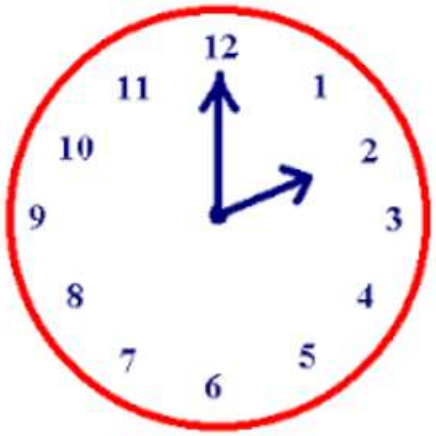
Day 29

# WHICH ONE DOESN'T BELONG?

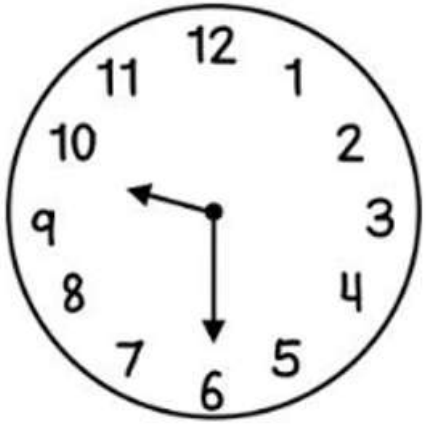
A




B

C


D




"Three of the clocks _____...."

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**Count on by 5s – starting on 75**

Day 30

**BEGIN WITH NUMBER: 75**
**COUNTING RULE:** +5
**GOAL:**

- Find PATTERNS within the counted numbers.
- Use those patterns to PREDICT numbers that will appear later in the counting sequence.

**CHART**: As students choral count, chart their responses – this will give them a visual while counting AND will prompt great discussion when finished counting. **Be sure to write the numbers aligned as shown below to make the patterns more visible.**

**Ask:** What patterns do you notice when you look at the numbers that we counted?

| | | | | |
|---|---|---|---|---|
| 75 | 80 | 85 | 90 | 95 |
| 100 | 105 | 110 | 115 | 120 |
| 125 | 130 | 135 | 140 | 145 |
| 150 | 155 | | | |

**NOTE: You do not need to fill all of the spaces on the next slide. Go until students see the patterns emerge.**
**Discuss the patterns and make predictions about numbers that have not yet been written.**

Possible Patterns to Notice

- Each column alternates with a 5 or 0 in the ones place value
- Each row alternates with a 5 or 0 in the ones place value
- There are 2 numbers in a row with the same tens place value (120, 125)
- As you look down a column, each number is 25 more than the number above it

CHORAL COUNTING

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# Count on by 5s – starting on 75

Day 30

**BEGIN WITH NUMBER: 75**
**COUNTING RULE:** +5
**GOAL:**

- Find PATTERNS within the counted numbers.
- Use those patterns to PREDICT numbers that will appear later in the counting sequence.

---

| | | | | |
|---|---|---|---|---|
| 75 | ____ | ____ | ____ | ____ |
| ____ | ____ | ____ | ____ | ____ |
| ____ | ____ | ____ | ____ | ____ |
| ____ | ____ | ____ | ____ | ____ |

CHORAL COUNTING

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Day 31

# Estimation Activity

Have you already watched the teacher information video?


When you are ready to use this activity, use the PowerPoint platform so the slides work properly.

