180 Days of
Number Sense Routines
Grade 1
Days 101-120

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 Prekindergarten through Grade 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 within the week 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, 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.

180 Days of
Number Sense Routines

PowerPoint or Smart Notebook?

Since some of the slides include animation features, these slides will only work when using PowerPoint. Specifically, (1) **Estimation** when presented as images and (2) **Splat!** will only work correctly when you use the Slide Show feature in PowerPoint. Some teachers prefer the functionality of Smart Notebook and slides without animation can be used on this platform.

Download both the PowerPoint and the Smart Notebook versions from Schoology and place them on your computer's desktop so you can access the slides even without an internet connection.

PowerPoint

Animations for these two routines only work when presented in Slide Show mode

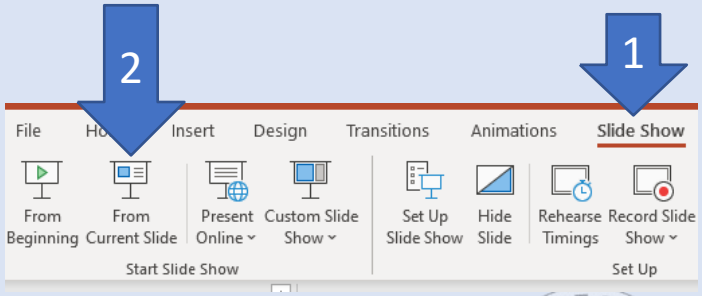
- Estimation
- Splat!

Smart Notebook

Allows for easy annotation

- Decide & Defend
- Number Talk
- Open Number Line
- Quick Count
- Same But Different
- Which One Doesn't Belong?

PRO TIP: You can write directly on any PowerPoint slide when it is in Slide Show mode by right clicking and selecting <Pointer Options>



How to Run PowerPoint in Slide Show mode:

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

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

180 Days of
Number Sense Routines

Acknowledgements

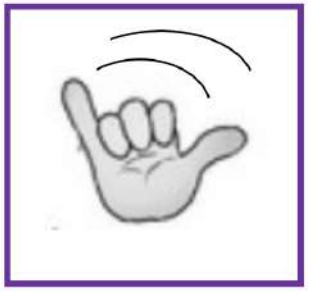
We are grateful to those who have inspired this project – and there have been many. These slide decks were designed for Grades 1–5 with custom-built daily routines for each grade level. The nine routines blend original creations, adaptations, and OER materials. We have made our work available in Open Educational Resources so that others may benefit as we have from the collaboration of other educators. 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
- *As Close As It Gets* https://www.mathisfigureoutable.com/ascloseasitgets by Pam Harris

Number Sense Routine
Hand Signals

I'm thinking

I have an answer
AND a strategy



I agree

Day 101

CHORAL COUNTING

Looking for Patterns: Skip Counting by 5's

- **SAY: "**We are going begin with the task of skip-counting by 5's.
  We'll begin with the number 5. Remember, we will count slowly all together.
- Count together: 5, 10, 15, 20, ….
- **As students count, CIRCLE the number on the chart (next page)**
- **When you get to 80, STOP to reflect.**
- **SAY: "**Math is all about patterns and relationships. Does anyone see a pattern with the numbers we circled during our count?"
- **DISCUSS:** Take time to discuss the pattern of circled numbers. Ask questions to continue focusing the discussion on the reasons WHY we see those patterns (students might notice, for example, that the ones place alternates between 5 and 0 as you count).
- **SAY:** "Look at the patterns we have already discussed. Do you think if we continue counting that we will circle the number 118?"
- Point to 118 at the bottom of the chart. Allow students to share ideas.
- **SAY**: "Which numbers will be circled when we get to the bottom row?" Discuss ideas.
- Continue counting from 80 where you left off to confirm students' ideas.
- **SAY**: "If this chart kept going, what is the next number that we would circle?" (125)
- ASK: "How do you know it will be 125?"

NOTE: skip-counting by 5s is an important skill for students to learn in preparation for telling time to the 5 minute in grade 2

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1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

Day 101

Looking for Patterns

Skip Counting by 5's

CHORAL COUNTING

Day 102

Using the DECIDE & DEFEND routine

- **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

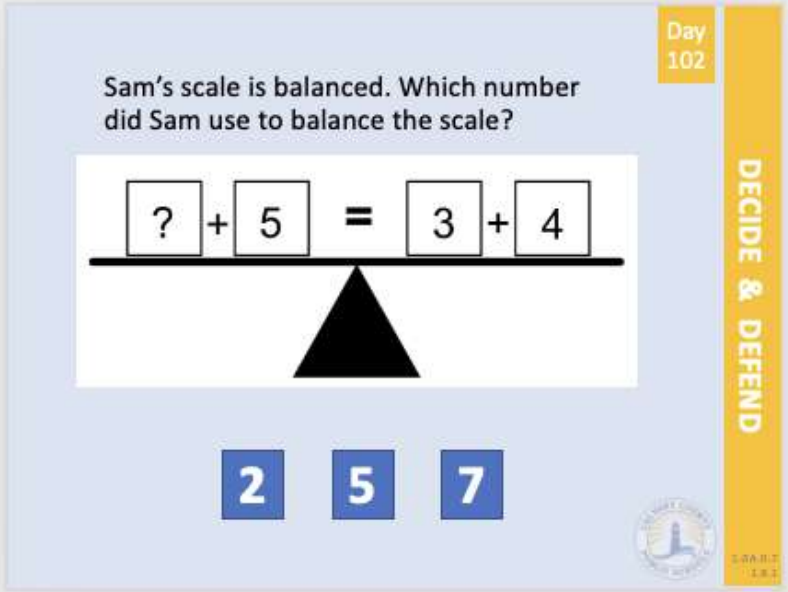
DECIDE & DEFEND

Use the NEXT SLIDES with students.

Teacher Reference Page

Day 102

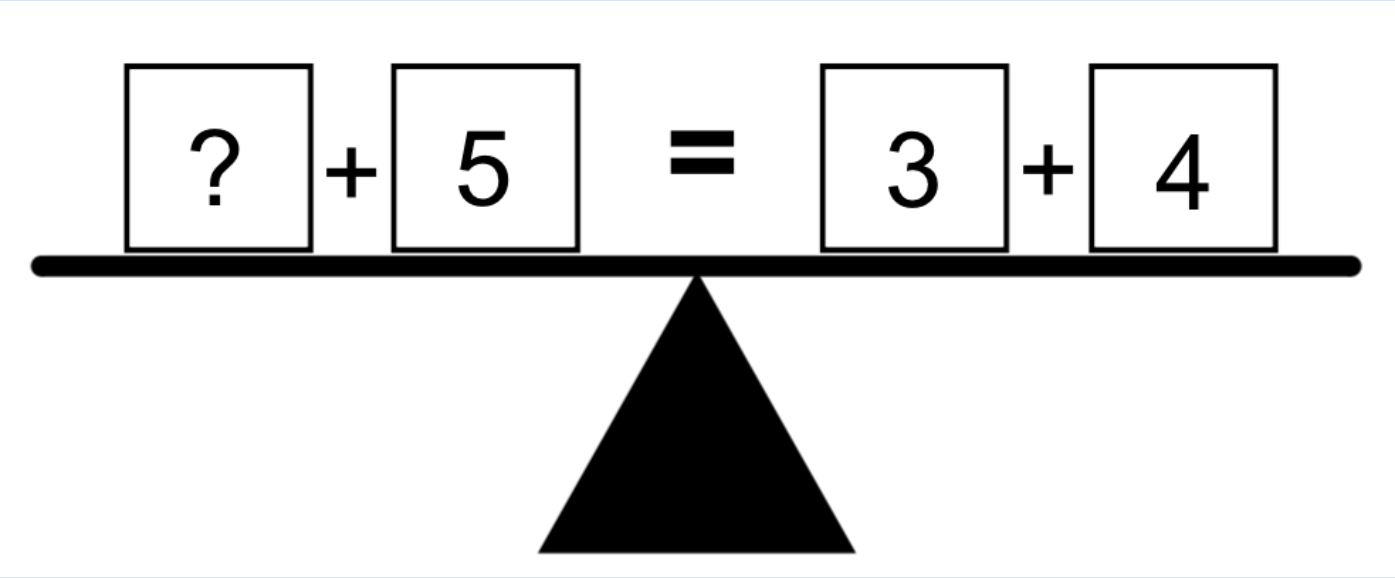
DECIDE & DEFEND



On the right-hand side, we can see that the sum is 7.
This means that the sum must also be 7 on the left-hand side.
The number 2 can be added to 5 to equal 7.
So, the solution is "2"

Day 102

Sam's scale is balanced. Which number did Sam use to balance the scale?



