180 Days of
Number Sense Routines
Grade 3
Days 21-40

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.

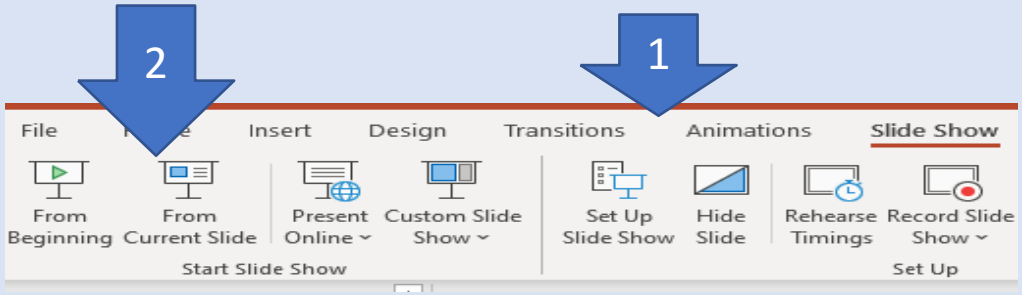
WHAT ARE THE CCPS IMPLEMENTATION EXPECTATIONS? Number sense routines have been developed for all 180 instructional days in grades Prekindergarten through Grade 5. These routines are to be used every day, including early dismissal, late arrival, and field trip days. Because the routines do not require 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

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 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

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 21

3 Less

BEGIN WITH NUMBER: 109 (say “one hundred nine”, not “one-oh-nine”)

COUNTING RULE: Subtract 3

CHART: As students say the numbers, chart them as shown below:

109	106	103	100	97	94	91	88	85	82
79	76	73	70	67	64	61	58	55	52
49	46	43	40	37	34	31	28	25	22

ASK: What patterns do you notice when we charted the numbers?

- odd, even, odd, even, odd, even
- columns have the same value in the ones place
- each number in each column is 30 less than the number above it

CHORAL COUNTING

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Count back by 3s – starting on 109

Day 21

BEGIN WITH NUMBER: 109
COUNTING RULE: Subtract 3
GOAL:

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

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109 ____ ____ ____ ____ ____ ____ ____ ____ ____

____ ____ ____ ____ ____ ____ ____ ____ ____ ____

____ ____ ____ ____ ____ ____ ____ ____ ____ ____

CHORAL COUNTING

3.NBT.A.2

Day 22

DECIDE & DEFEND

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.

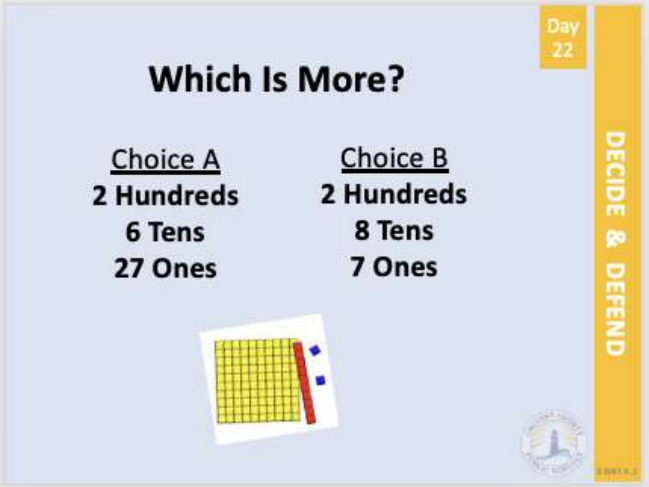
- **RELECT**: To further develop comprehension, have students use ONE of the sentence starters on the "Reflect on Learning" slide after they have discussed and listened to new ideas with classmates.

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

Day 22

Use the NEXT SLIDE with students.

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



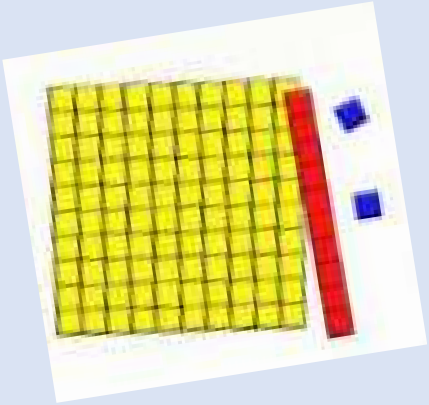
- They are equal. Both options represent 287
- Help students to decompose 27 into Tens and Ones.
- Students should recognize that 27 Ones is equivalent to 2 Tens and 7 Ones.
- Choice A: 200 + 60 + 27 Choice B: 200 + 80 + 7

DECIDE & DEFEND

Day 22

Which Is More?

Choice A	Choice B
2 Hundreds	2 Hundreds
6 Tens	8 Tens
27 Ones	7 Ones



DECIDE & DEFEND

Day 22

Reflect on Learning

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

DECIDE & DEFEND

Day 23

ESTIMATION

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.

Possible Reasoning: *100 + 100 = 200 and 40 + 60 = 100, so the sum will be a little bit more than 300*

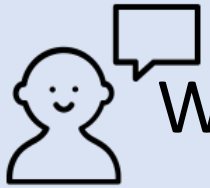
Day 23

Which answer is

As Close as it Gets?

146 + 165

210	290	310



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

ESTIMATION

3.NBT.A.2

Day 24

NUMBER TALK

48 + 6
48 + 17
23 + 48
48 + 47

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.