PROMPT: **What is the length of the string in inches?**

ESTIMATION

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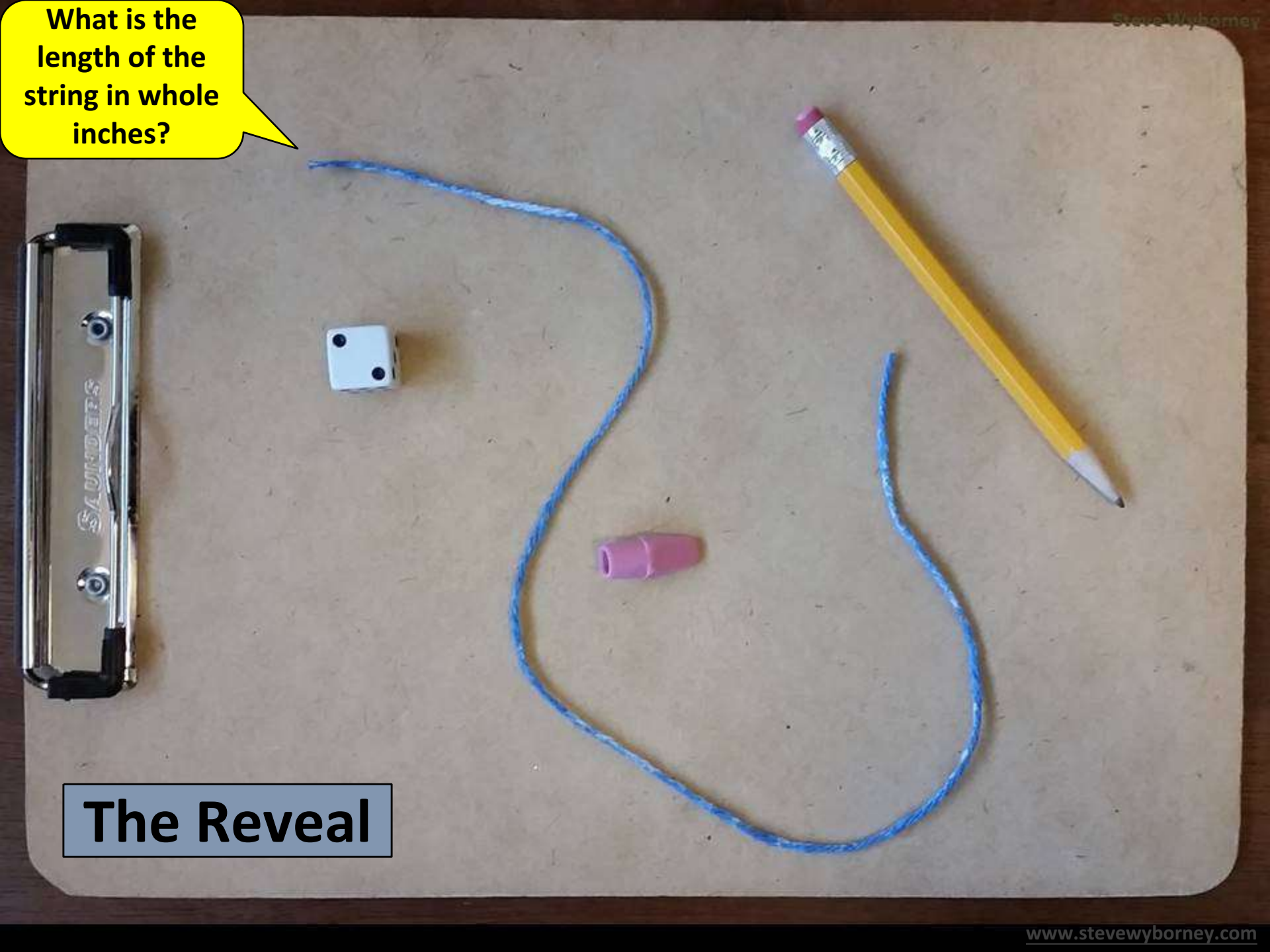