2 5 7

DECIDE & DEFEND

1.OA.D.7
1.R.1

Reflect on Learning

Day 102

DECIDE & DEFEND

- A new math idea I learned today is…

Day 103

ESTIMATION

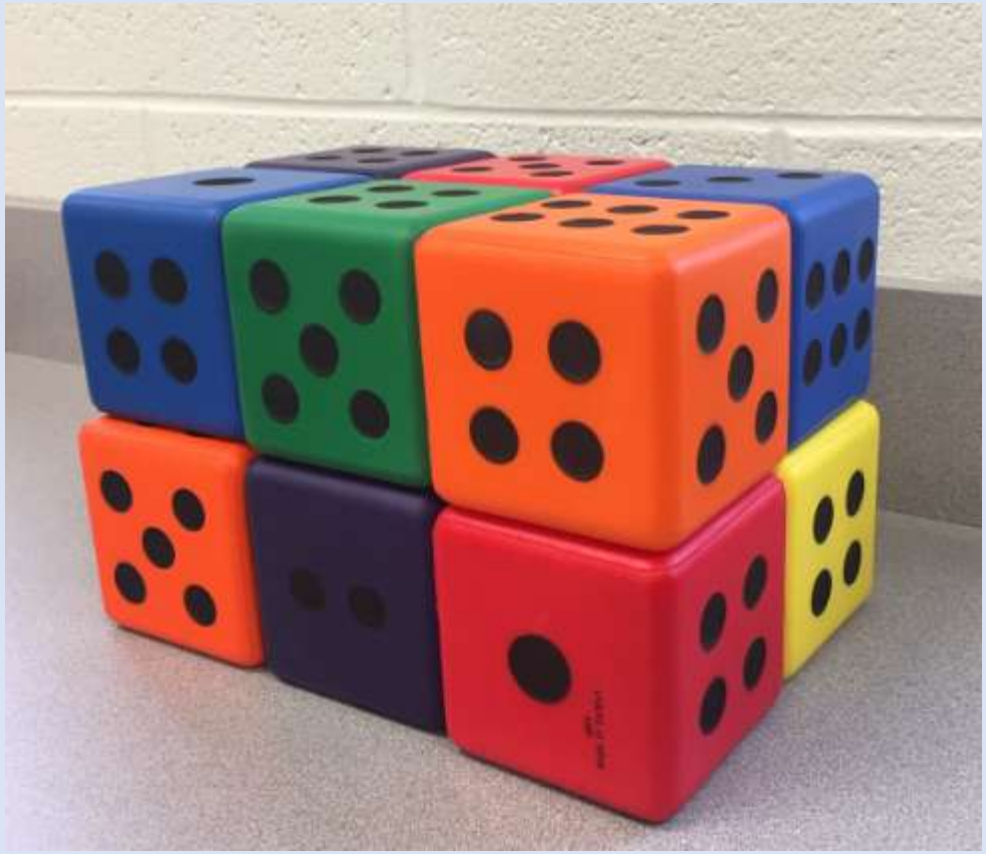
Esti-Mystery

Estimation Activity with clues!

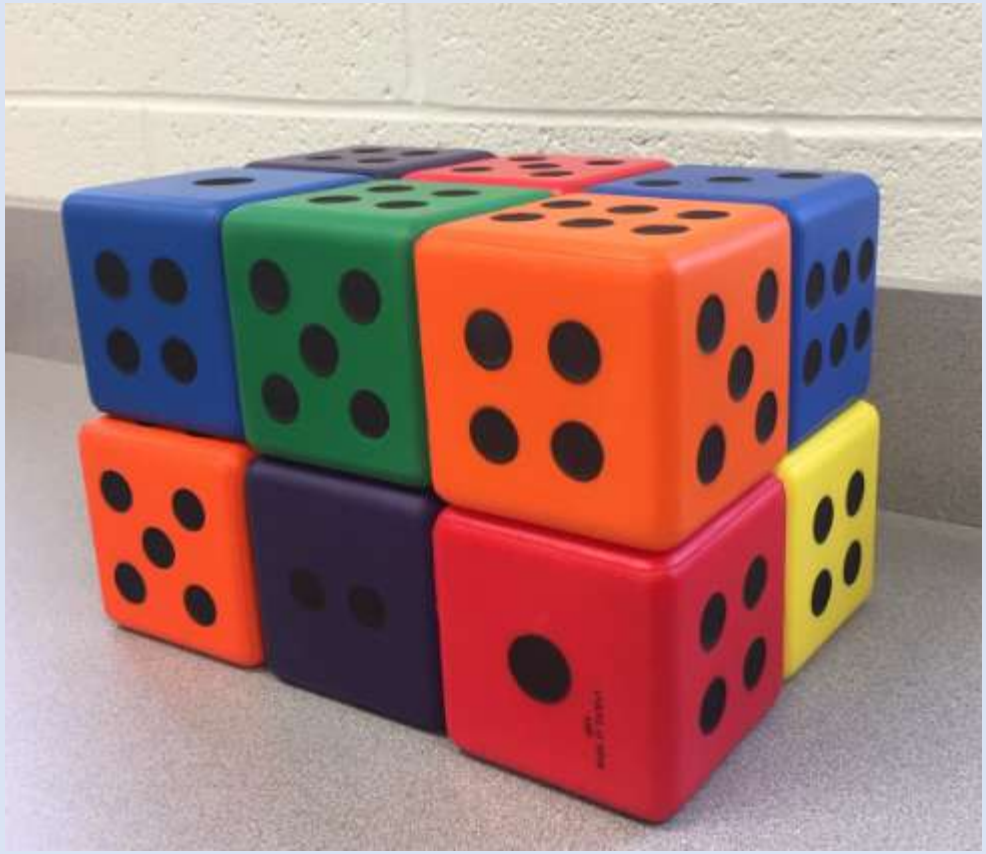
Students use clues to solve the estimation mystery. After all of the clues are revealed, students will have enough information to determine if their initial estimate was correct.

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.

How many dice?



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.