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DURING

Making Landmark or Friendly Numbers:

The following Number Talks encourage students to make a quick ten by decomposing at least one of the numbers.

Example: 48 + 47
48 + 2 + 45
50 + 45
95
so 48 + 47 = 95 conclude by relating the work 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.

Day 24

48 + 6

NUMBER TALK

3.NBT.A.2

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 an interactive number line.
https://www.youtube.com/watch?v=p8nssffnHkM&feature=youtu.be

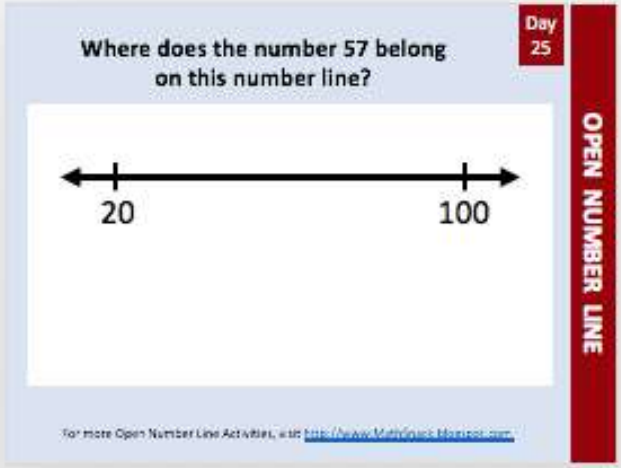
Teacher Note: You may want to create an interactive number line in your classroom for some of the Open Number Line routines. The slides provided can be used as teacher reference or used interactively if this file is "printed" as a Smart Notebook file.

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

Day 25

Use the NEXT SLIDE with students.

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



Possible reasoning:
The spread between 20 and 100 is 80. Half of 80 is 40, so the midpoint of this number line is 60 (20+40 or 100-40). Since the midpoint is 60, the number 57 must be a little bit to the left of the midpoint since 57 is slightly less than 60.

OPEN NUMBER LINE

Day 25

Where should the number 57 be placed on this number line? *How do you know?*

OPEN NUMBER LINE

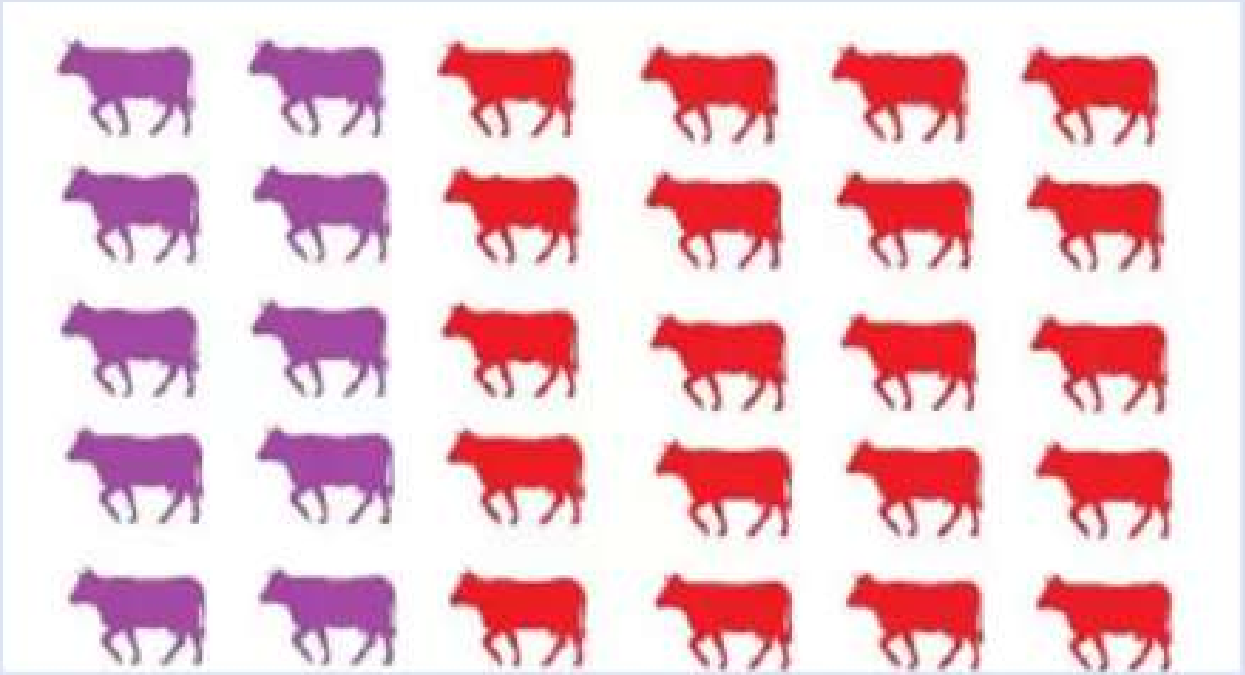
Directions for QUICK COUNT routines

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 3 different student-generated shortcut strategies.
10. End by asking students to explain what was "mathematically important"

Day 26

QUICK COUNT



What do you NOTICE?

