180 Days of
Number Sense Routines
Grade 3
Days 141-160

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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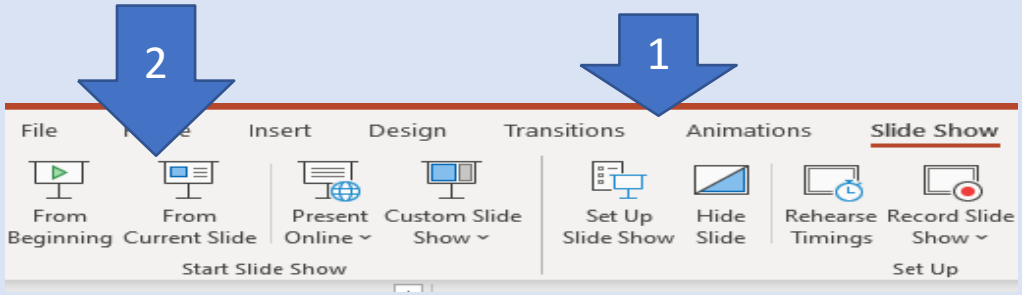
180 Days of
Number Sense Routines

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

Day
141

Estimation Activity

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 vase?**

ESTIMATION

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How many glass gems are in the vase?

The Reveal

69 glass gems

The Reveal

The Reveal

The Reveal

Day 142

8 x 10
8 x 30
8 x 300
80 x 300

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.

DURING

Multiply one-digit whole numbers by multiples of 10 in the range 10-90

Key Ideas:

- 8 x10 = 80 ---- do not spend too much time here. Each expression in the string does NOT require equal time!
- 8 x 30 = 240 ---- build from students' knowledge of 8 x 3 = 24 and knowledge of 8 x 10 = 80
- 8 x 300 = 2400 ---- build from students' understanding of 8 x 3 and 8 x 100 to understand 8 x 300
- 80 x 300 = 24,000 ---- this one is outside of required mastery for 3rd grade, but does build on students' understanding of multiplying by multiples of 10. **A good strategy that students may is 8x10x300 and use what they see in the previous to know 8x300=2400 so we now are multiplying 2400x10. This would be a good place to remind students of the term *Commutative Property of Multiplication*.**

Remember, students will come with a variety of strategies. During a Number Talk, the students explain their way of thinking. When students find ways that are especially efficient, highlight those strategies in the reflection that should follow the Talk. Help students to understand a wide variety and guide them into understanding that some strategies work better in some situations, so knowing more than one way to solve an equation like this one is important so they can later choose the method that is most efficient.

AFTER

Help students to recognize the patterns of products when values are multiplied by multiples of 10.
Do NOT use the language, "add a zero to the end" since we are, in fact, not adding zero.
Help students to use the language that we are multiplying by a multiple of 10 which will always cause the ones place to be a zero.

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NUMBER TALK

Day 142

NUMBER TALK

8 x 10

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Day 143

DECIDE & DEFEND

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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Day 143

Use the NEXT SLIDE with students.

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

This task builds on yesterday's Number Talk.
It further reinforces Standard 3.NBT.A.3: **Multiply one-digit whole numbers by multiples of 10 in the range 10-90.**

Giant offers the best price in this example.

One method students may use is to calculate how many cookies can be purchased with the $25:
Fast Stop: 60 x 5 = 300 cookies for $25
Roland's: 30 x 6 = 180 cookies for $25
Giant: 40 x 8 = 320 cookies for $25

DECIDE & DEFEND

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Use Numbered Heads

READ to Understand

Decide

Draft

Defend

Reflect

THE SAVVY SHOPPER

Day 143

Max is in charge of buying cookies for the school picnic. He is trying to decide which grocery store has the best price. For $25, Max can buy

- **60 five-packs of cookies from Fast Stop**
- **30 six-packs of cookies from Roland's**
- **40 eight-packs of cookies from Giant**

Which store is offering the best price? How do you know?

DECIDE & DEFEND

Calvert County Public Schools

Day 143

Reflect on Learning

- A new math idea I learned today is…
- Next time I plan to… because…

DECIDE & DEFEND

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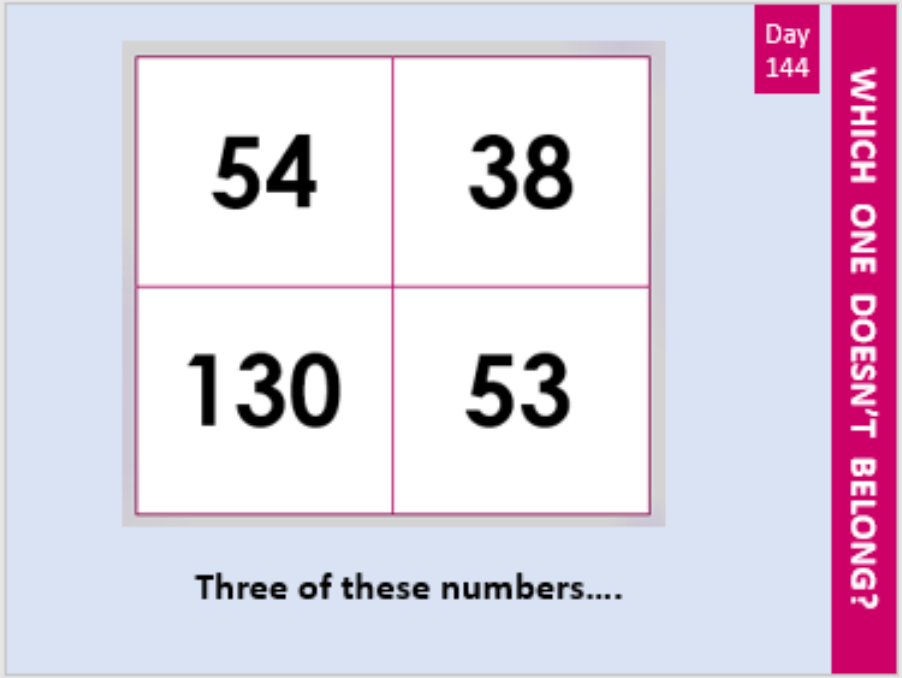
Day 144

WHICH ONE DOESN'T BELONG?

Use the NEXT SLIDE with students.