Clue #1

Some of the dice are hidden behind the other dice

Clue #2

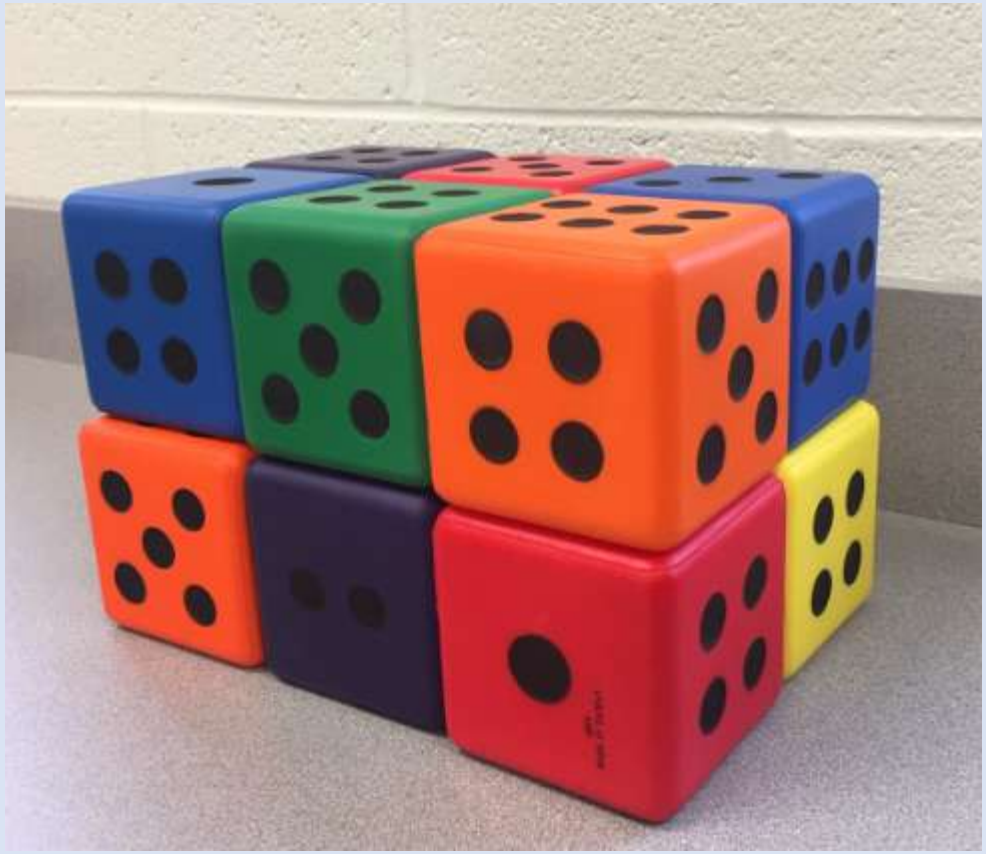
There are more than 10 dice

Clue #3

Two dice are completely hidden in the picture

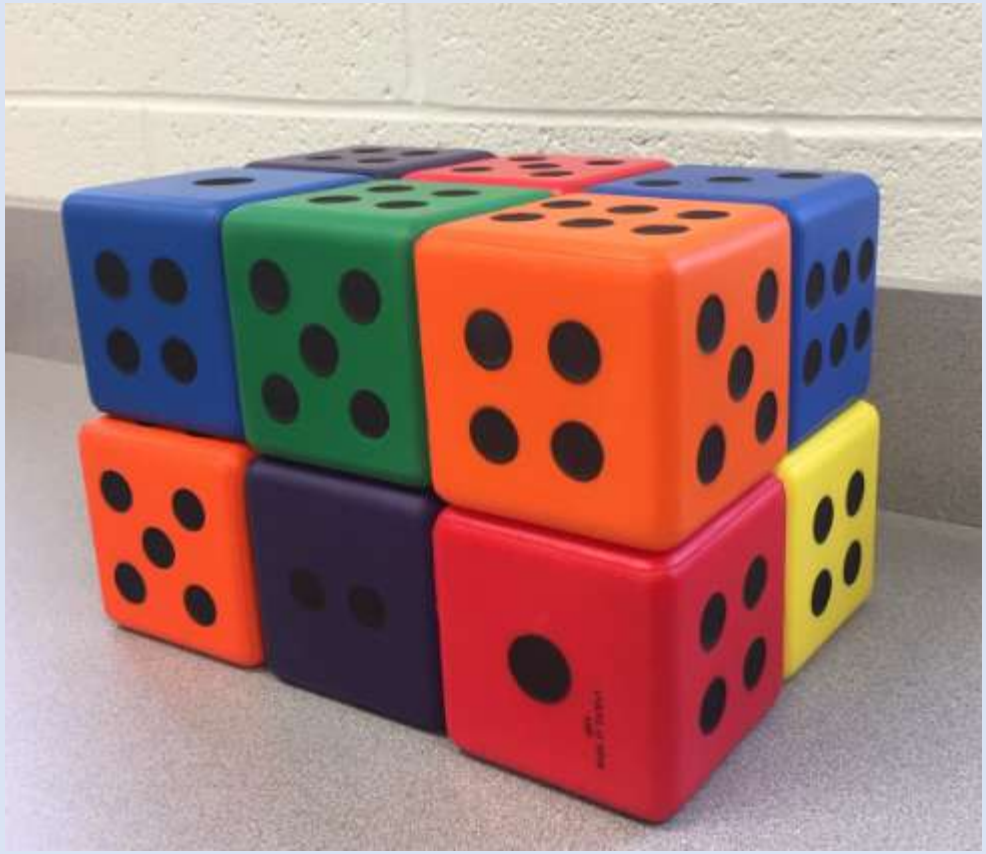
Clue #4

There are two dice of each color



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

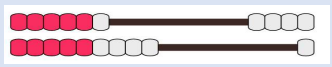
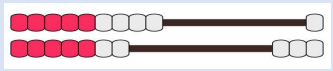
The Reveal
Click to see the answer.



Bonus Challenge

Remember, there are two dice that we cannot see. What color are they?

How do you know?

Day 104

NUMBER TALK

TEACHER NOTES

BEFORE

The next slide has the String of expressions that you will use for today's Number Talk. Use this slide in Smart Notebook format so you can easily use the pen to annotate. Use the screen shade to show just one expression at a time or write each expression on its own slide. The expressions should be presented one-at-a-time with skills typically building on one another. Remember, students will come with a wide variety of strategies. Encourage student sharing of these strategies and work toward determining which of the ways were most efficient and brain-friendly. Students should be guided to do much of the talking during a Number Talk.

DURING

Addition with the Rekenrek (pronounced *rek-n-rek*)

Show each frame one at a time by using the screen shade on your SmartBoard. As each model is shown, ask students,

- How many beads are in play? (in play means moved to the left on the rack)
- How do you see them? (students should describe how the grouped the beads to find the total sum)

Encourage more than one student to explain since there will be slightly different ways that may prove to be equally efficient.
Set A: 7+7=14 (doubles) or 10+4=14 (all red, all white) or 5+5+2+2=14 (red, red, white, white)
Set B: 10+5=15 (all red, all white) or 10+1+4=15 (all red, white top, white bottom) or 6+4+5=15 (move 4 up to make ten, 5 left on bottom)
Set C: 10+6 (all red, all white) or 10+4+2 (all red, white top, white bottom) or 9+1+6 (move 1 up from bottom to make 10, remaining bottom)

Remember, students will come with a variety of strategies. We must help to develop their strategies AND expose them to other strategies if we expect their work with numbers to continue to develop into efficient and effective ways of doing calculations. 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.

Notes:

1. Counting each bead one-by-one is, in fact, a strategy of counting the beads – just not very efficient. If a student uses this method of counting, acknowledge and then ask, "Is there a way that we can count the beads more quickly by grouping them?"
2. Do not allow students to come up to the board. We are trying to build their precise mathematical language and the best way to do that is to have them use precise mathematical language in an effort to get their classmates and teacher to understand their ideas.
3. This activity is not a "flash activity" so do NOT flash the image and cover; rather, it is intended to be visible throughout the discussion for students to discuss the various ways of counting the dots. Remind students that we are working toward efficient methods of counting.

AFTER

After solving the expressions with various strategies, help students to see how using grouping strategies makes adding more efficient.

The Rekenrek (Math Rack)

How Many? How do you see it?

Day 104

NUMBER TALK

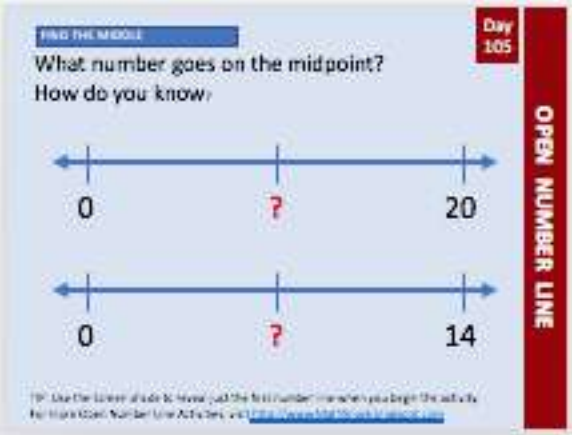
1.OA.C.6

Use the NEXT SLIDES with students.

Teacher Reference Page

Day 105

OPEN NUMBER LINE



Help students to see the relationship to these numbers lines and their doubles facts.
Closely investigate the size of the leap from ZERO to the ? and then from the ? to the endpoint number.
Help students to see that the leap size is equal.
Encourage student-to-student discussion and exploration as they come to recognize the role that "doubles" plays in finding the value of ?

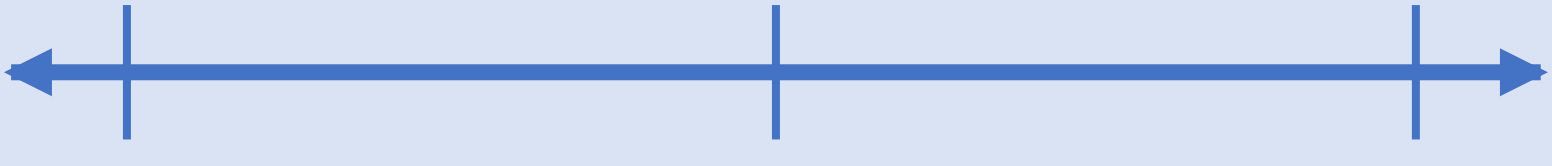
For more Open Number Line Activities, visit http://www.MathSnack.blogspot.com

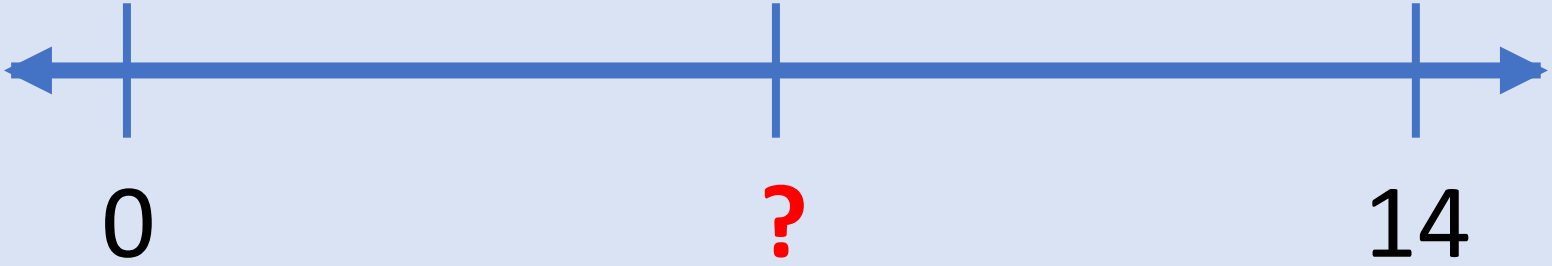
FIND THE MIDDLE

Day 105

What number goes on the midpoint?

How do you know?





TIP: Use the Screen shade in Smart Notebook to reveal just the first number line when you begin the activity.
For more Open Number Line Activities, visit http://www.MathSnack.blogspot.com

OPEN NUMBER LINE

Day 106

Which answer is

As Close as it Gets?

Explain that NONE of the answers shown are the exact solution.

- Students should use **mathematical reasoning** to select the answer that is **closest** to the actual answer. **Discourage complex calculations, encourage estimation and reasoning.**
- Students are expected to **explain the reasoning they used** to select the answer that they think is closest to the actual answer.

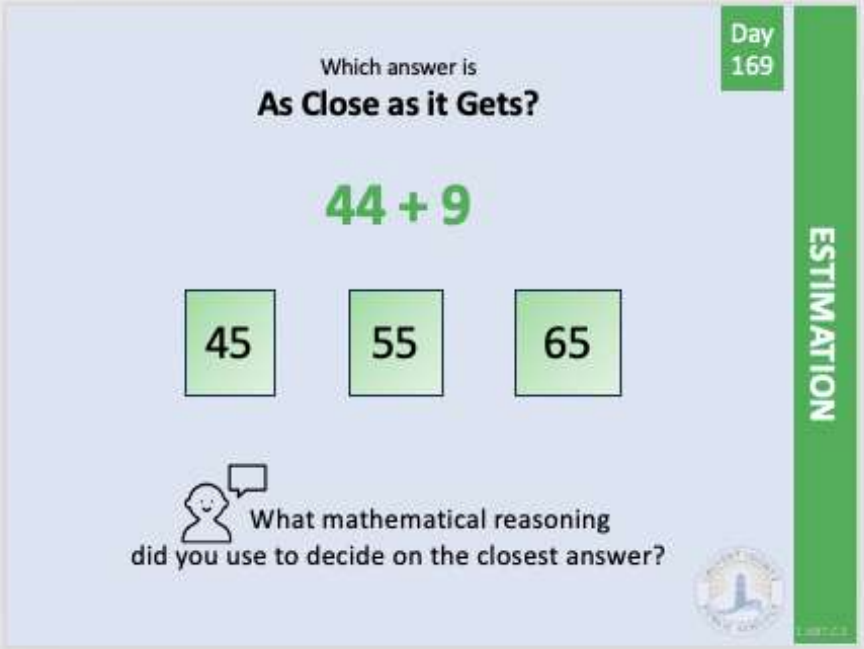
ESTIMATION

Use the NEXT SLIDES with students.