3.OA.A.1

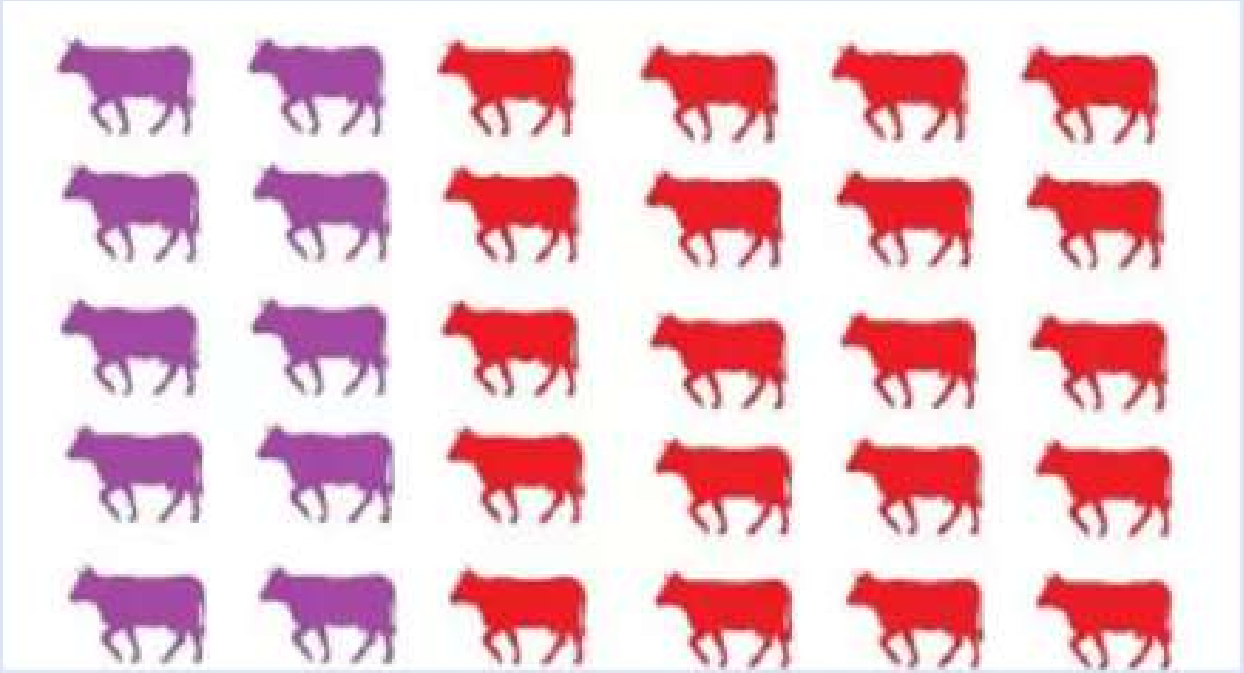
Day 26

QUICK COUNT

What did you NOTICE?

Day 26

QUICK COUNT



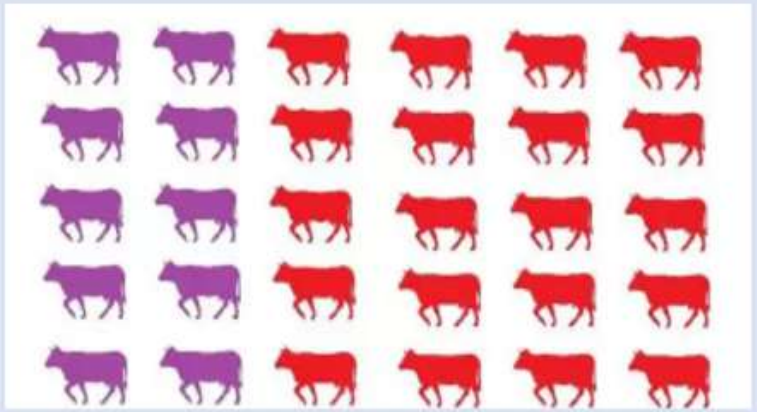
How many do you see?

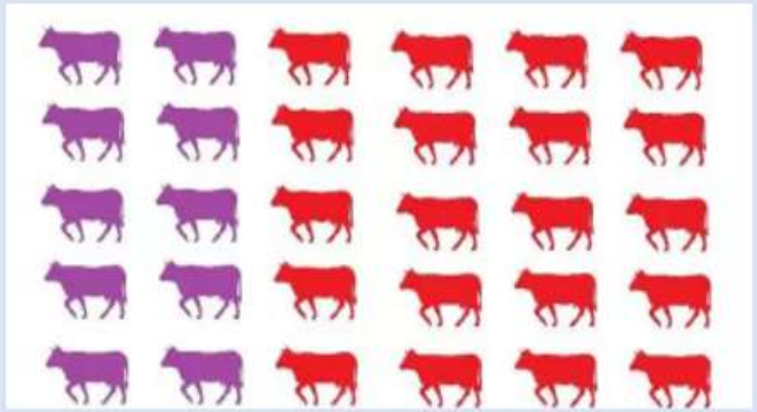
What counting shortcut did you use?