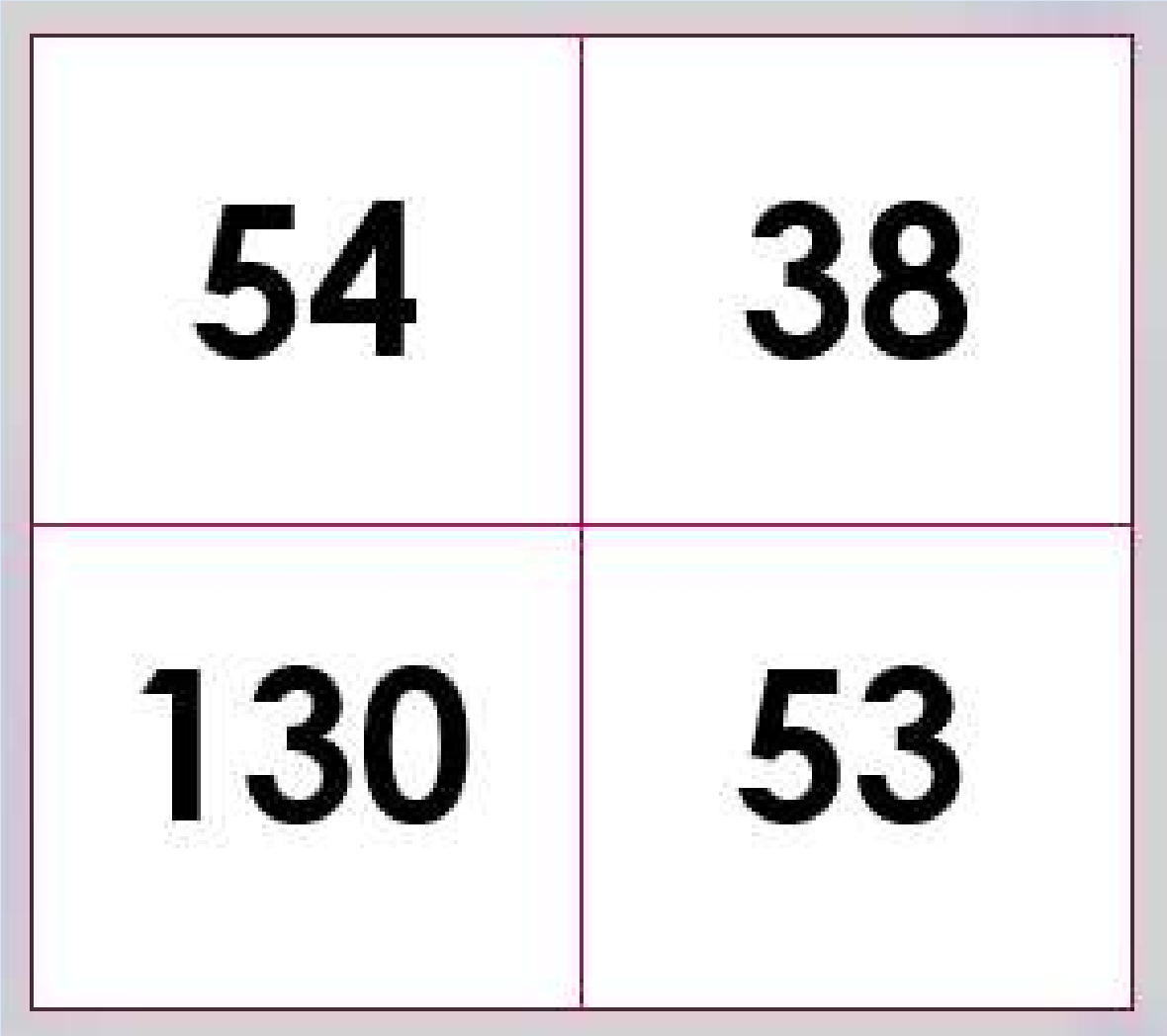
Here is are some possible responses. This list is not all-inclusive. Additional ideas encouraged!



- Three of these numbers contain the digit 3. 54 does not contain the digit 3.
- Three of these numbers have more tens than ones (note 130 has 13 tens and 0 ones). 38 has fewer tens than ones.
- Three of these numbers are double-digit numbers. 130 is not a double-digit number since it has a hundreds place digit.
- Three of these numbers are even numbers. 53 is not even; it is an odd number.

Day 144

WHICH ONE DOESN'T BELONG?



Three of these numbers….

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Let's Count by Thirds

Day 145

SAY:

"Today we are going to CHORAL COUNT by thirds. Everyone will count together. We will count slowly and thoughtfully. As we count, I will CHART the numbers *(record on next slide).* **As I chart the numbers, begin looking for patterns that we can discuss."**

AFTER CHARTING THE COUNT:

- Have students say 1/3, 2/3, 3/3, 4/3, 5/3…..
- After you chart the thirds, ask students if they notice any patterns. Discuss.
  - *Did they notice that all of the denominators are 3?*
  - *Did they notice that the numerator increases by 1 each time?*
  - *Did they notice that the value is increasing?*
  - *Did they notice that 3/3 is equal to 1?*
  - *Did they notice that everything after 3/3 is a value greater than 1?*
- If it has not been noted already, go back and box all of the thirds that are equivalent to whole numbers: 3/3, 6/3, 9/3.
- Ask students **what do they notice about the fractions that you boxed**. Discuss their ideas.

CHORAL COUNTING

Let's Count by Thirds

Day 145

CHORAL COUNTING

$\frac{1}{3}$	____	____	____	____	____
____	____	____	____	____	____
____	____	____	____	____	____

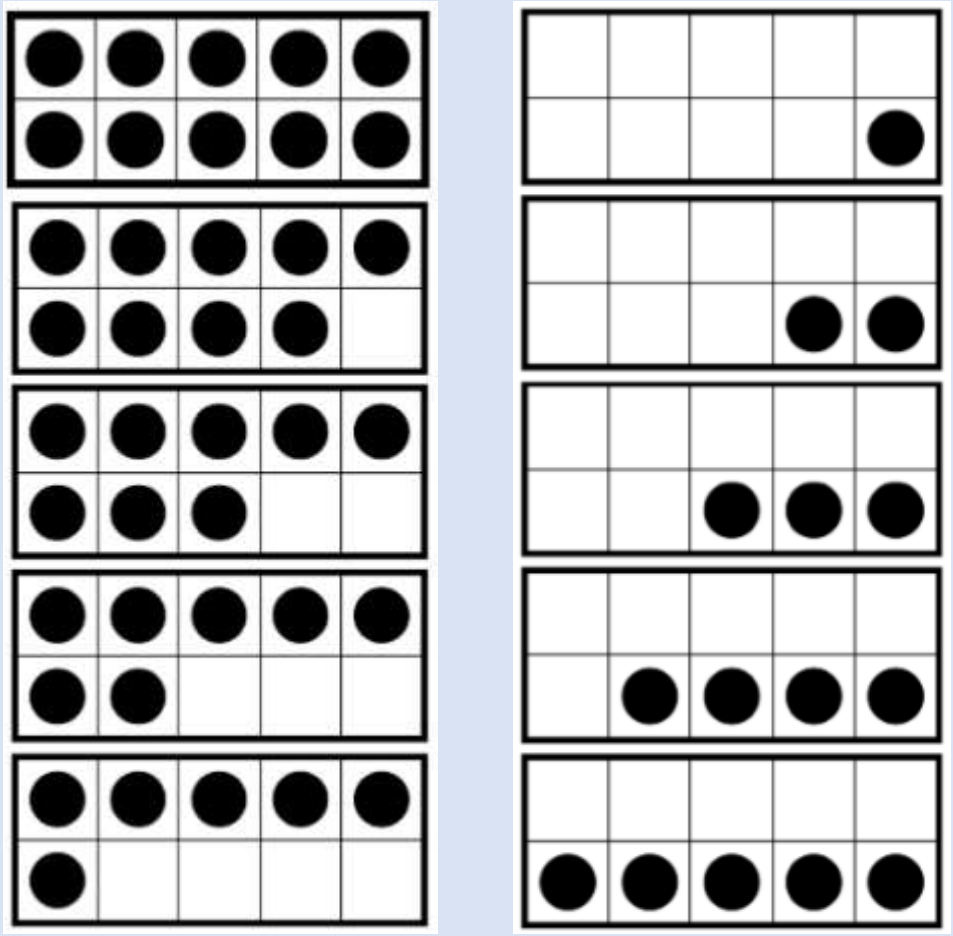
Directions for QUICK COUNT routines

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 146

QUICK COUNT



What do you NOTICE?

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Day 146

QUICK COUNT

What did you NOTICE?