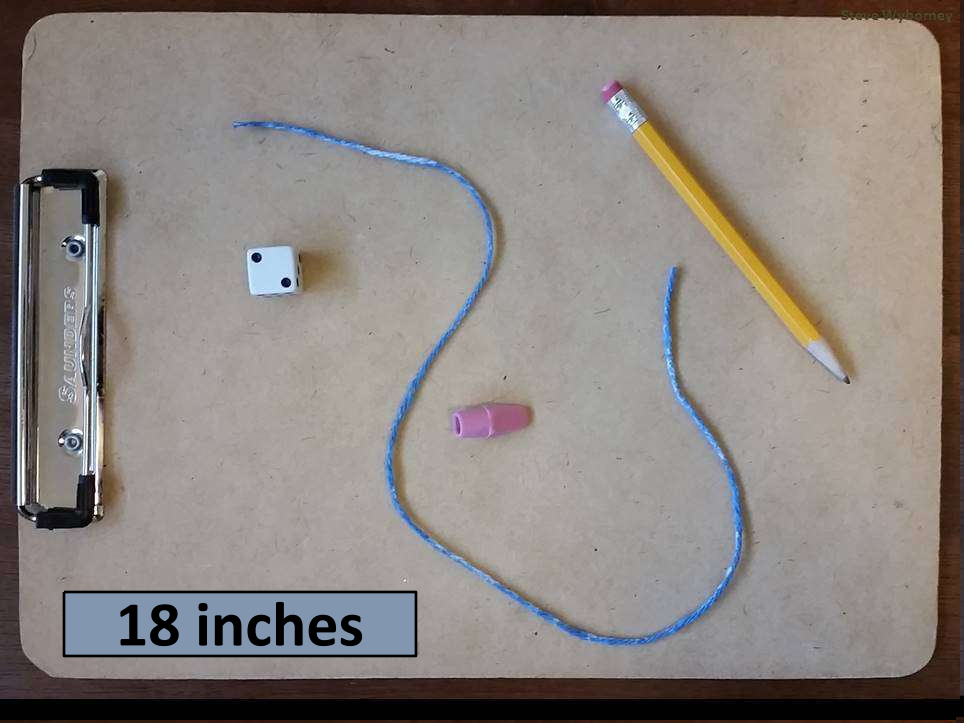
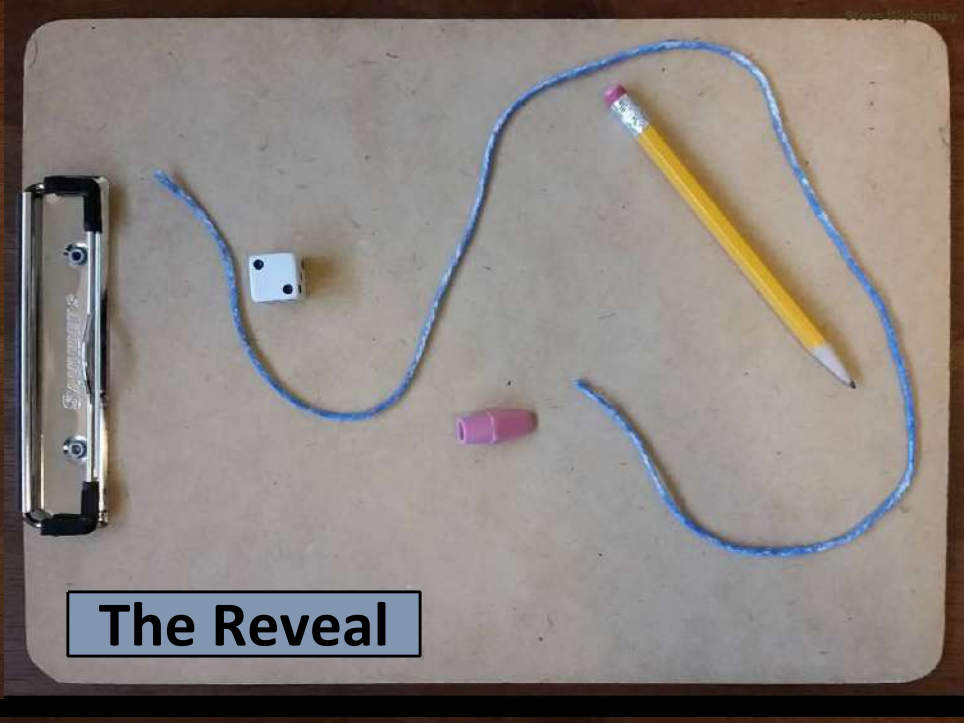
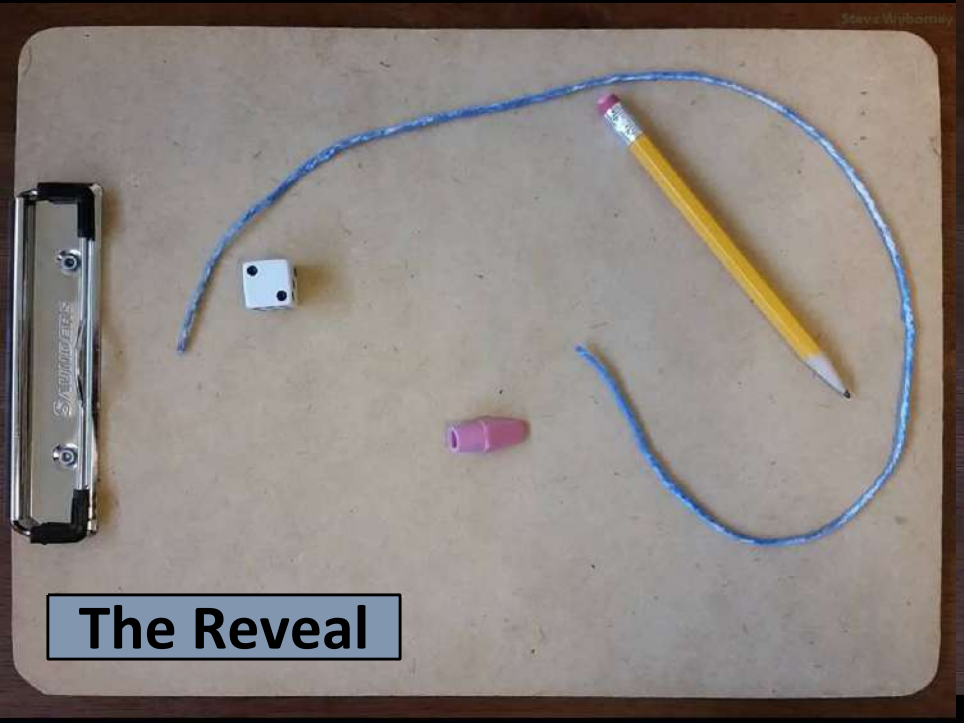