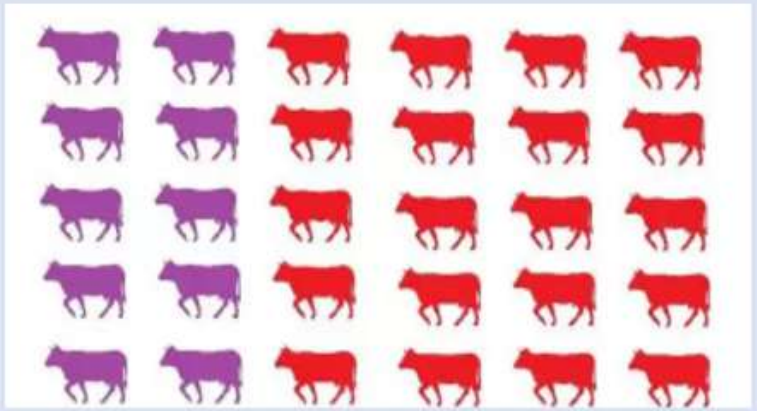
I noticed ____ so I _____

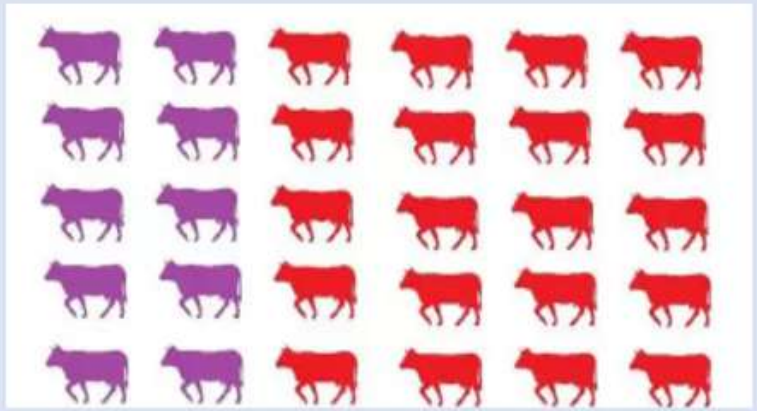
(They) noticed ____ so they___

Day 26









QUICK COUNT

Day 26

Reflect

What was mathematically important?

QUICK COUNT

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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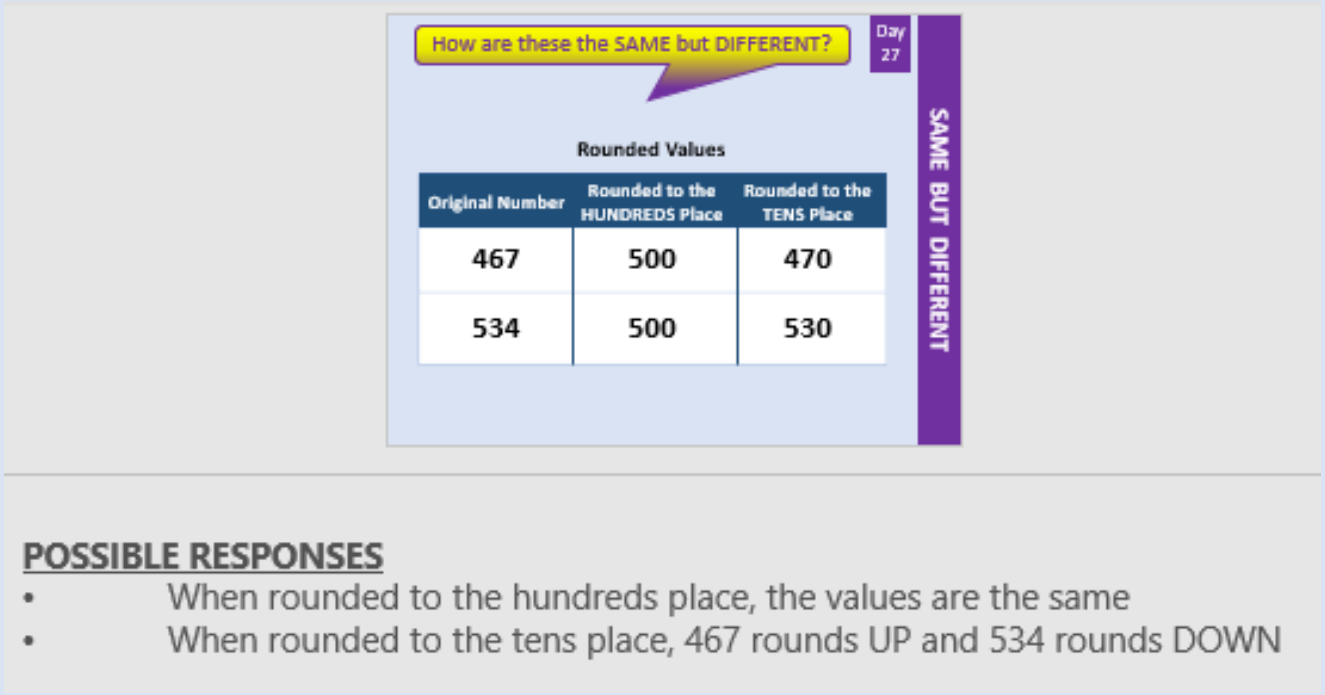
Use the NEXT SLIDE with students.

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

Day 27

SAME BUT DIFFERENT

- 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….”



How are these the SAME but DIFFERENT?