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

Day 106

ESTIMATION



55
9 is close to 10
44+10 = 54, so 55 is just 1 away from 54

Day 106

ESTIMATION

Which answer is

As Close as it Gets?

44 + 9

45	55	65

What mathematical reasoning did you use to decide on the closest answer?

1.NBT.C.5

Directions for QUICK COUNT routines

Intro

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. After 3-5 seconds, advance the slide to hide the image.**
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"

QUICK COUNT

Use the NEXT SLIDES with students.

Teacher Reference Page

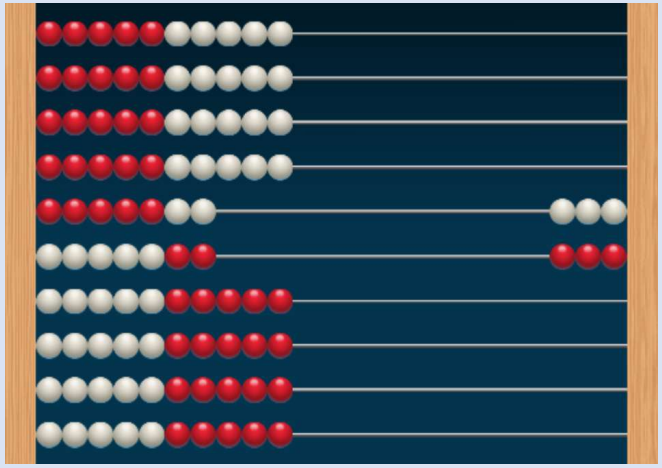
Day 107

QUICK COUNT

- This tool is called a Rekenrek [rek-n-rek] or Math Rack.
- This Rekenre has 100 beads (10 rows of 10)
- Notice that after the first 50 beads, the order of the beads reverse colors to make counting larger numbers more efficient
- Beads that are pushed to the left are referred to as “in play”
- Beads that are pushed to the right are referred to as “at rest”
- The image below has 94 beads “in play”
- The primary goal of this Quick Count routine is for students to explore a variety of efficient ways to count the beads that are in play.
- Remember, students will first just look at the image for a few seconds and talk with a partner about what they noticed.

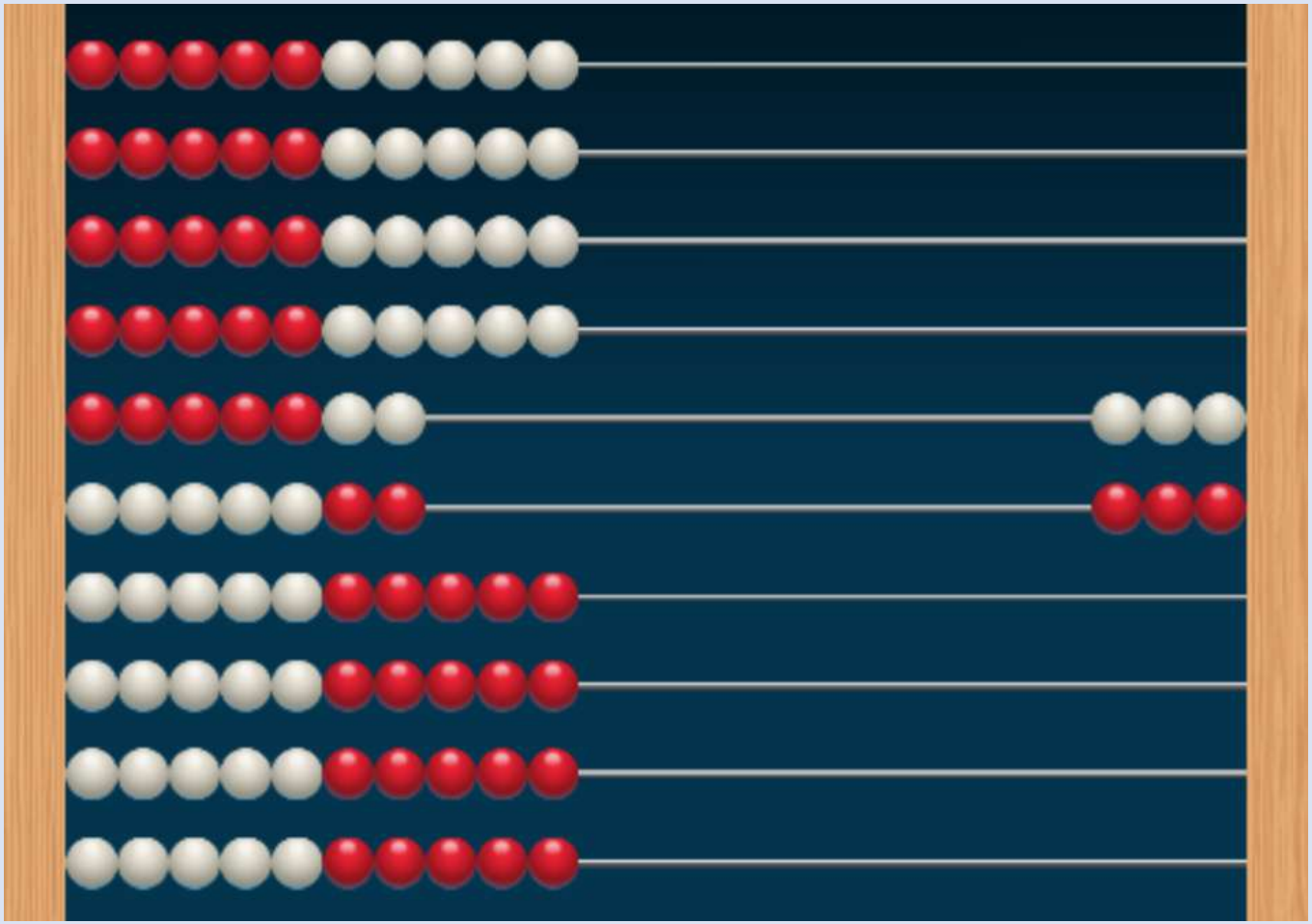
Here are a few examples:

- Start at 100 and count back 6
- Count each complete row by 10s then add on the incomplete rows
- Count each complete row by 10s then join the 5 red and 5 white of the incomplete rows to make a ten then add the 2 and 2 extra beads



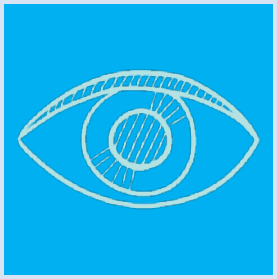
Day 107

What do you NOTICE?