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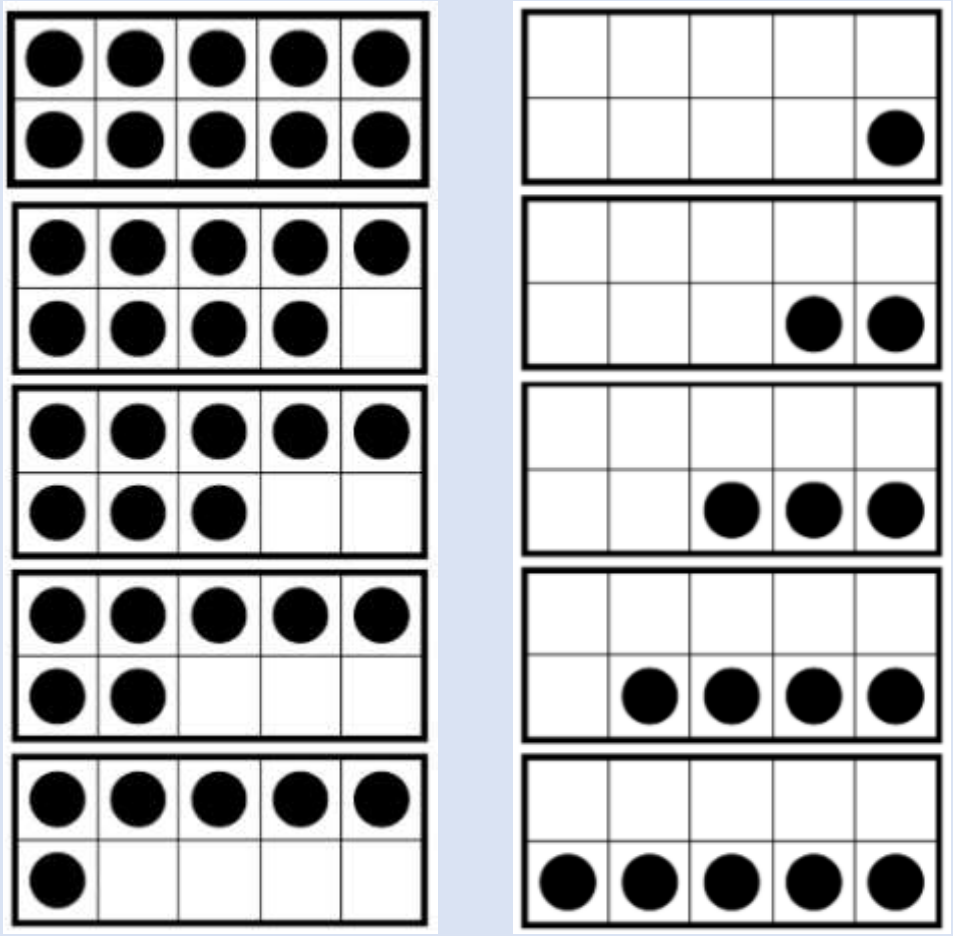
Day 146

QUICK COUNT



How many dots do you see?

What counting shortcut did you use?

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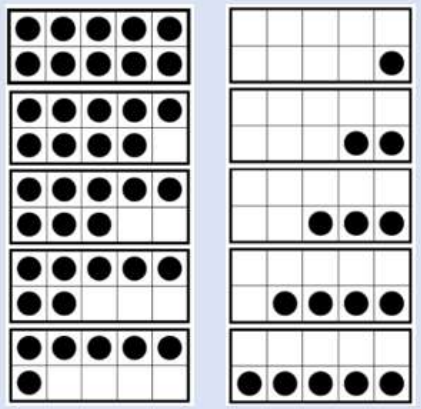
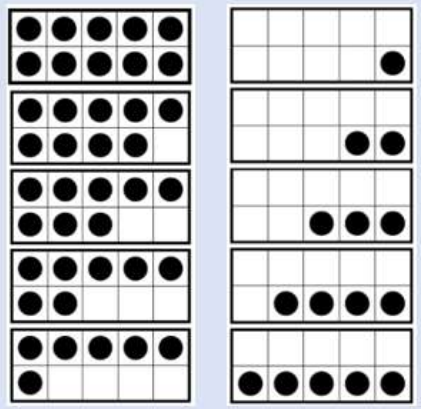
I noticed ____ so I _____

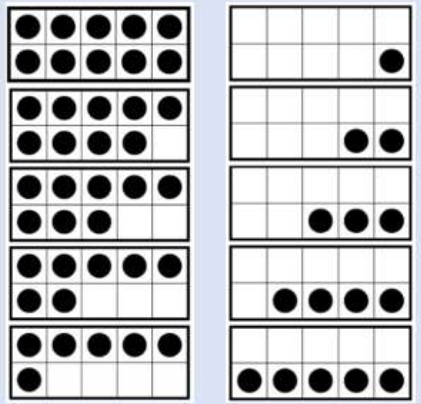
(They) noticed ____ so they___

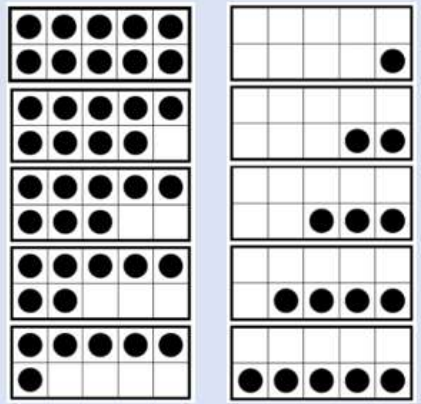
Day 146

QUICK COUNT









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Day 146

Reflect

What was mathematically important?

QUICK COUNT

What is the TOTAL VALUE of the dimes in the roll?

(do not include the sample dime that is in front of the roll)

Day 147

What value is too LOW?

What value is too HIGH?

What is your "JUST RIGHT ESTIMATE"?

Explain your REASONING?

There are 49 dimes.

49 x 10 cents = 490 cents

490 cents = **$4.90**

ESTIMATION

Run this as a PowerPoint. Be sure to use the "Play" feature under the Slide Show tab. Students will need paper/pencil or dry erase tools (teacher's choice).

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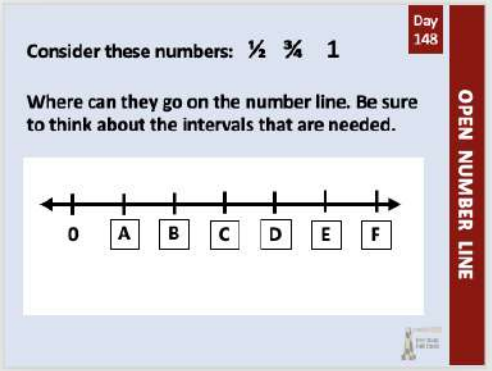
Use the NEXT SLIDE with students.

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

Day 148

OPEN NUMBER LINE



The zero has been placed at the far left of the number line.

Possible Response:

- ½ = B, ¾ = C, 1 = D (the interval between ¾ and 1 is one-fourth, so A would be ¼ and B would be ½)

Other possibilities exist, too:

- ½ = A, 1 = B . In this example, each interval is ½, so ¾ would fall BETWEEN A and B
- If students place the ½ at C, then F must represent 1. The value of ¾ would then fall halfway between C and F which is between D & E.

The goal of this task is to understand INTERVALS. The interval between ½ (or 2/4) and ¾ is the SAME as the interval between ¾ and 1 whole (or 4/4)

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

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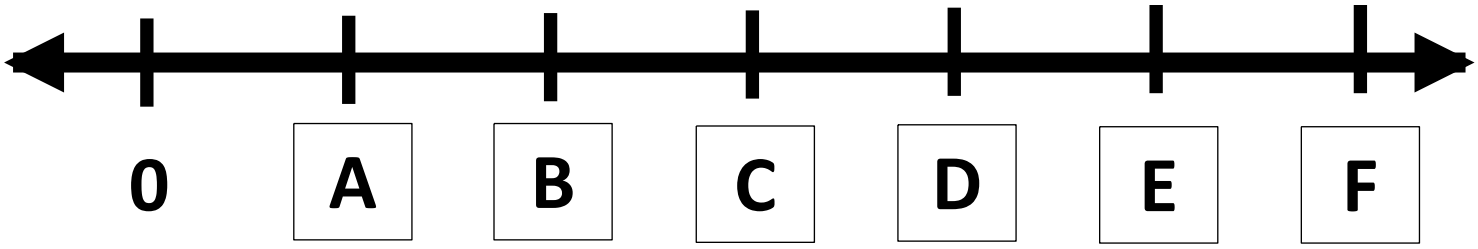
Day 148

OPEN NUMBER LINE

Consider these numbers: ½ ¾ 1

Where can they go on the number line. Be sure to think about the intervals that are needed.