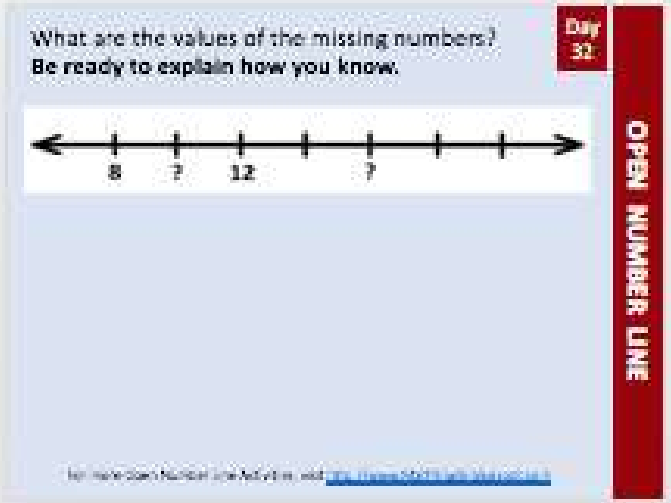




# Use the NEXT SLIDE with students.

Here is are some possible responses. This list is not all-inclusive.
Additional ideas encouraged!

Day 32

OPEN NUMBER LINE



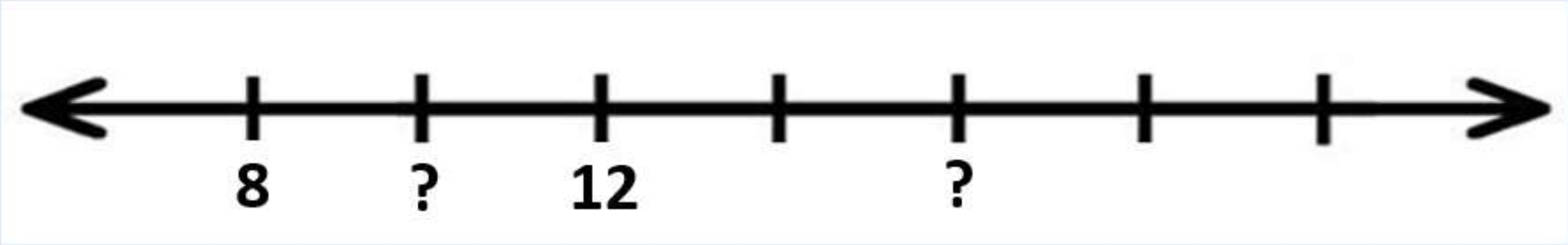

The missing values are 10 and 16.
Allow THINK TIME and time for PRODUCTIVE STRUGGLE.
Students may notice that there is a space of 4 between 8 and 12 because 12-8=4 – since there are two intervals, the 4 must be shared with 2 – that means 2 each.
8+2=10 and 10+2=12
As we continue this pattern, 12+2=14 and 14+2=16.
Students may have a different way to determine this missing values.

For more Open Number Line Activities, visit http://www.MathSnack.blogspot.com

Day 32

What are the values of the missing numbers?

**Be ready to explain how you know.**




OPEN NUMBER LINE

For more Open Number Line Activities, visit http://www.MathSnack.blogspot.com

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Day 33

# Use the NEXT SLIDE with students.

Here is are some possible responses. This list is not all-inclusive.
Additional ideas encouraged!

- Students may simply recognize a component that makes them the “same” OR “different”
- Some students may state a same/different relationship and say that they are the “same because…. But different because….”


**POSSIBLE RESPONSES**

- Both are addition tables with a highlighted diagonal row.
- The first one has a diagonal row of EVEN numbers. The second has a diagonal row of ODD numbers.
- Both of the diagonal rows skip-count by 2s
- Both highlighted diagonals begin in the zero column

SAME BUT DIFFERENT

Calvert County Public Schools

# How are these the SAME but DIFFERENT?

Day 33

SAME BUT DIFFERENT

## Addition Table

| + | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 2 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 3 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 4 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 5 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 6 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 7 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 8 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 9 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 10 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |

## Addition Table

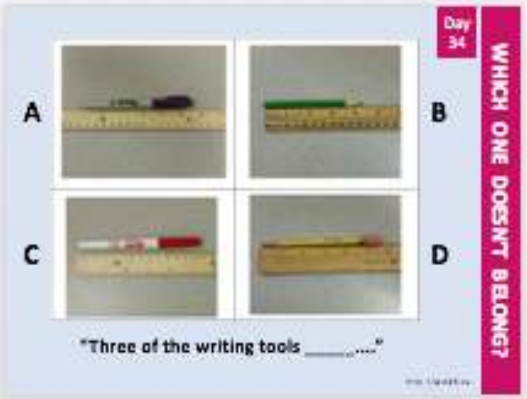
| + | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 2 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 3 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 4 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 5 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 6 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 7 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 8 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 9 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 10 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |

# Use the NEXT SLIDE with students.

Here is are some possible responses. This list is not all-inclusive.
Additional ideas encouraged!

Day 34

WHICH ONE DOESN'T BELONG?




Encourage the use of the sentence starter "Three of the _____."

Possible Responses:
Three of the images are being measured from the zero. Image A is the only one that does not start at the zero.
Three of the images are more than 5 inches long. Image B is the only one that is less than 5 inches.
Three of the images are designed to be used on paper. Image C is designed for a white board, not paper.
Three of the images do not have an eraser. Image D is the only one that has an eraser.

Light the Future
Calvert County Public Schools

Day 34

# WHICH ONE DOESN'T BELONG?

A

B

C

D

"Three of the writing tools _____...."

Day 35

## Using the DECIDE & DEFEND routine

As you do this routine with students, USE the CHECKLIST on the left side of the problem as a way to help organize the thinking process

- **READ to Understand:** Begin by having students discuss the question being asked. At this time, do NOT focus on the math calculations required or the answer. This step is designed for students to understand the context of the question (What is the gist of the question?)

- **DECIDE**: Pair or group students. Using a consistent pairing will make this routine more fluid so you do not have to take time to pair students every time you want them to discuss. Have students discuss the question and discuss the question and decide which solution is correct (note: partners may not agree and that is fine provided they can justify their own thinking).

- **DRAFT**: Students draft a statement about their ideas (either as a group or individually and it can be written or oral – teacher's choice)

- **DEFEND**: Students share their ideas and defend their reasoning with the whole group. Encourage active listening and accountable talk.

- **RELECT**: To further develop comprehension, have students use ONE of the sentence starters on the "Reflect on Learning" slide after they have discussed and listened to new ideas with classmates.