Day 27

SAME BUT DIFFERENT

Rounded Values

Original Number	Rounded to the HUNDREDS Place	Rounded to the TENS Place
467	500	470
534	500	530

How many blue shapes do you

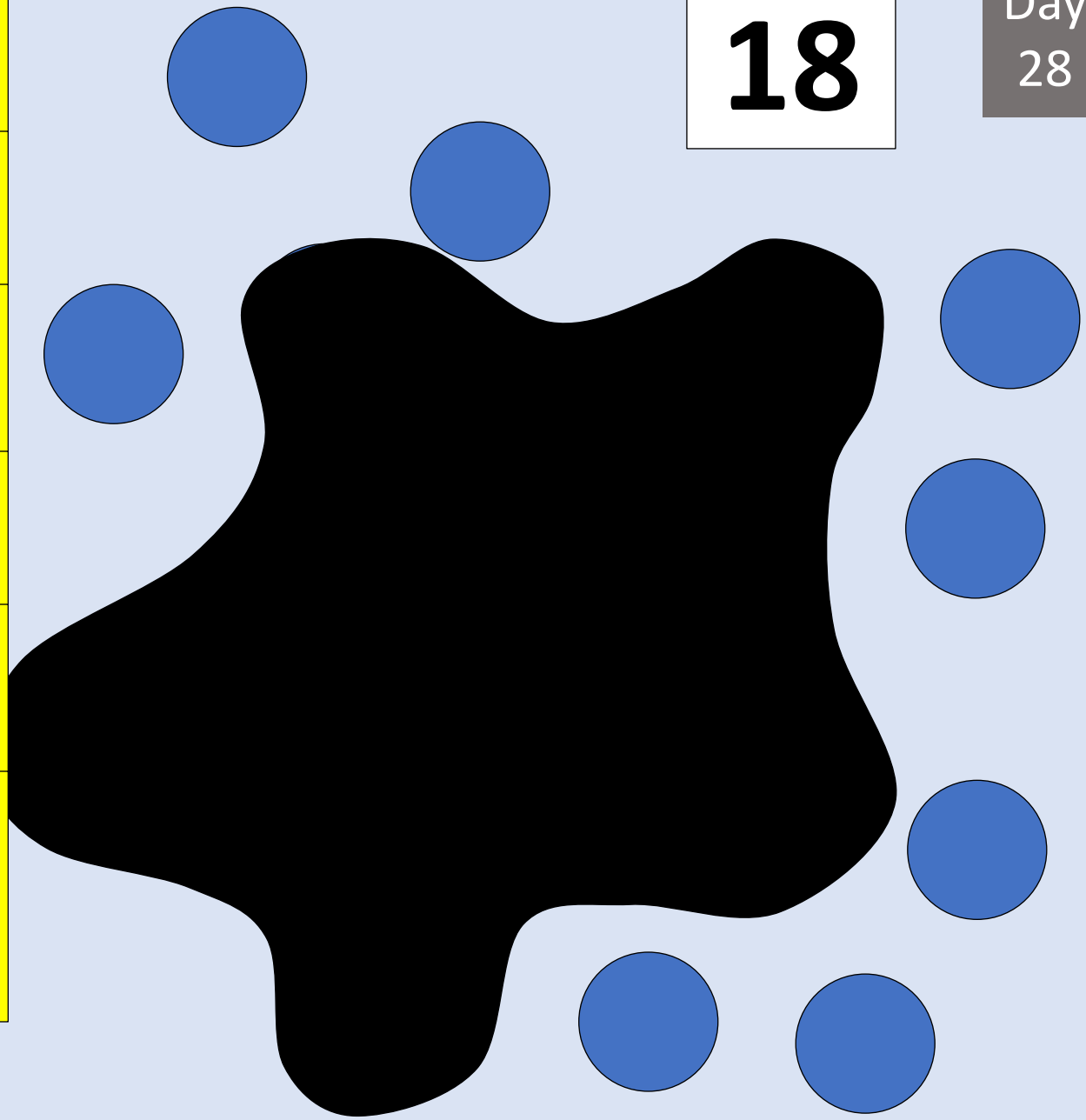
Splat!

How many shapes are under the splat? How do

How else could you know?

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

What can we learn from this picture?



18

Day 28

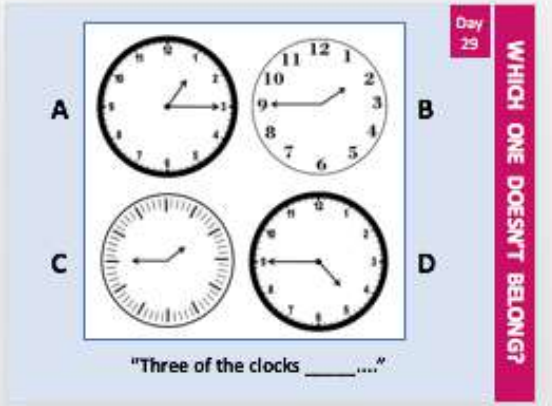
SPLAT!

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 _____...."

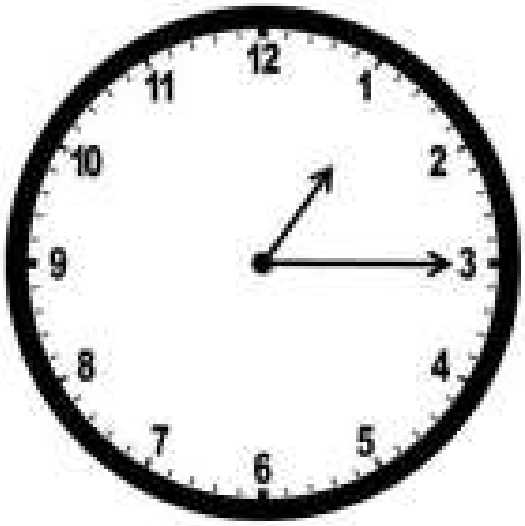
Possible Responses:

- Three of the clocks show a time that is 45 minutes past the hour. Clock A is not 45 minutes past the hour, it is 15 minutes past.
- Three of the clocks have hash marks to show the minutes. Clock B does not have hash marks showing each 1-minute time interval.
- Three of the clocks have numbers. Clock C has no numbers.
- Three of the clocks show a time that is 1:something. Clock D is not a time in the 1 o'clock hour.