6

Day 149

SPLAT!

What whole number is r… apes? …?

Splat!

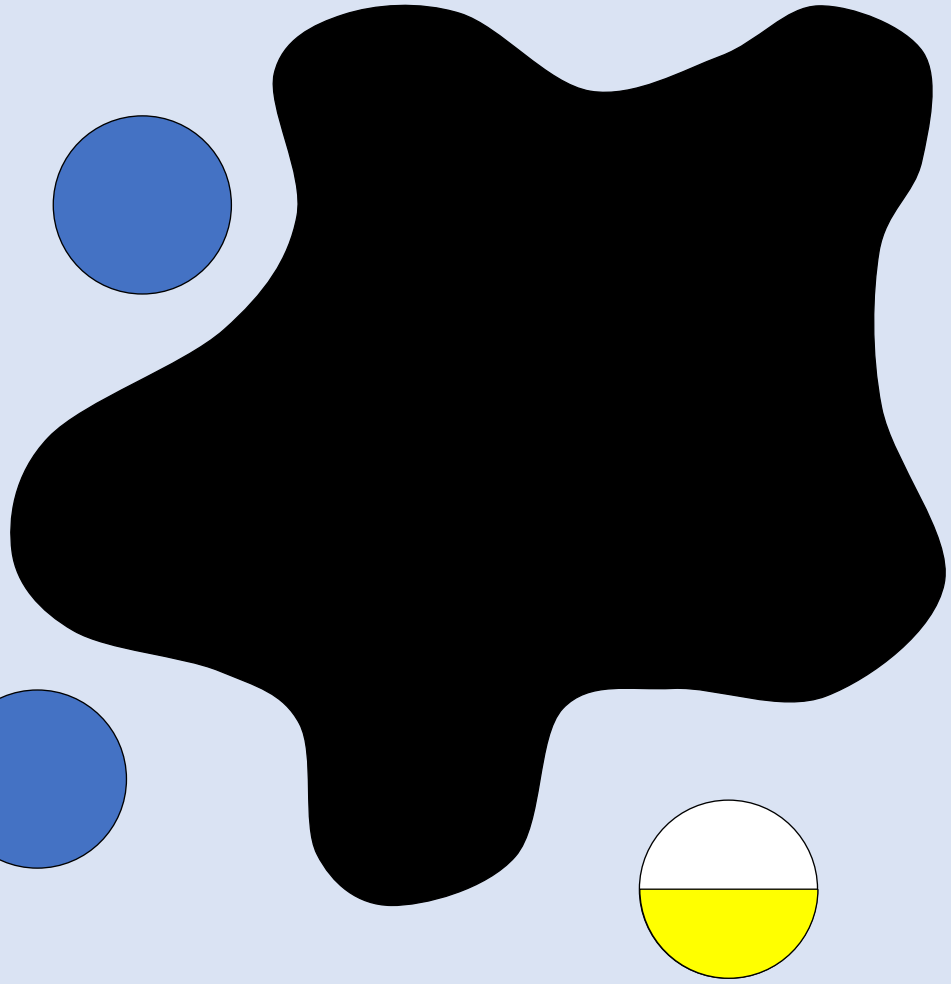
What value is hiding? How do you know?

How could we …

What is another way we could represent that value?

Let's look under the splat to see what is hiding?

What can we learn from this picture?



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.

Day 150

CHORAL COUNTING

Skip Counting Patterns

SAY: Today we are going to skip count by 2's beginning with the number 58.
We will do this count together. Let's go slowly, so I can record the values you say as you count.
As I record the values, begin looking for patterns that we will talk about after the count.

As students do a choral count, record the numbers on the next slide.
Say, "What are some things you notice about the pattern of numbers we counted?

- Every number is an EVEN number because we are beginning on an even number and that pattern will continue since we are counting by 2s
- Each number will be a number that is 2 greater than the last number stated.
- If we multiply the number of people in the circle by 2 and add that number to 183, we will know the last number stated.

ASK: Think about how the pattern would be different if we start at 57 and skip-count by 2s? Let's try it. Let's begin on 57 and skip-count by 2s. We'll count slowly so I can record the numbers.

- Students should notice that each number is ODD this time because we started on an odd number.

Skip Counting Patterns by 2s

Day 150

58	57
60	59
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

CHORAL COUNTING

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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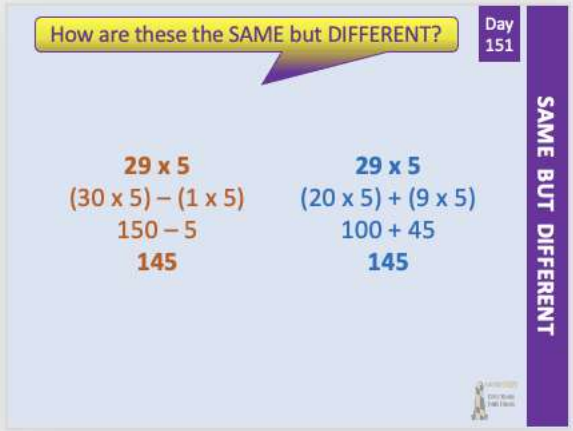
Use the NEXT SLIDE with students.

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….”



- They are the same expression and the same product, but they took different approaches to find the product
- They both have changed the original equation, but the left uses subtraction, and the right uses addition
- They both changed the original equation to make friendly numbers but the left increased 29 to 30 and the right decomposed 29 into 20 + 9
- They both use the Distributive Property as a strategy for solving

Day 151

SAME BUT DIFFERENT

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How are these the SAME but DIFFERENT?

Day 151

SAME BUT DIFFERENT

29 x 5

(30 x 5) – (1 x 5)

150 – 5

145

29 x 5

(20 x 5) + (9 x 5)

100 + 45

145

Day 152

Esti-Mystery

Estimation Activity with clues!

Students use clues to solve the estimation mystery.
After all of the clues are revealed, students will have enough information to determine if their initial estimate was correct.

Clues are revealed one at a time with time to discuss and refine original estimates after EACH clue is revealed.
No one should be stuck with their original estimate – encourage mindful refinements.

Students may benefit from using paper and pencil to work through possibilities or consider creating a class chart where possibilities are added and crossed off as each clue is revealed.

ESTIMATION

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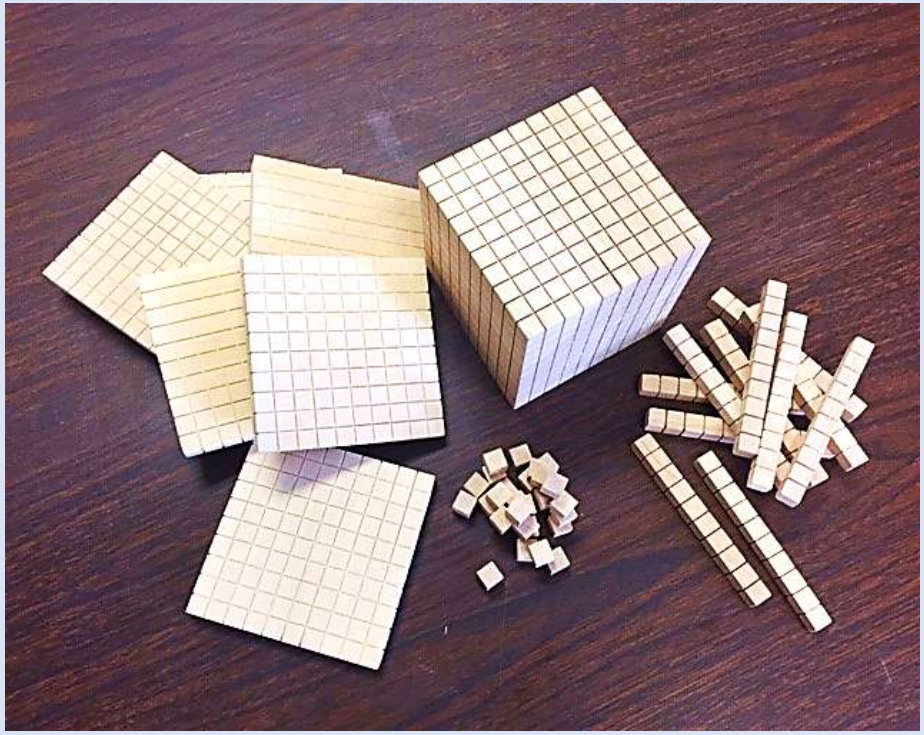

What number do these Base Ten Blocks represent?