*NOTE: This is the CCPS adaptation of the original Decide and Defend protocol*

DECIDE & DEFEND

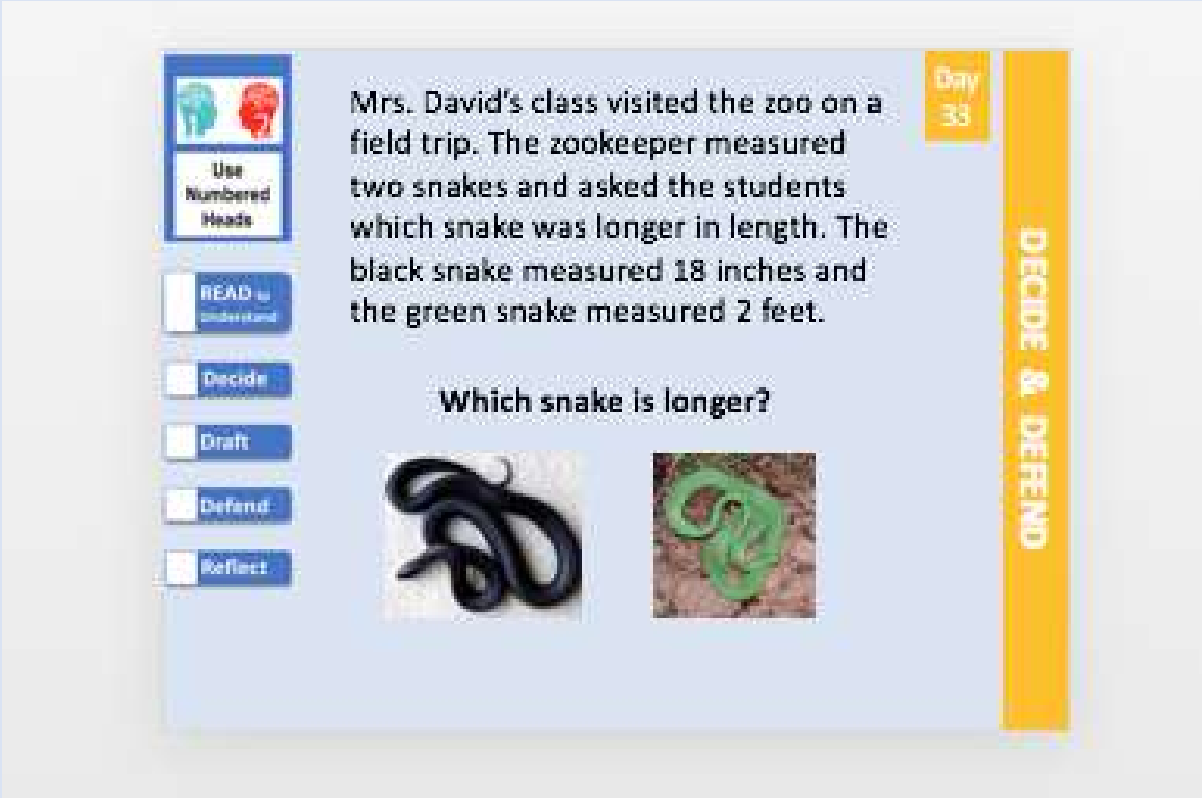
Calvert County Public Schools

# Use the NEXT SLIDE with students.

Here is are some possible responses. This list is not all-inclusive. Additional ideas encouraged!

Day 35

DECIDE & DEFEND




Consider having students explore how many inches are in 1 foot by taking out a 1 foot ruler or by looking at a yard stick.
2 feet = 12 inches + 12 inches = 24 inches
The green snake is 6 inches longer than the black snake.

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Use Numbered Heads

READ to Understand

Decide

Draft

Defend

Reflect

Day 35

Mrs. David's class visited the zoo on a field trip. The zookeeper measured two snakes and asked the students which snake was longer in length. The black snake measured 18 inches and the green snake measured 2 feet.

**Which snake is longer?**

DECIDE & DEFEND

Calvert County Public Schools

Day 35

# Reflect on Learning

- What was mathematically important in the problem?
- What new math idea did you learn today?

DECIDE & DEFEND

Calvert County Public Schools

Day 36

29 + 1

29 + 5

29 + 13

29 + 24

NUMBER TALK

**TEACHER NOTES**

**BEFORE**

This slide has the String of expressions that you will use for today's Number Talk. You can use Smart Ink, right click for PowerPoint Pen, or convert this slide to Smart Notebook so you can easily annotate on the slide. The annotation is an important part of the routine. The expressions should be presented one-at-a-time with skills building on one another. Remember, students will come with a wide variety of strategies. Allow student sharing of these strategies and work toward determining which of the ways were most efficient and brain-friendly.

**DURING**

**Making Landmark or Friendly Numbers:**

The following Number Talks encourage students to make multiples of ten by decomposing one of the addends to make addition more efficient and brain-friendly.

Example: 29 + 5
29 + 1 + 4 (we decomposed the 5 into 1+4 so we could easily access the 1 to combine with the 29)
30 + 4
34
So 29 + 5 = 34 (be sure to conclude by bringing the routine full circle back to the ORIGINAL problem presented and its solution)

**AFTER**

After doing the Number Talk String, be sure to highlight this strategy and encourage students to "look for" places they can use it throughout the day.