QUICK COUNT

1.NBT.C.6



Day 107

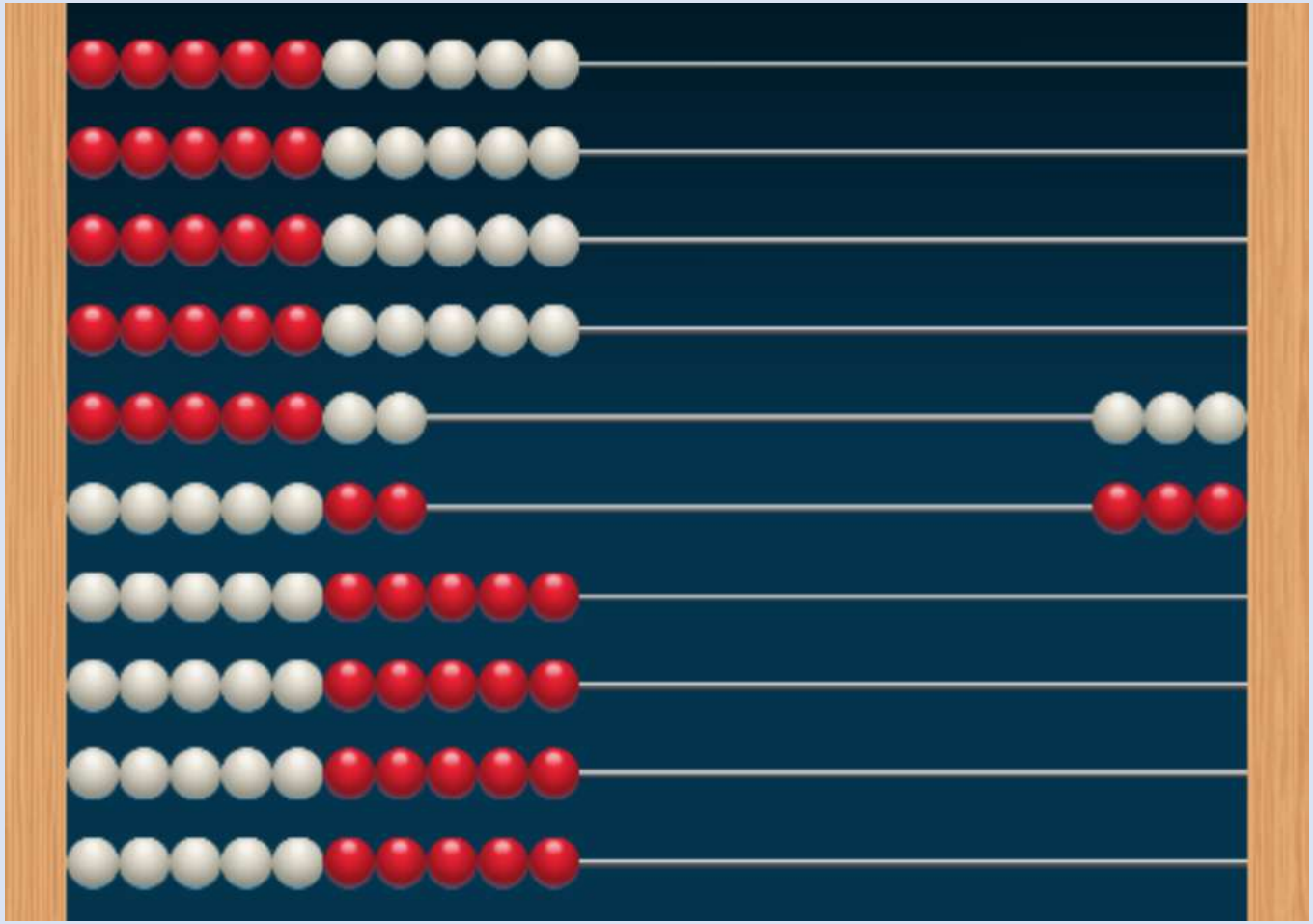
QUICK COUNT

What did you NOTICE?

Day 107

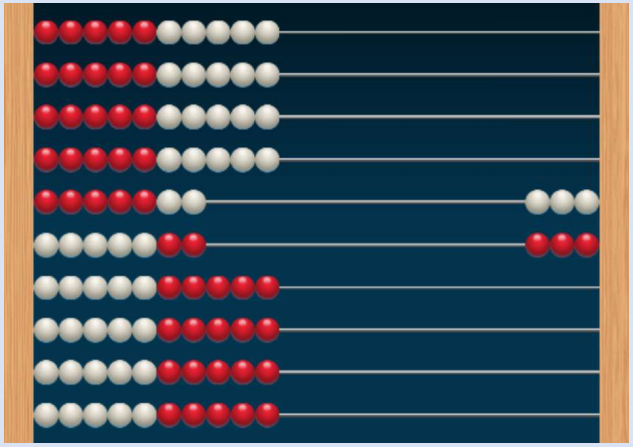
QUICK COUNT

How many beads are “in play”?
What counting shortcut did you use?



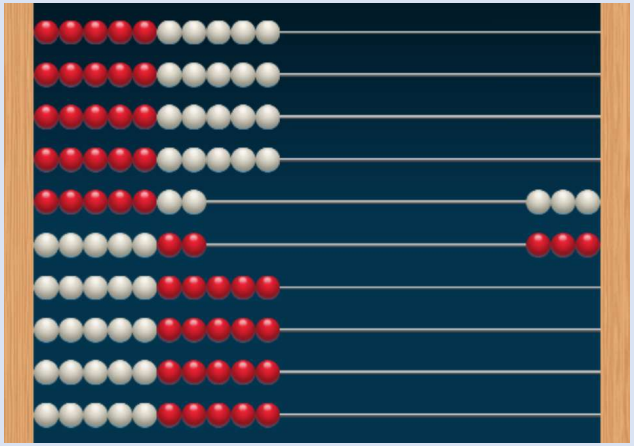
Day 107

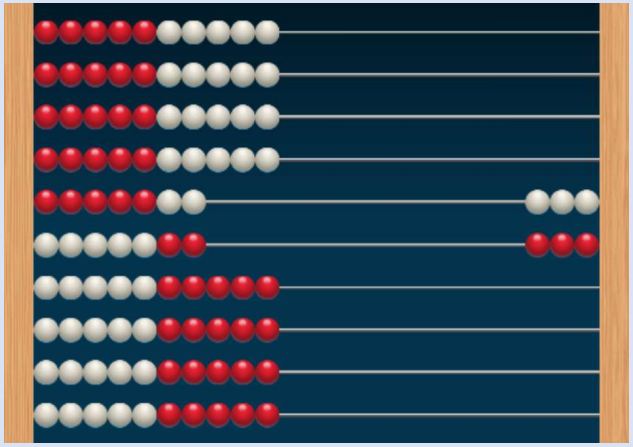
QUICK COUNT



(They) noticed ____ so they _____

I noticed ____ so I _____





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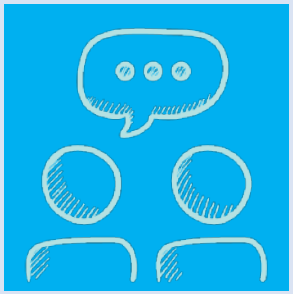

Day 107

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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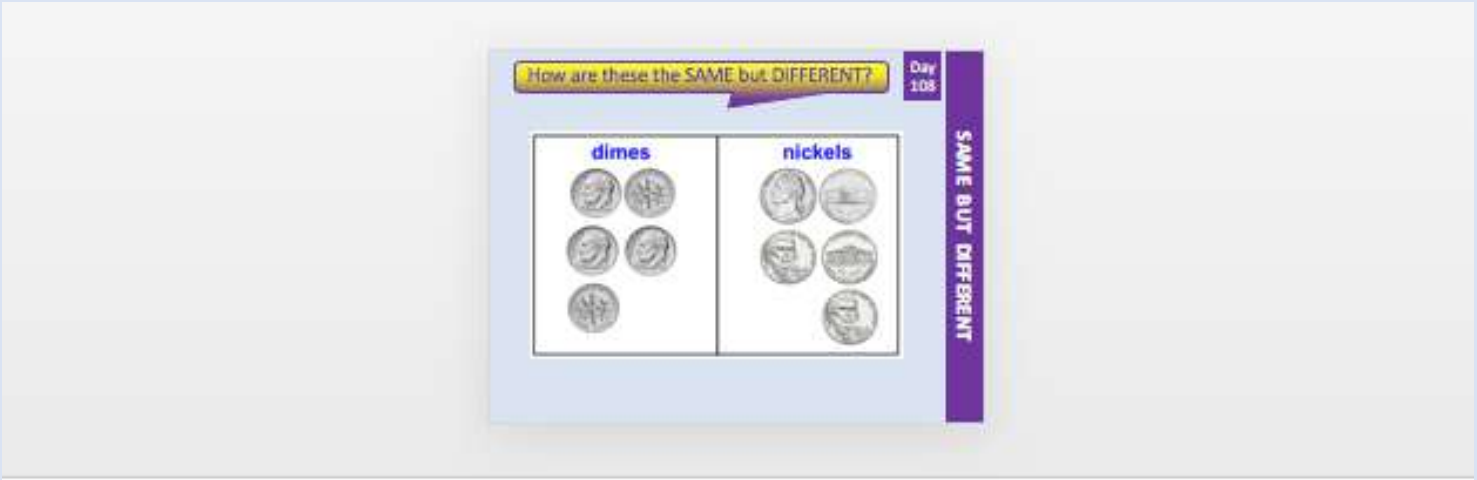
Use the NEXT SLIDE with students.

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

Day 108

- 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 have 5 coins but one has 5 dimes and the other has 5 nickels
- Both have 5 coins but they are not worth the same amount. One is 50 cents and the other is 25 cents.
- Both are silver-colored but they are not the same size
- Both have a head on the front but they do not both have a building on the back of the coin (the dime has a torch, olive branch, and oak branch on the back. The nickel has Thomas Jefferson’s home Monticello located in Virginia on the back)

SAME BUT DIFFERENT

How are these the SAME but DIFFERENT?

Day 108

SAME BUT DIFFERENT

dimes	nickels
	

11

Day 109

How many blue shapes do you see? How did you count them?