As the clues appear, use the information to narrow the possibilities to a smaller set. Then use estimation to determine which of the remaining answers is the most reasonable.

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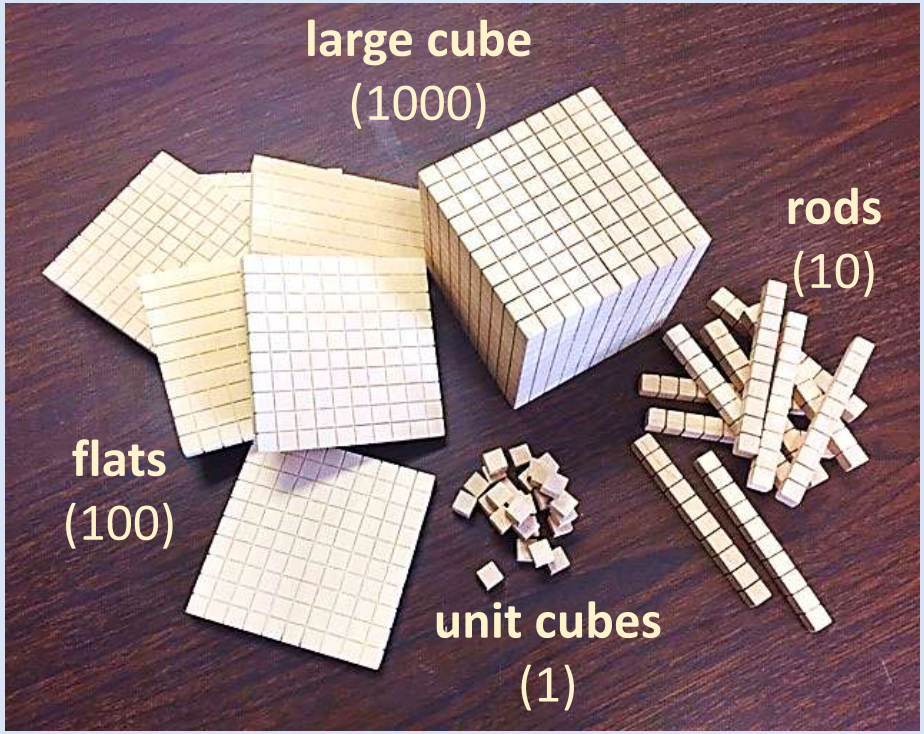


Clue #1

The large cube is worth 1000

Clue #2

The total value is < 2000

Clue #3

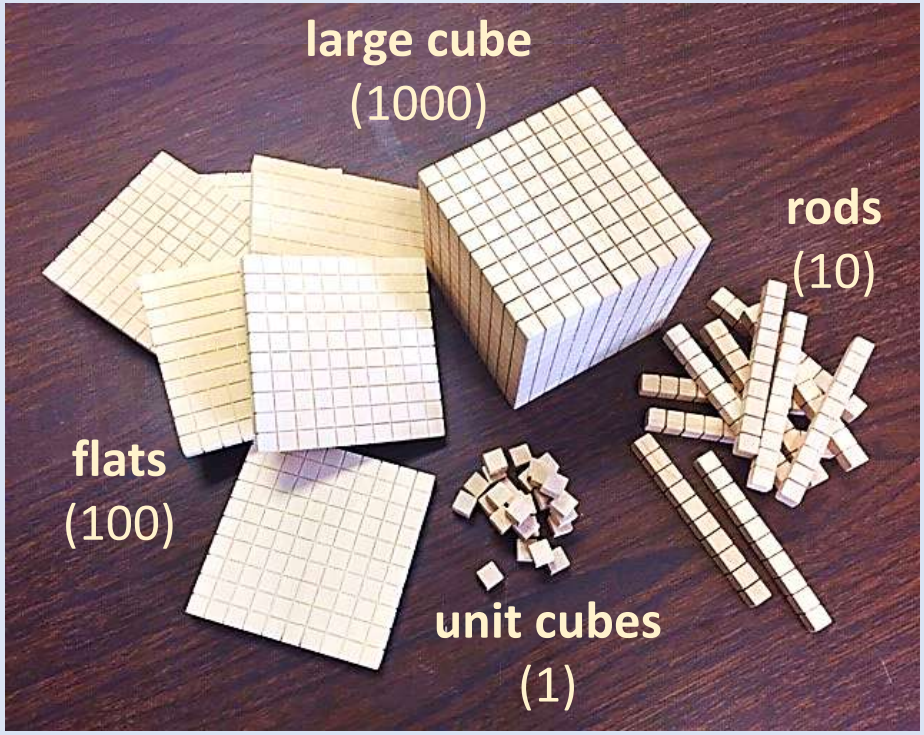
The sum of the flats is 3/5 the value of the large cube

Clue #4

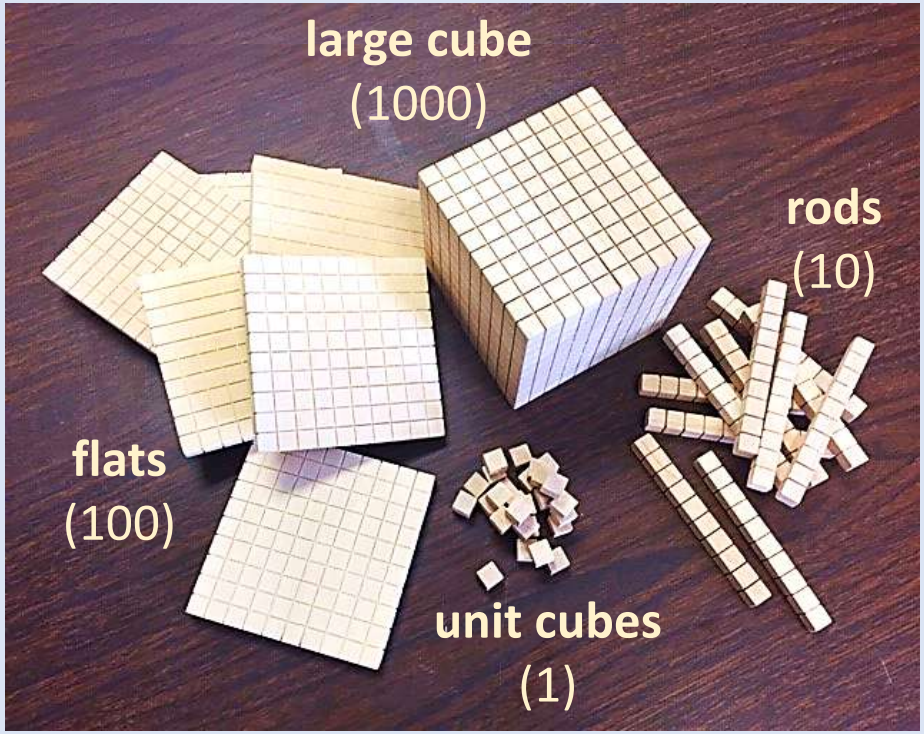
The sum of the pile of rods equals $1\frac{1}{10}$ of a flat