Light the Future
Calvert County Public Schools

Day 36

29 + 1

29 + 5

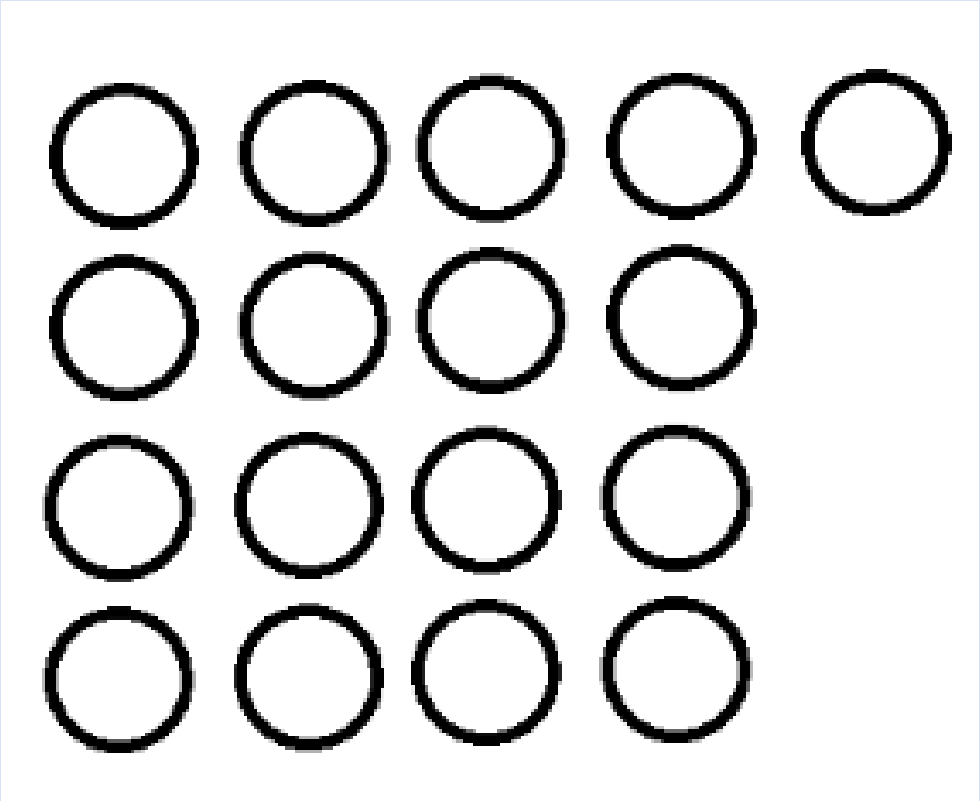
29 + 13

NUMBER TALK

Calvert County Public Schools

Day 37

QUICK COUNT



What do you NOTICE?

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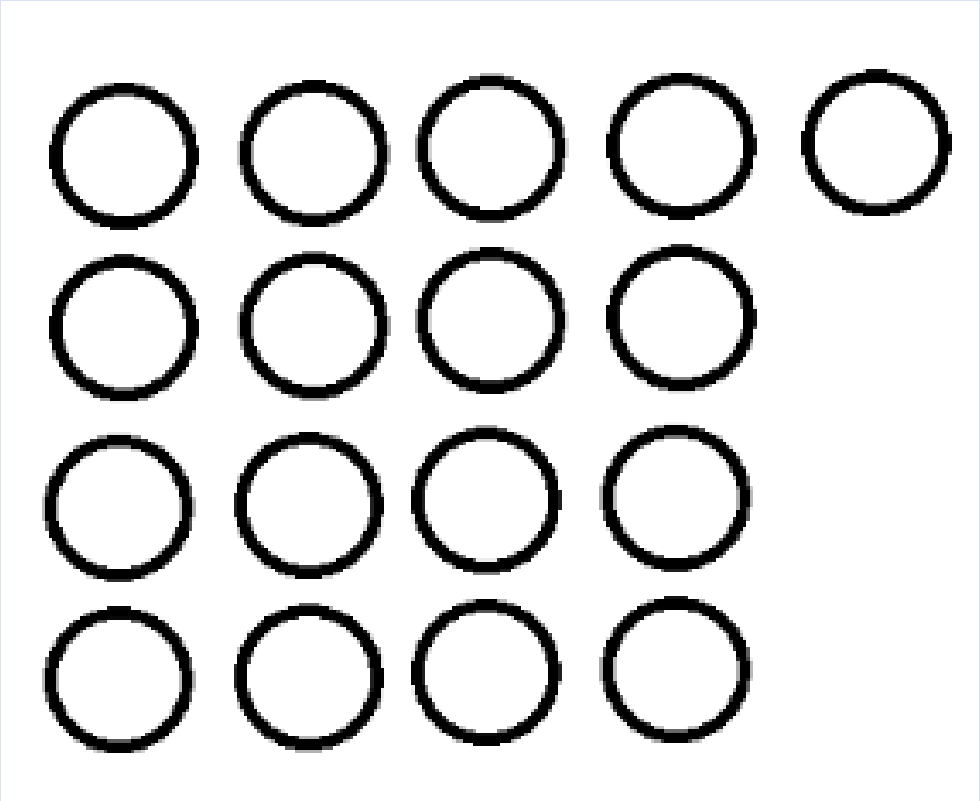
Day 37

QUICK COUNT

# What did you NOTICE?

Day 37

QUICK COUNT



How many do you see?