Day 29

WHICH ONE DOESN'T BELONG?

A



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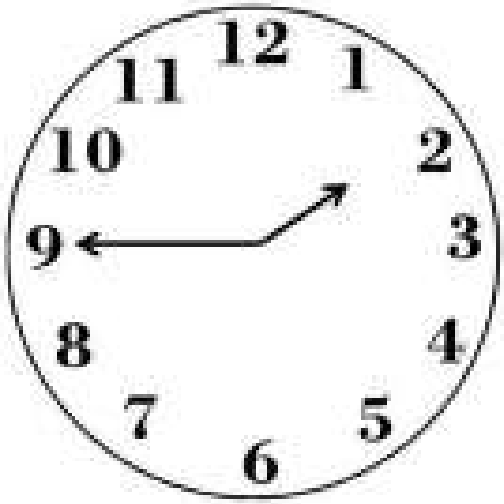

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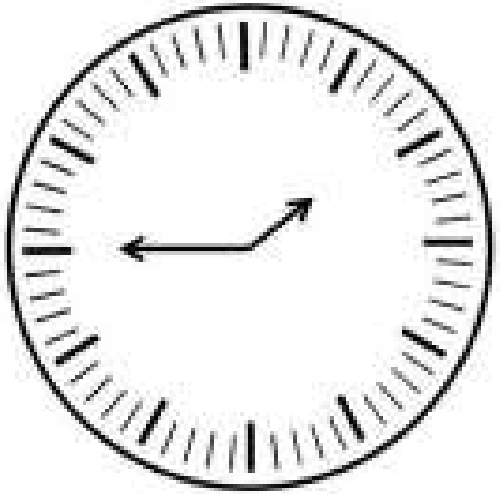

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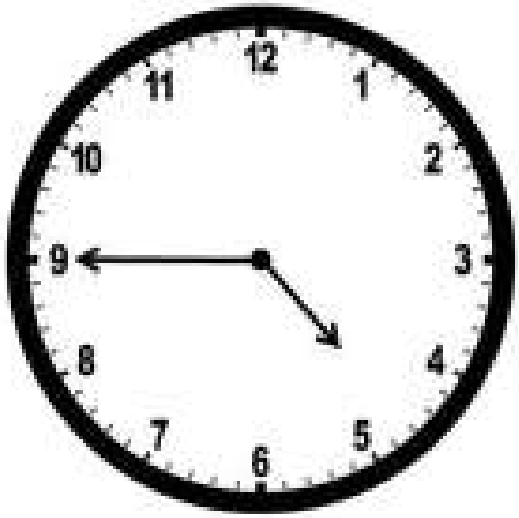

"Three of the clocks _____...."

3.MD.A.1

Day 30

CHORAL COUNTING

Count back by 10s – starting on 548

BEGIN WITH NUMBER: 548
COUNTING RULE: Subtract 10
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?

548 538 528 518 508
498 488 478 468 458
448 438 428 418 408
398 388 378

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 row below increases by 30 when compared to the number directly above it (why do you think that is true? Because we are counting by 3s and there are 10 numbers on each row, so 3x10=30)
- Each column ends in the same number
- Two rows have the same 100s place value
- The diagonal increases by 33 when you go down left to right. It increases by 27 when you go down right to left. (Why do you think that is true?)

Count back by 10s – starting on 548

Day 30

BEGIN WITH NUMBER: 548
COUNTING RULE: Subtract 10
GOAL:

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

548	____	____	____	____
____	____	____	____	____
____	____	____	____	____
____	____	____	____	____

CHORAL COUNTING

3.NBT.A.2

Day 31

Esti-Mystery

Estimation Activity with clues!

NOTE: This Estimation routine contains a number chart. Have students determine which numbers should be eliminated BEFORE clicking to reveal the number chart after each clue.

Students use clues to solve the estimation mystery. After all 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.

PROTIP: Use a number chart in a dry erase sleeve for students to track the numbers that are/are not possible.

ESTIMATION

Adapted from www.stevewyborney.com

How many dominoes are in the glass?

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

Write down your first estimate. After each clue, you'll see if your estimate is still a possibility. After each clue, if it is no longer possible write down a new estimate – and be prepared to explain why you chose it.

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3.NBT.A.2

Clue #1

The answer is between 20 and 50.

Clue #2

The answer is an EVEN number.

Clue #3

The answer does NOT have a 4 in the TENS PLACE.

Clue #4

The answer does, however, have a 4 in the ONES PLACE.

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

After seeing the clues, you have narrowed the possibilities to a small set of numbers. Before you see the answer, select your final estimate. Write it down, and explain to someone why you chose that number.