Clue #5

There are 29 unit cubes



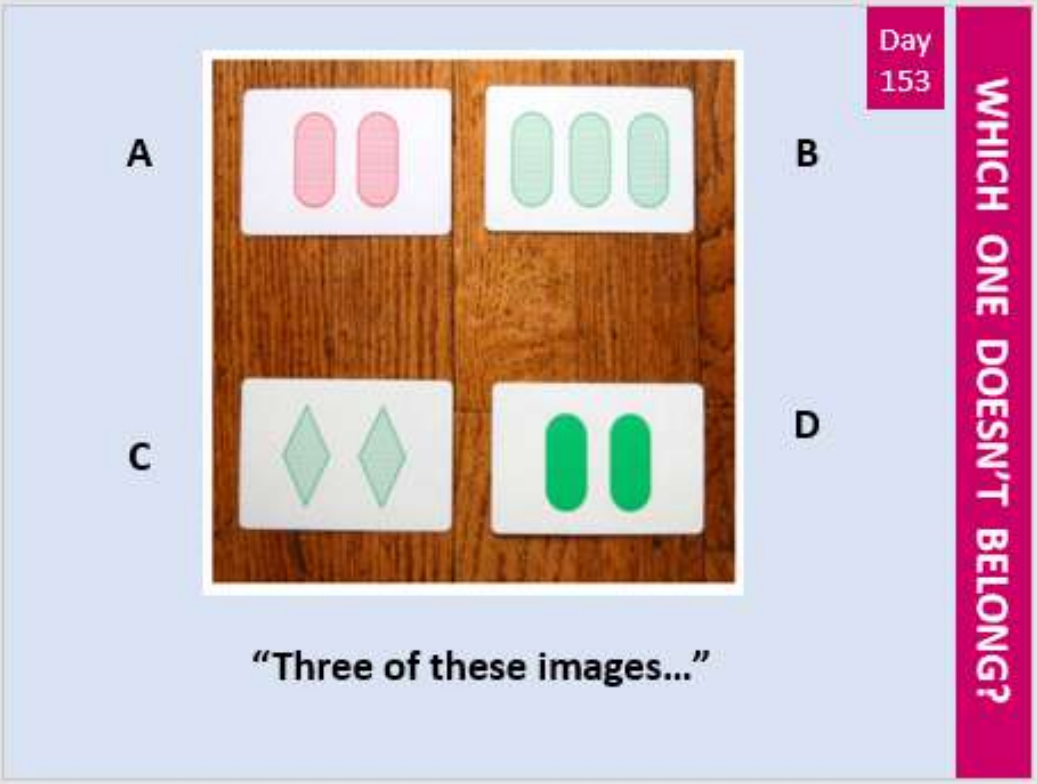
By combining the clues and estimation, you now have enough information to determine the answer.



The Reveal
Click to see the answer.

Use the NEXT SLIDE with students.

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



Possible Responses

- Three of these images are green. A is not green.
- Three of these images have two figures. B does not have 2 figures, it has 3.
- Three of these images are ovals. C is not made of ovals, they are quadrilaterals.
- Three of these images are shaded with lines (we can say, "have hatch marks"). D is not hatched, the shading is solid.

Day
153

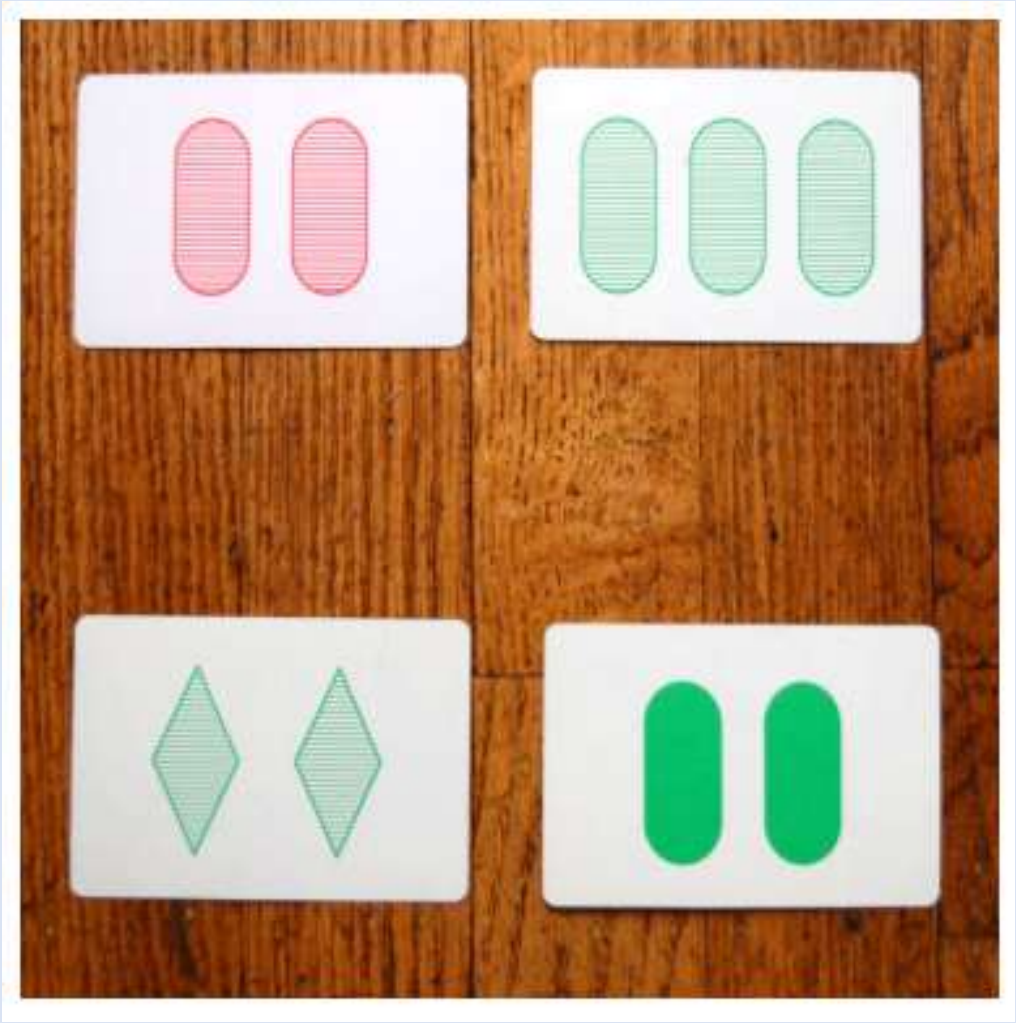
WHICH ONE DOESN'T BELONG?

Day 153

WHICH ONE DOESN'T BELONG?

A

B



C

D

"Three of these images…"

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205 - 100
199 - 98
200 - 98
201 - 99

Day 154

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.

DURING

Adjusting One Number to Create an Easier Problem: *The following number talks require students to make decisions about which numbers might be adjusted to create an easier problem.*

- 205 – 100 ---- this one is designed to be foundational and should take a very short amount of time. Help students to notice that because the subtrahend is 100, it is easy to subtract it.
- 199 – 98 ---- this one is also designed to be foundational and should take a very short amount of time. Help students to recognize that because the minuend is 199, it is easy to subtract from the 9s
- 200 – 98 ---- this one might be trickier, but if students think of the 200 as 199, it becomes very easy. They can picture 199-98 and then add the 1 back at the end OR they can think of it as 199-97. By reducing BOTH values by 1, the distance remains the same which means the solution is the same.
- 201 – 99 ---- students might increase 99 to 100 and subtract. They will need to remember to subtract the 1 at the end or they could adjust both values to keep the distance equal 199 – 97 = 102

Remember, students will come with a variety of strategies. During a Number Talk, the students explain their way of thinking. When students find ways that are especially efficient, highlight those strategies in the reflection that should follow the Talk. Help students to understand a wide variety and guide them into understanding that some strategies work better in some situations, so knowing more than one way to solve an equation like this one is important so they can later choose the method that is most efficient.