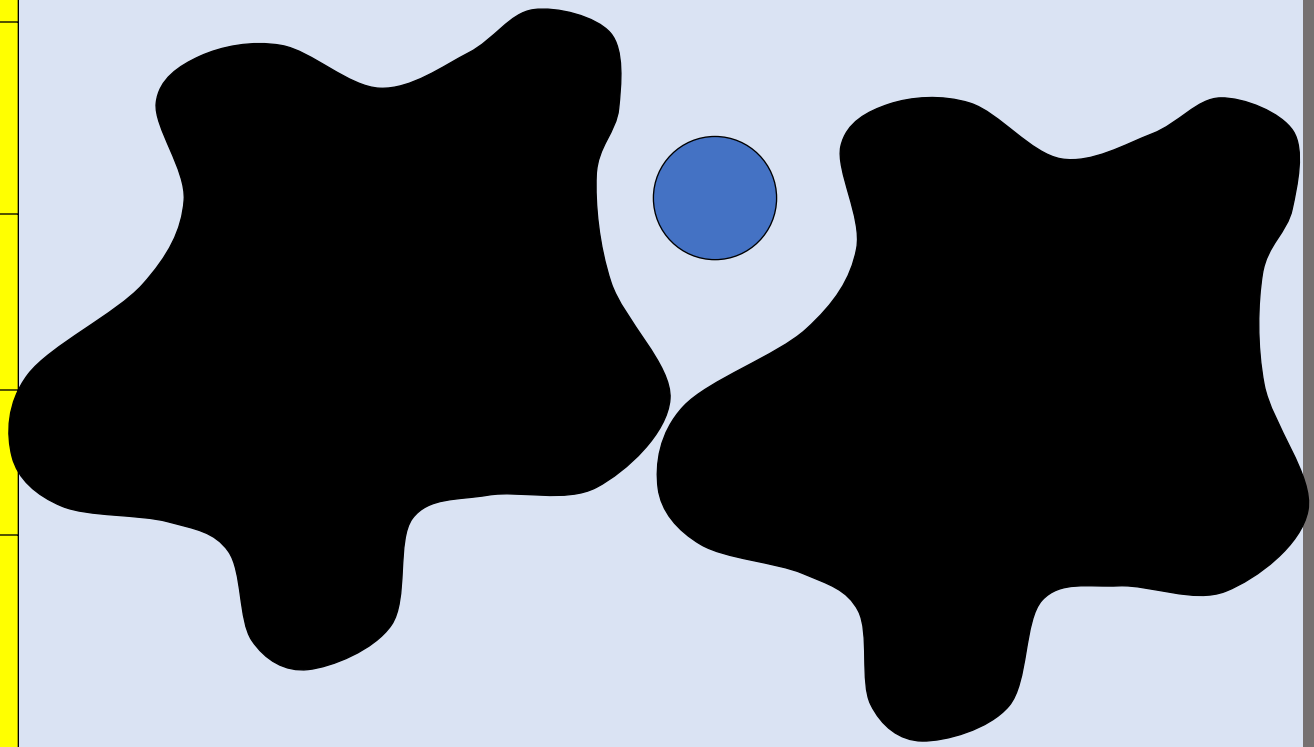
Splat!

How many shapes are under each splat? How do you know?

How else could you know?

Let's look under the splat to see

What can we learn from this picture?



SPLAT!

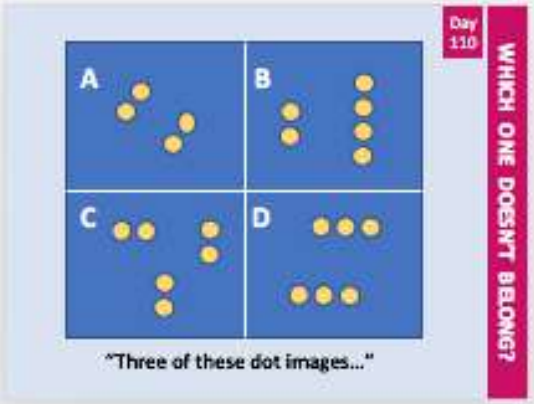
1.OA.C.6
1.OA.C.5

Use the NEXT SLIDE with students.

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

Day 110

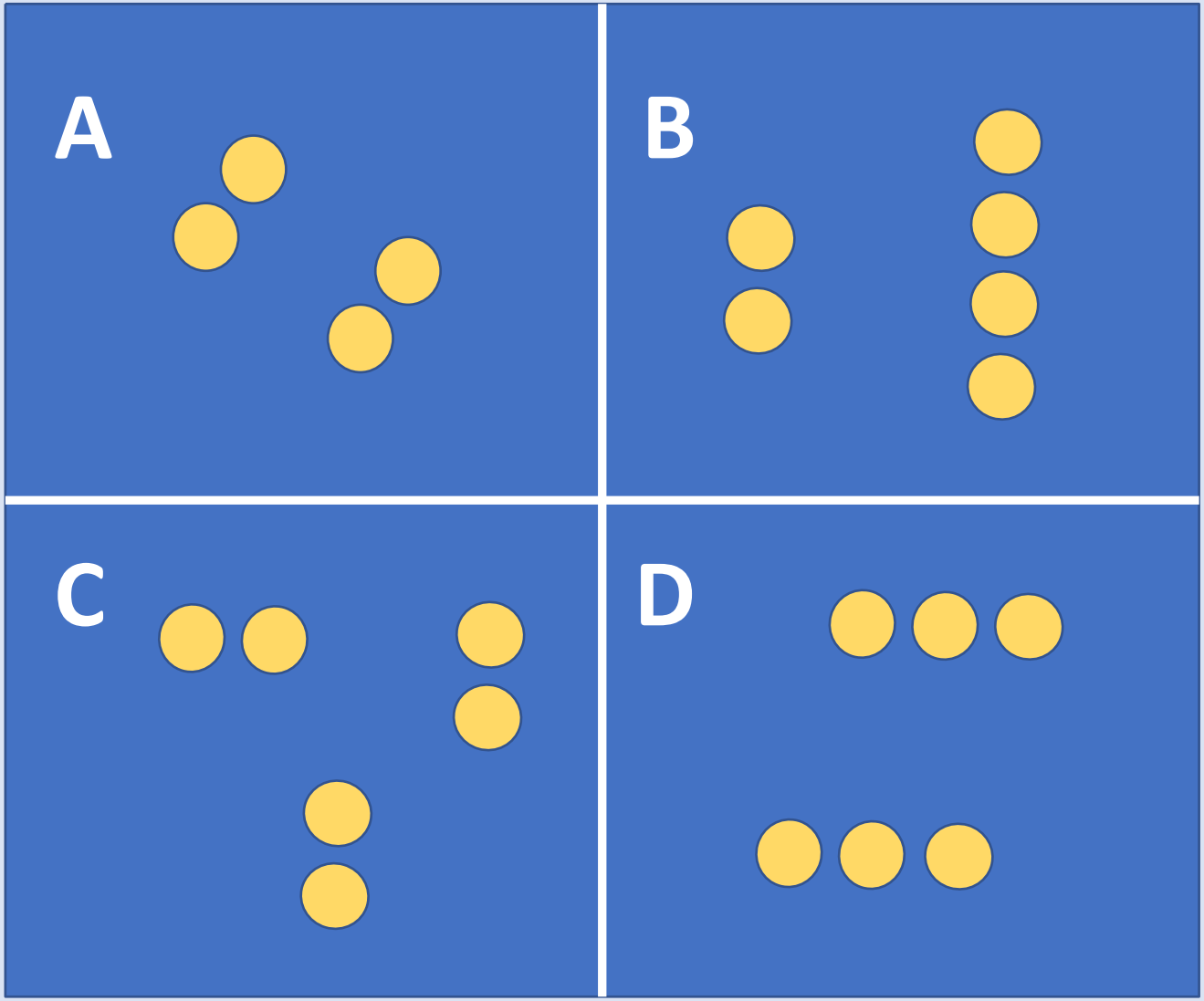
WHICH ONE DOESN'T BELONG?



Possible Responses:
A Three of the dot images have 6 dots. Image A does not have 6 dots.
B Three of the dot images have groups that all have equal amounts. Image B has two groups that are not equal.
C Three of the dot images have 2 groups of dots. Image C has 3 groups of dots.
D Three of the dot images have a group of 2. Image D does not have any groups of 2 dots.

Day 110

WHICH ONE DOESN'T BELONG?



"Three of these dot images…"

1.MD.C.4
1.R.1

Day 111

Counting Back

- Tell students that today we are going to count back – we are going to start at a greater value and count down. Point to the number line and offer students an example: If we start at 32, the next number we say would be 31, then 30, then 29….
- Encourage students to look at the number line or 100s chart if they need support with counting. Some students benefit from a hand-held number line/chart to reduce the far-point processing needed when the number line is far away from the person viewing it.
- Let's begin on 34
- 34, 33, 32, 31, 30, 29, …. 3, 2, 1, 0

- Option to consider: Write the numbers down as students count – this allows you to control the pacing and, more importantly, creates a visual allowing you to discuss the patterns noted after you finish counting

NOTE: If students struggle, encourage them to look at the number line – this may be especially important as the numbers transition to the lower decade, 50 to 49, for example.

CHORAL COUNTING

1.NBT.A.1

Day 112

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.

ESTIMATION

How many bears?

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.

Steve Wyborney

Clue #1

There are more than 10 bears

Clue #2

The number of yellow bears and number of red bears are equal

Clue #3

There is one blue bear less than the number of yellow bears

Clue #4

There are 5 red bears

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 SLIDES with students.

Teacher Reference Page

Day 113

OPEN NUMBER LINE

- Reveal just the first number line as you begin the activity.
- Show students the number line. Give some "think time" for them simply to notice things about the number line
- Point out the two blank boxes. Tell students that the boxes are each exactly the same distance away from 50.
- Point to the empty box on the left of 50.
- Ask, "What do we know for sure about the number in this box?" [It is less than 50]
- Point to the empty box on the right of 50.
- Ask, "What do we know for sure about the number in this box?" [it is greater than 50]
- What number could go in this box? (point to the box on the left)
- Write one of the suggested numbers. (NOTE: It can be ANY number less than 50)
- How big is this jump from (new number) to 50? [write calculated value]
- What does that mean must be true about this jump [use motions to indicate the jump from 50 to the blank box on the right]
- If the intervals (jumps) are the same, what number goes in this box?
- Repeat the process for the next number line with 35 as the midpoint.