What counting shortcut did you use?

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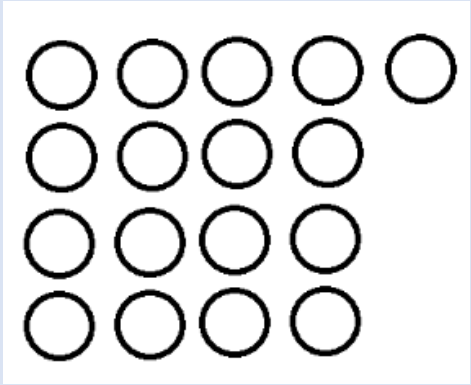
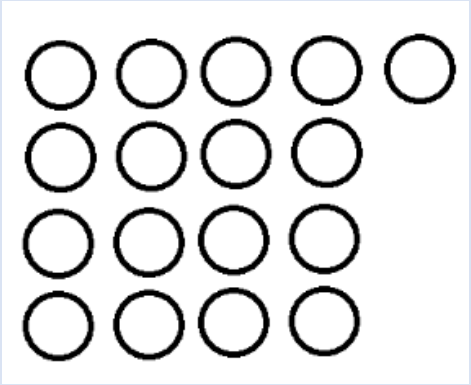
I noticed ____ so I _____

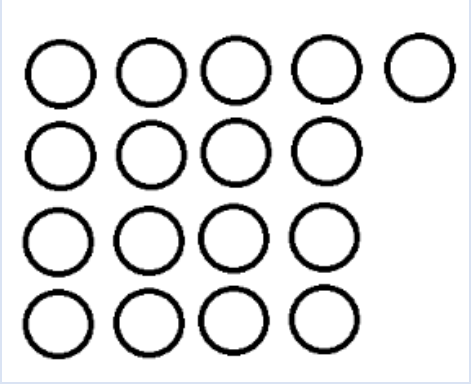
(They) noticed ____ so they___

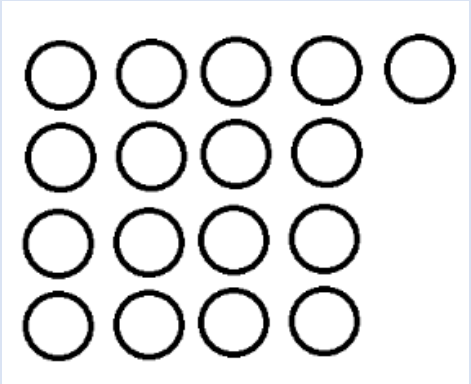
Day 37

QUICK COUNT









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Day 37

# Reflect

**What was mathematically important?**

QUICK COUNT

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Day 38

SPLAT!

How many blue shapes do you

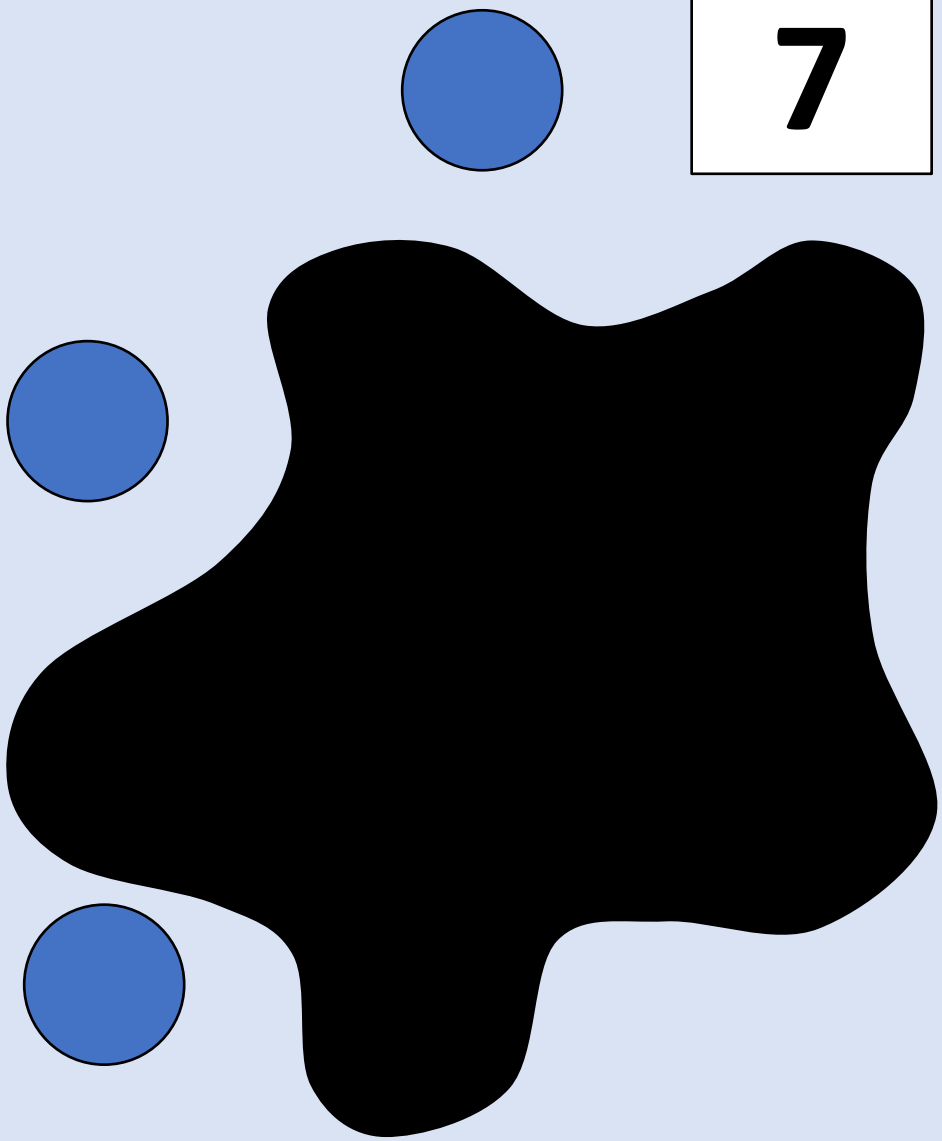
Splat!