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

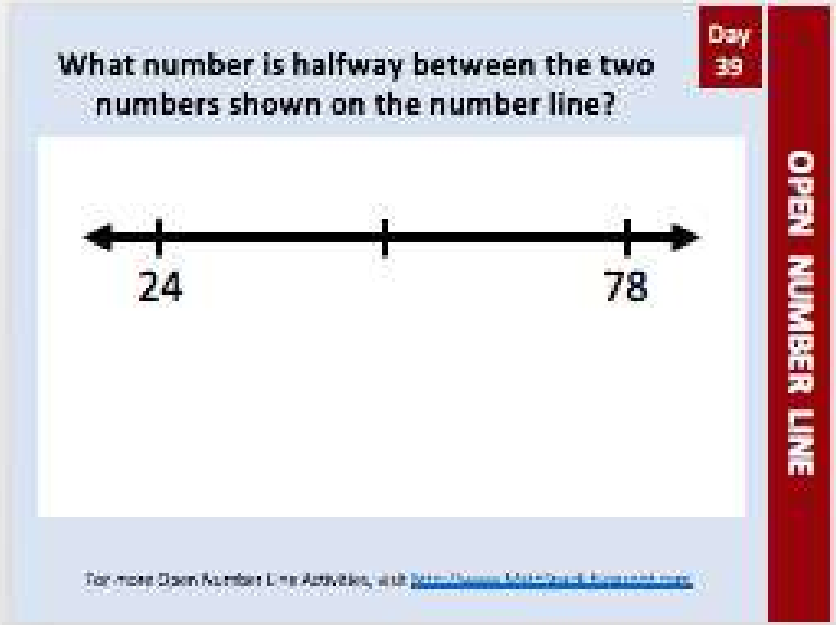
The Reveal
Click to see the answer.

Use the NEXT SLIDE with students.

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

Day 32

OPEN NUMBER LINE



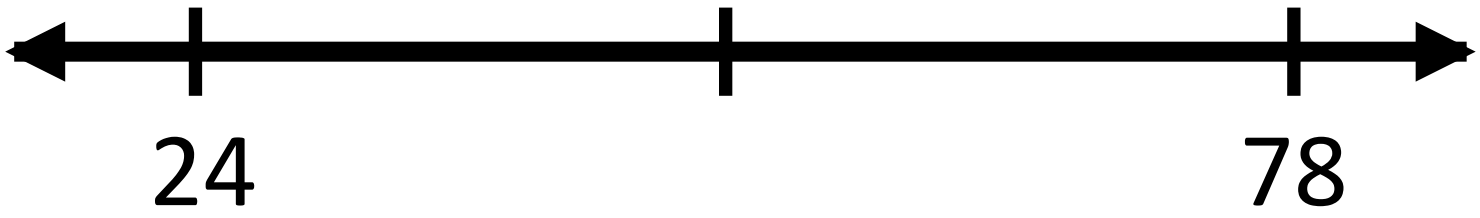
Possible reasoning:

The spread between 24 and 78 is 54. Half of 54 is 27, so the midpoint of this number line is 51 (24+27 or 78-27).

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

Day 32

What number is halfway between the two numbers shown on the number line?



OPEN NUMBER LINE

3.R.4

Day 33

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

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 not have worked with multiplication and area, yet. Allow students to explore and invent strategies. Encourage discussion.
Allow students TIME to REASON on their own. Do not jump in with strategies and ideas.
Encourage productive struggle.
For students whose struggle is not proving to be productive, encourage various counting strategies (skip-counting by 10s and 5s, for example).

The area covers the SAME number of square tiles: 40 square tiles are covered with each rug.

DECIDE & DEFEND

Day 33

Which rug covers a bigger area?

How do you know?

DECIDE & DEFEND

3.OA.A.1

Day 33

Reflect on Learning

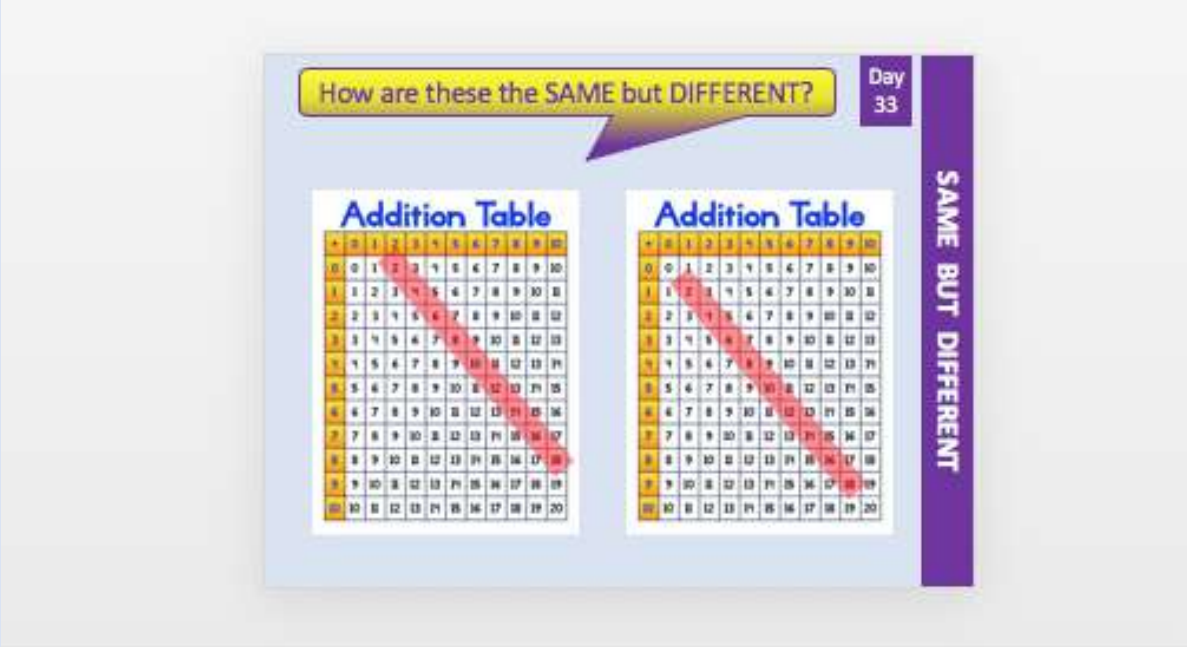
- What was mathematically important in the problem?
- What new math idea did you learn today?
- Next time, I plan to….