AFTER

Help students recognize the shortcuts that may exist. Teach them to look for ways to subtract efficiently using strategies, such as compensation.

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205 - 100

Day 154

NUMBER TALK

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Day 155

CHORAL COUNTING

Skip Counting Patterns

SAY: We are going to skip count by 2's beginning with the number 183.
We will do this count together. Let's go slowly, so I can record the values you say as you count. As I record the values, begin looking for patterns that we will talk about after the count.

As students do a choral count, record the numbers on the next slide.
Say, "What are some things you notice about the pattern of numbers we counted?

- Every number is an ODD number because we are beginning on an odd number and that pattern will continue since we are counting by 2s
- Each number will be a number that is 2 greater than the last number stated.
- If we multiply the number of people in the circle by 2 and add that number to 183, we will know the last number stated.

ASK: Think about how the pattern would be different if we start at 183 and skip-count by 3s? Let's try it. Let's begin on 183 and skip-count by 3s. We'll count slowly so I can record the numbers.

- Numbers would alternate even, odd, even, odd
- The last number stated would be greater than 183 and greater than the last number of the skip-count by 2 routine
- If there is an odd number of people in the circle, the last number will be odd since we started with an odd number.
- If there is an even number of people in the circle, the last number will be even since the 2nd person would say an even number since the first number was odd.

AFTER the count, discuss the CHART on the next slide to compare the 2s vs the 3s pattern.

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Skip Counting Patterns

Day 155

CHORAL COUNTING

by 2s	by 3s
183	183
185	186
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Day 156

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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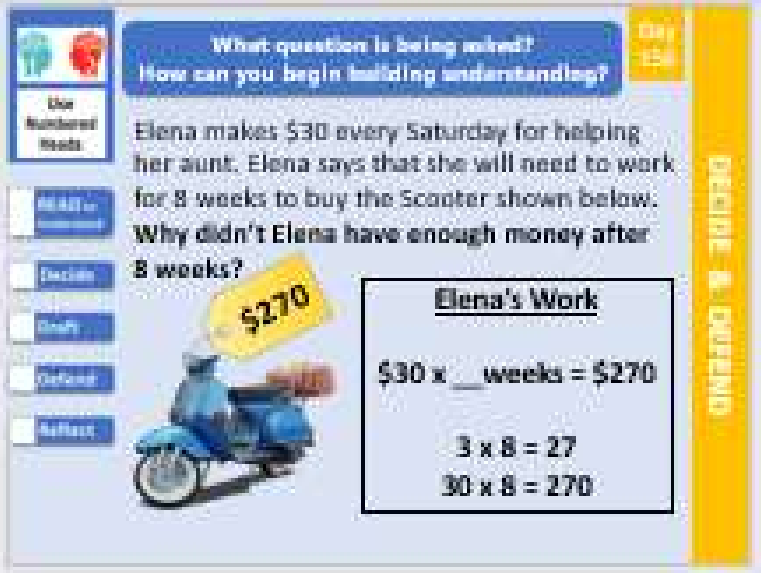
DECIDE & DEFEND

Use the NEXT SLIDE with students.

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

Day 156

DECIDE & DEFEND



30 x 8 = 240, so 8 weeks is not enough
30 x 9 = 270, so she will need to work one additional week to have enough money.

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Use Numbered Heads

READ to Understand

Decide

Draft

Defend

Reflect

What question is being asked? How can you begin building understanding?

Day 156

Elena makes $30 every Saturday for helping her aunt. Elena says that she will need to work for 8 weeks to buy the Scooter shown below.

Why didn't Elena have enough money after 8 weeks?

Elena's Work

$30 x __weeks = $270

3 x 8 = 27

30 x 8 = 270

DECIDE & DEFEND

Day 156

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

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4

Day 157

SPLAT!

What is the value of the shapes shown below?

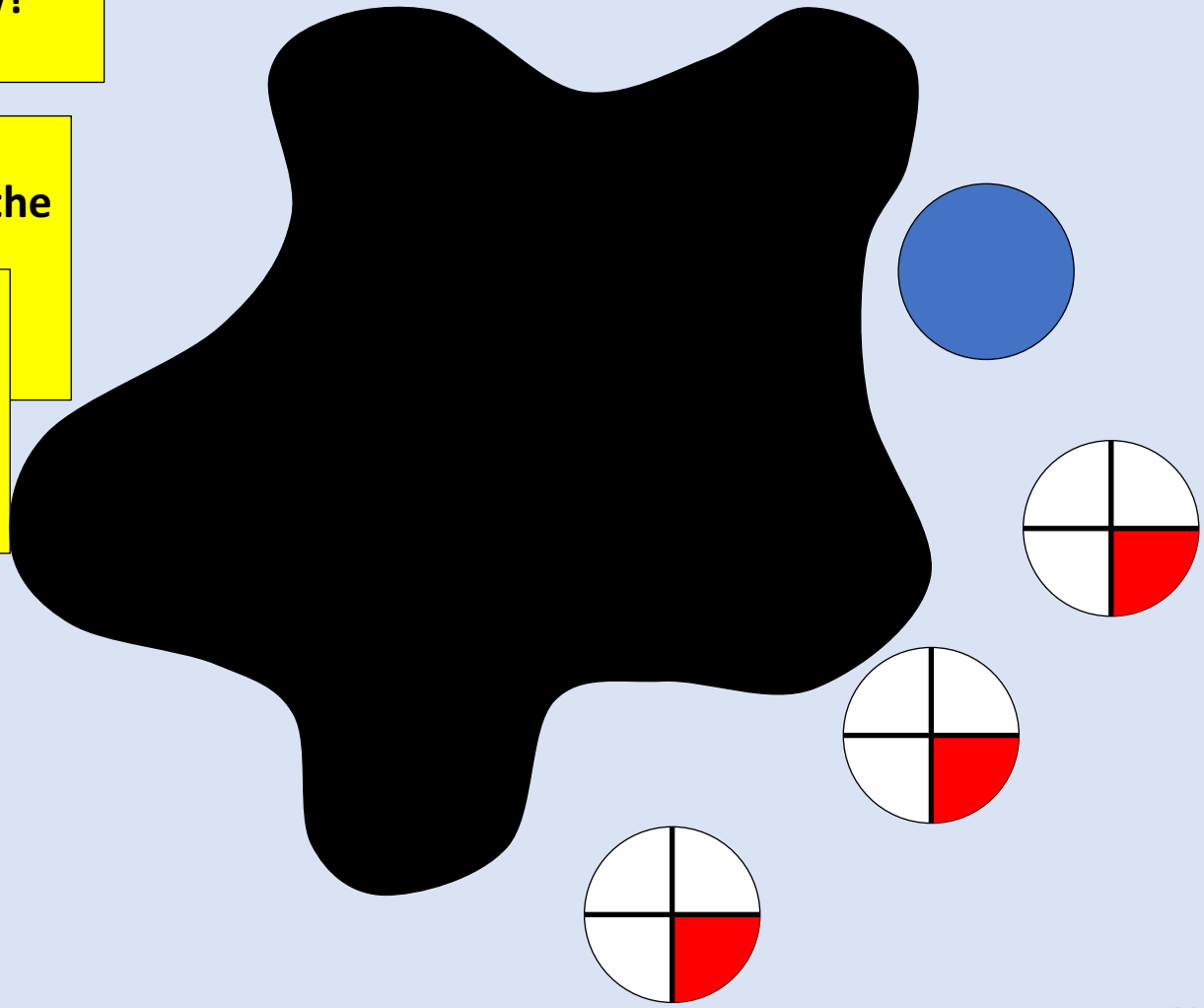
Splat!

What is the value of the hidden shapes?

How could that value be represented?

Let's look under the splat to see

What can we learn from this picture?