Possible Ideas:

- 49 50 51
- 40 50 60
- 0 50 100
- 48 50 52

NOTE: **This is a powerful activity to do with string and number tents on an actual number line.**

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

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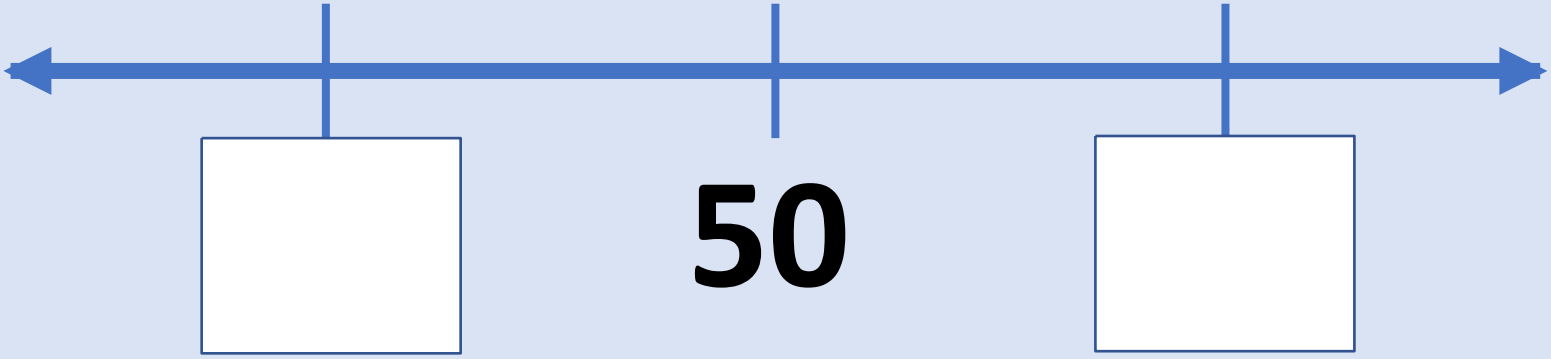
Use the screen shade to reveal just the top number line.

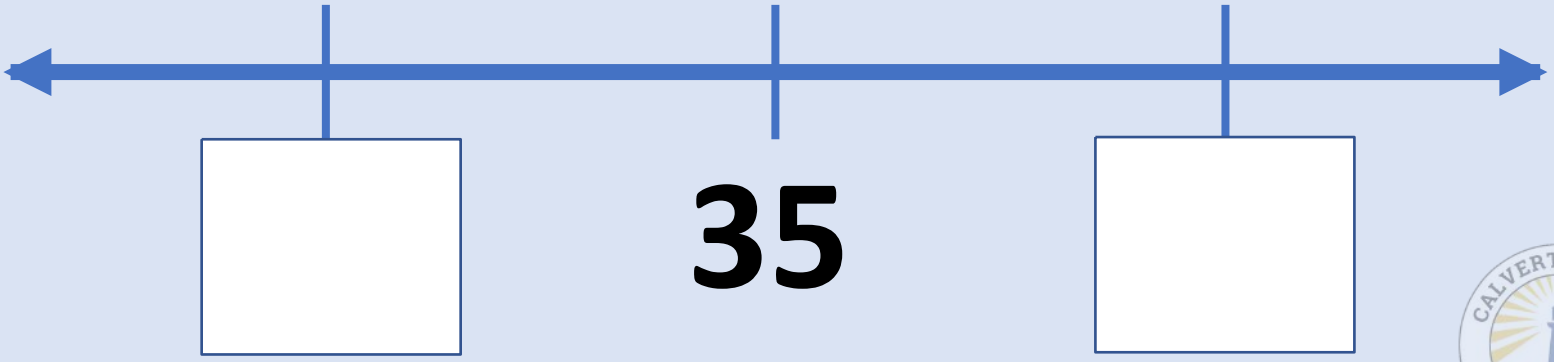
Day 113

50 is the midpoint on this number line.

What numbers could be the endpoints?

How do you know?





OPEN NUMBER LINE

1.NBT.A.1

Day 114

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.

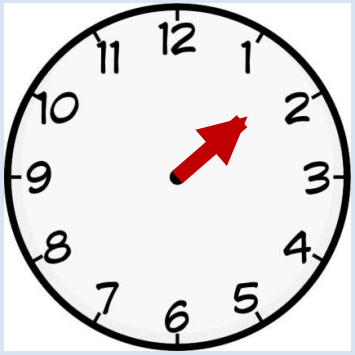
NOTE: This is the CCPS adaptation of the original Decide and Defend protocol

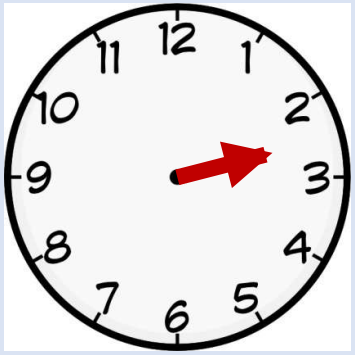
DECIDE & DEFEND

Day 114

Use the NEXT SLIDES with students.

Teacher Reference Page





Teaching children to tell time using 1-handed clocks has been shown to be incredibly powerful.

The goal is to help children to recognize that if the hour hand has not YET reached the next number on the clock, then it is not YET that hour.

For example, when the hand is anywhere on the 1 but has not yet reached the 2, the time is always 1:xx (1-something).

And, further, if the hand is ½-way between the 1 and 2, we know that the minute hand has also traveled ½-way around the clock which means it is past 1:30 but NOT yet 2:00.

Using 1-handed clocks to begin instruction of reading a clock will be transformative for student understanding of telling time – try it!

DECIDE & DEFEND

2:30

Day 114

Use Numbered Heads

READ to Understand

Decide

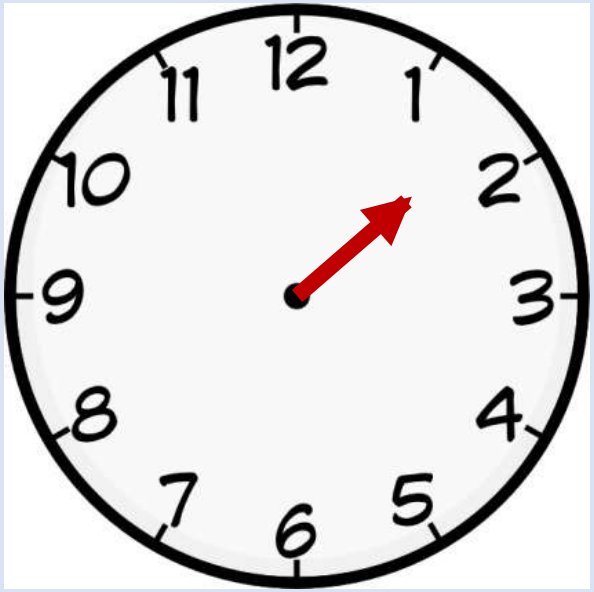
Draft

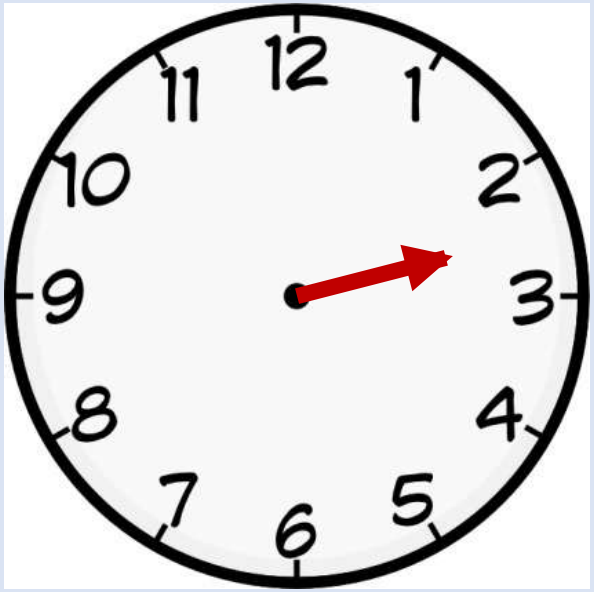
Defend

Reflect

Oh no!

The minute hand has broken off of these clocks.
Which clock below could say 2:30?
How do you know?





DECIDE & DEFEND

1.MD.B.3

Reflect on Learning

Day 114

DECIDE & DEFEND

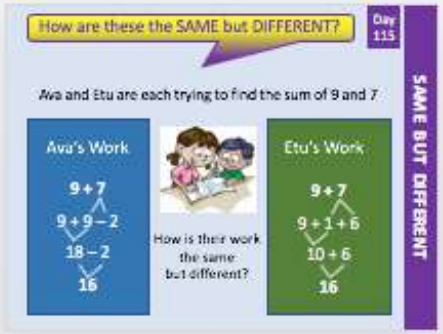
- A new math idea I learned today is…

Use the NEXT SLIDE with students.

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

Day 115

SAME BUT DIFFERENT



Since Ava knew that 9+9 was 18, a fact she memorized, she decomposed 7 into 9-2 so she could use the **DOUBLE** fact 9+9. It is not often that students decompose using subtraction, but it can be an excellent strategy. Showing students this uncommon way of decomposing may open their thinking to new ideas that can be applied in other situations.

Etu decomposed 7, as well, but he decomposed it into 1+6 so he could use the 1 to **MAKE A TEN** with the 9.

SAME:

- Started with same expression 9+7
- Ended with the same sum 16
- Decomposed 7 to make solving more efficient

DIFFERENT

- Ava used DOUBLES strategy; Etu used MAKE A TEN strategy
- Ava used some subtraction within her strategy. Etu only used addition strategies.