How many shapes are under the splat? How do

How else could

Let's look under the splat to see how many shapes

What can we learn from this picture?



7

Day 39

NUMBER TALK

60 + 7

59 + 1 + 6

59 + 7

59 + 12

**TEACHER NOTES**

**BEFORE**

This slide has the String of expressions that you will use for today's Number Talk. You can use Smart Ink, right click for PowerPoint Pen, or convert this slide to Smart Notebook so you can easily annotate on the slide. The annotation is an important part of the routine. The expressions should be presented one-at-a-time with skills building on one another. Remember, students will come with a wide variety of strategies. Allow student sharing of these strategies and work toward determining which of the ways were most efficient and brain-friendly.

**DURING**

**Making Landmark or Friendly Numbers:**

The following Number Talks encourage students to make multiples of ten by decomposing one of the addends to make addition more efficient and brain-friendly.

Example: 59 + 7

59 + 1 + 6
60 + 6
66

so 59 + 7 = 66 (be sure to conclude by bringing the routine full circle back to the ORIGINAL problem presented and its solution)

**AFTER**

After doing the Number Talk String, be sure to highlight this strategy and encourage students to "look for" places they can use it throughout the day.

Light the Future
Calvert County Public Schools

Day 39

NUMBER TALK

60 + 7

59 + 1 + 6

59 + 7

Calvert County Public Schools

Day 40

## Using the DECIDE & DEFEND routine

As you do this routine with students, USE the CHECKLIST on the left side of the problem as a way to help organize the thinking process

- **READ to Understand:** Begin by having students discuss the question being asked. At this time, do NOT focus on the math calculations required or the answer. This step is designed for students to understand the context of the question (What is the gist of the question?)

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*NOTE: This is the CCPS adaptation of the original Decide and Defend protocol*

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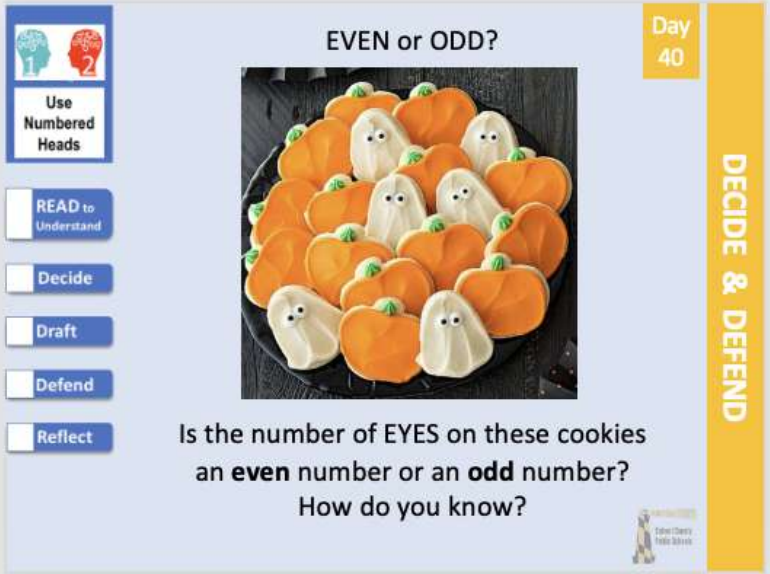
DECIDE & DEFEND

# Use the NEXT SLIDE with students.

Here is are some possible responses. This list is not all-inclusive. Additional ideas encouraged!

Day 40

DECIDE & DEFEND




Allow students to decide and to explain their thinking.
Possible responses:

- The eyes are in pairs which means the number is even.
- The ghost are in pairs, so the eyes must be paired, too, making it even
- Each ghost has 2 eyes and 2 is an even number.
- There is a total of 12 eyes. 12 is an even number.

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Use Numbered Heads

READ to Understand

Decide

Draft

Defend

Reflect

Day 40

# EVEN or ODD?

Is the number of EYES on these cookies an **even** number or an **odd** number? How do you know?

DECIDE & DEFEND

Calvert County Public Schools

Day 40

# Reflect on Learning

- What was mathematically important in the problem?
- What new math idea did you learn today?

DECIDE & DEFEND

Calvert County Public Schools