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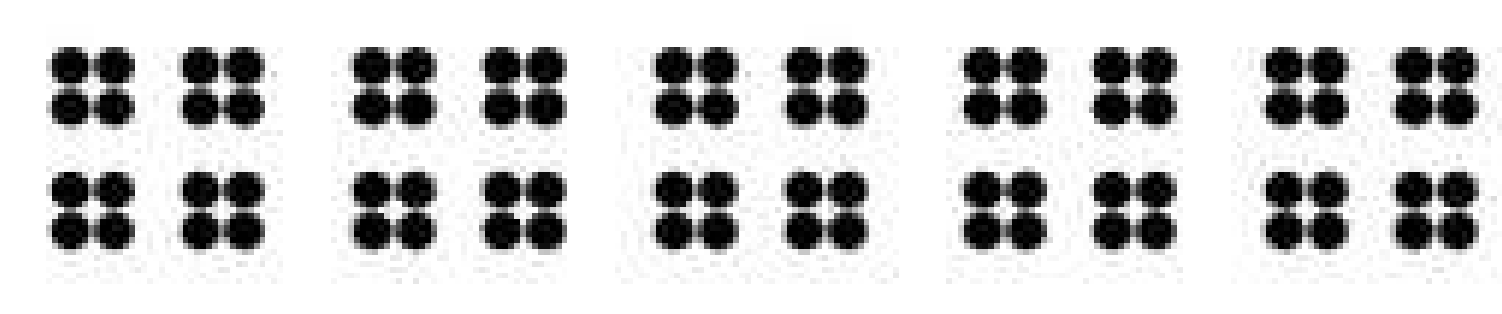
Day 158

What do you NOTICE?



QUICK COUNT

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Day 158

QUICK COUNT

What did you NOTICE?

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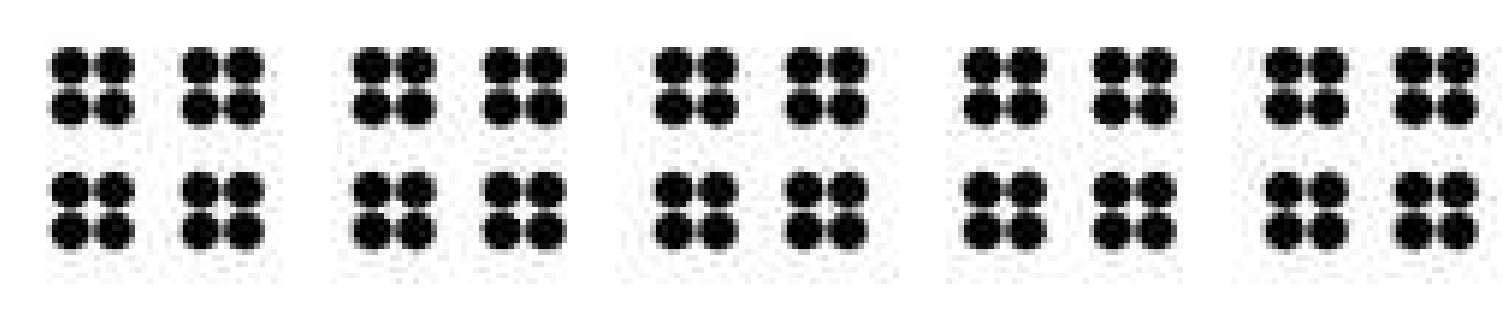
Day
158

QUICK COUNT



How many dots do you see?
What counting shortcut did you use?

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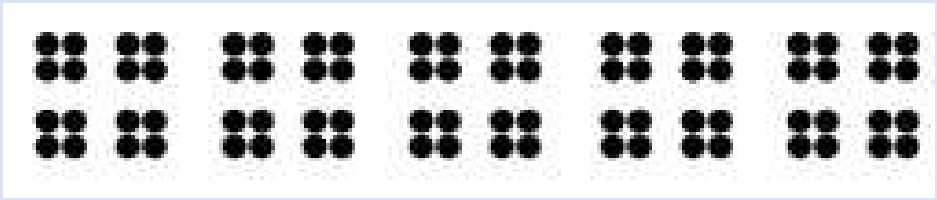
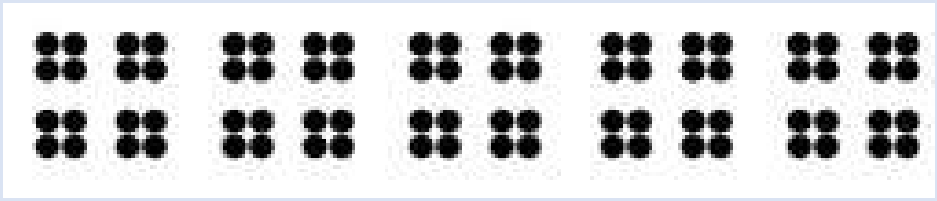
I noticed ____ so I _____

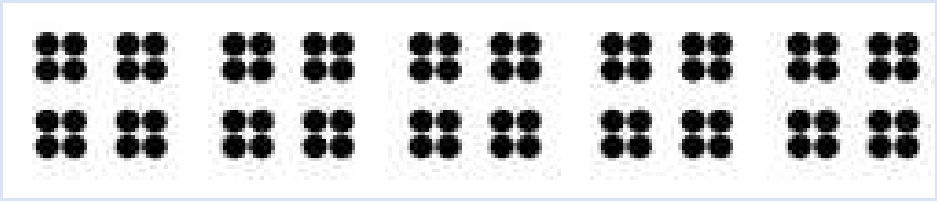
(They) noticed ____ so they___

Day 158

QUICK COUNT







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Day 158

Reflect

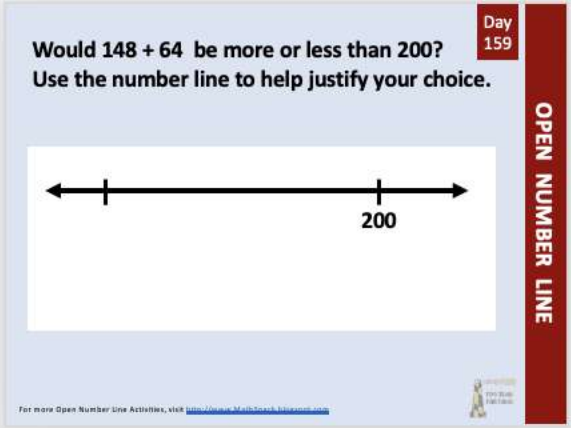
What was mathematically important?

QUICK COUNT

Day 159

Use the NEXT SLIDE with students.

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



There are <u>many ways</u> to use the number line to assist in addition. Here is ONE way:

148 + 2 = 150 [using benchmark numbers]
Now we only need 50 more to get to 200.

Since the 50 that we need and the 2 that we used previously to get to 150 is only 52, we will have many extras from the 64 to go beyond the 200 on the number line.

OPEN NUMBER LINE

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Day 159

Would 148 + 64 be more or less than 200? Use the number line to help justify your choice.

OPEN NUMBER LINE

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

Day 160

73 + 8
248 + 6
137 + 18
565 + 17

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.

DURING

Adding Up to Multiples of 10

Possible Responses:

- 73 + 8 ---- we need 7 to make a multiple of 10, so decompose 8 into 7 + 1, then 73 + 7 = 80 and 80 + 1 = 81
- 248 + 6 ---- we need 2 to make a multiple of 10, so decompose 6 into 2+4, then 248+2=250 and 250+4=254
- 137 + 18---- we need 3 to make a multiple of 10, so decompose 18 into 3 + 15, the 137+3+140 and 140+15=155
- 565 + 17 ---- we need 5 to make a multiple of 10, so decompose 17 into 5 + 12, then 565+5=560, then 560+12=572

Remember, students will come with a variety of strategies. During a Number Talk, the students explain their way of thinking. When students find ways that are especially efficient, highlight those strategies in the reflection that should follow the Talk.

AFTER

Help students to recognize how to use the Commutative Property to make calculations more efficient.

NUMBER TALK

Day 160

NUMBER TALK

73 + 8

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