And, in case you were wondering, Etu is a traditional Native American name given to boys; it means "son"

How are these the SAME but DIFFERENT?

Day 115

Ava and Etu are each trying to find the sum of 9 and 7

Ava's Work

9 + 7

9 + 9 – 2

18 – 2

16

How is their work the same but different?

Etu's Work

9 + 7

9 + 1 + 6

10 + 6

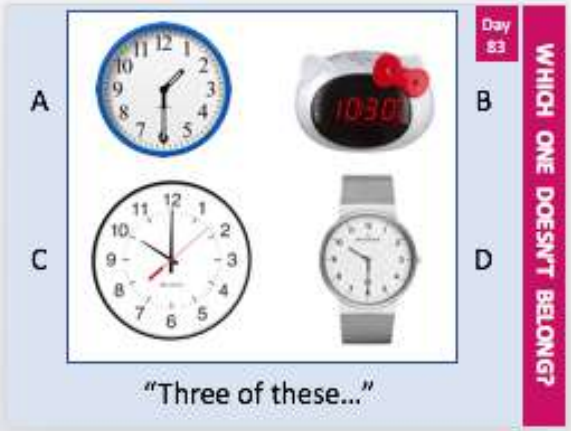
16

SAME BUT DIFFERENT

Day 116

Use the NEXT SLIDE with students.

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



Possible Responses:

A – Three of these have a time that is in the 10 o'clock hour. Clock A is in the 1 o'clock hour

B – Three of these are analog times. Clock B is in digital time

C – Three of these tell the time to the HALF hour. Clock C is telling time to the hour.

D – Three of these are clocks. D is a watch.

WHICH ONE DOESN'T BELONG?

Day 116

WHICH ONE DOESN'T BELONG?

A

B

C

D

"Three of these…"

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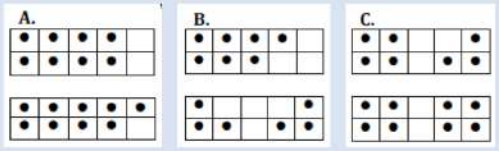
1.MD.B.3



TEACHER NOTES

Day 117

NUMBER TALK

BEFORE

The next slide has the String of expressions that you will use for today's Number Talk. Use this slide in Smart Notebook format so you can easily use the pen to annotate. Use the screen shade to show just one expression at a time or write each expression on its own slide. The expressions should be presented one-at-a-time with skills typically building on one another. Remember, students will come with a wide variety of strategies. Encourage student sharing of these strategies and work toward determining which of the ways were most efficient and brain-friendly. Students should be guided to do much of the talking during a Number Talk.

DURING

Doubles and Near-Doubles Addition/Subtraction with Ten-Frames

Show each frame one at a time by using the screen shade on your SmartBoard. As each problem is shown, ask students,

- How many dots do you see?
- How do you see them?

Encourage more than one student to explain since there will be slightly different ways that may prove to be equally efficient.

Set A $8 + 8 + 1 = 16 + 1 = 17$ (the student saw the double eights and then added the extra one)

Set B $6 + 6 + 1 = 12 + 1 = 13$ (the students may also have seen $7 + 7 - 1$)

Set C $8 + 8 - 1 = 16 - 1 = 15$ (the students saw the double eights and then subtracted one)

Remember, students will come with a variety of strategies. We must help to develop their strategies AND expose them to other strategies if we expect their work with numbers to continue to develop into efficient and effective ways of doing calcualtions. 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.

Notes:

1. Counting each dot one-by-one is, in fact, a strategy of counting the dots – just not very efficient. If a student uses this method of counting, acknowledge and then ask, "Is there a way that we can count the dots more quickly by grouping them?"
2. Do not allow students to come up to the board. We are trying to build their precise mathematical language and the best way to do that is to have them use precise mathematical language in an effort to get their classmates and teacher to understand their ideas.
3. This activity is not a "flash activity" so do NOT flash the image and cover; rather, it is intended to be visible throughout the discussion for students to discuss the various ways of counting the dots. Remind students that we are working toward efficient methods of counting.

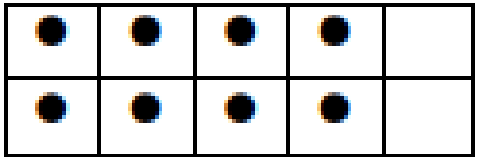
AFTER

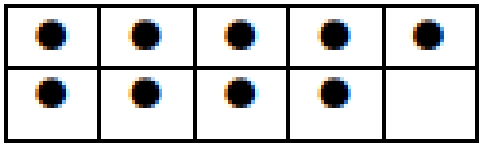
After solving the expressions with various strategies, help students to see how using grouping strategies makes adding more efficient.

Day
117

NUMBER TALK

A.





40¢

Day 118

How many nickels d

What is the value of one nickel?

What is the total value of all eight nickels?

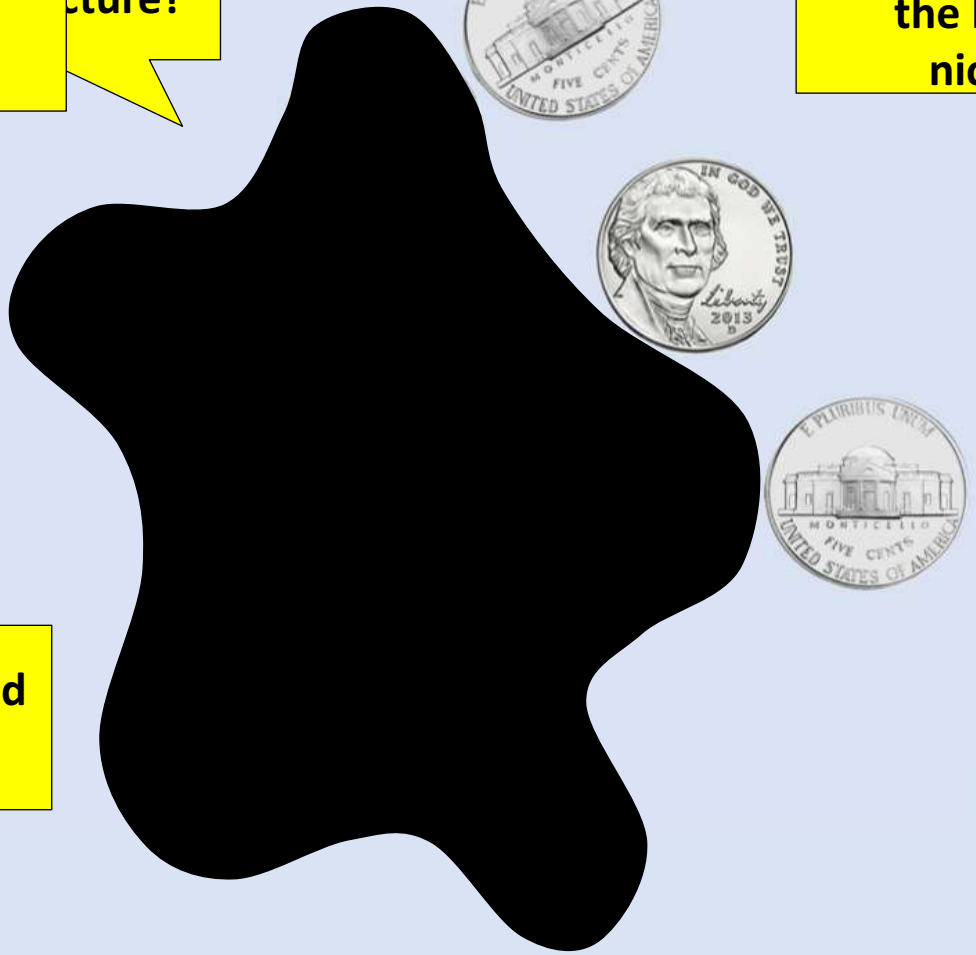
e learn cture?

Splat!

How many nickels are under the splat?

How do you know?

How else could you know?



Let's look under the splat to see the hidden nickels.

SPLAT!

Count on 10

Day 119

CHORAL COUNTING

- Let's play a counting game called "Count on 10"
- I will say a number and then we will count by saying the number that is 10 more than the previous number (37, 47, 57…) until we say a number that is over 100.
- When we say a number that is over 100, we will start over beginning with a new number.

- Chart the numbers as students count then have a discussion about the patterns that students see when skip counting by 10s.
- Use the 100s chart if needed for visual support.

37, 47, 57, 67, 77, 87, 97, 107
68, 78, 88, 98, 108
53, 63, 73, 83, 93, 103
14, 24, 34, 44, 54, 64, 74, 84, 94, 104

Patterns noticed may include that the ones place value stays the same until you change the starting number or that the tens place increases by one ten each time in all of the counting patterns shown.

Count on 10

Day 119

37	____	____	____	____	____	____	107
		68	____	____	____		108
		53	____	____	____	____	103
23	____	____	____	____	____	____	103

CHORAL COUNTING

1.NBT.C.5

Day 120

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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- **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

Use Numbered Heads

READ to Understand

Decide

Draft

Defend

Reflect

Day 120

Which set of coins has a greater value?

5 dimes		7 nickels
	or	

DECIDE & DEFEND

CALVERT COUNTY PUBLIC SCHOOLS

1.OA.A.2
1.R.1

Reflect on Learning

Day 120

- A new math idea I learned today is…

DECIDE & DEFEND