DECIDE & DEFEND

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

- They are the same addition table
- The highlighted diagonal row both show 2,4,6,8,….
- They are different facts that make the pattern (2+0 vs. 1+1 and 1+3 vs. 2+2)
- They have the same sums but the second table uses doubles.

How are these the SAME but DIFFERENT?

Day 34

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

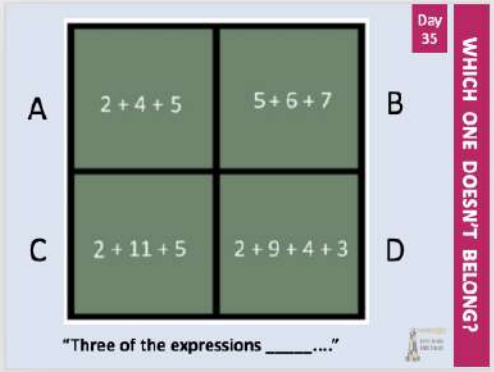
SAME BUT DIFFERENT

Use the NEXT SLIDE with students.

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

Day 35

WHICH ONE DOESN'T BELONG?



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

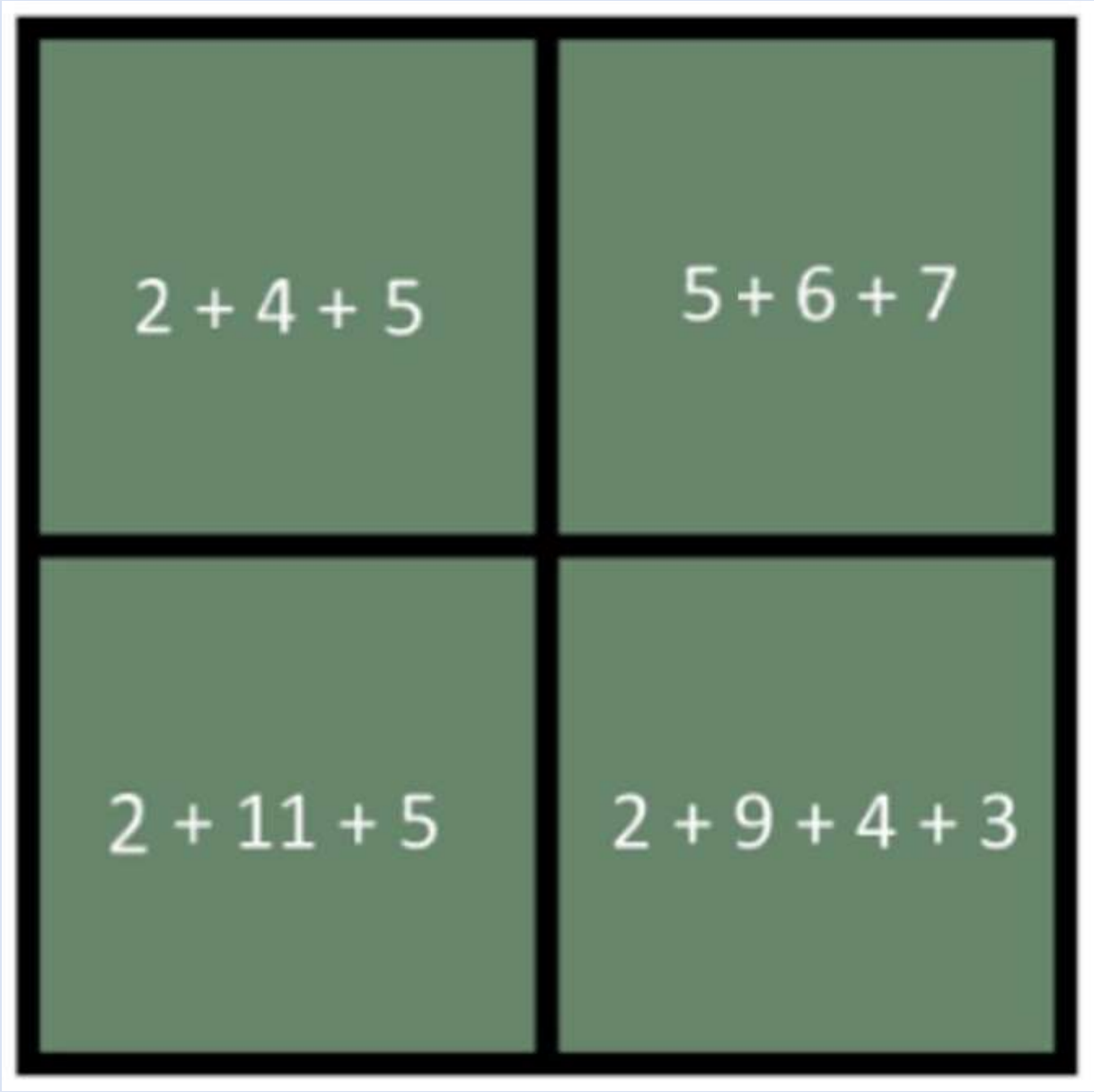
NOTE: These should NOT be called"equations" since equations have an equal sign; these are referred to as "expressions"

Possible Responses:

- A: Three of the expressions have a sum of 18. Expression A has a sum of 11, not 18.
- B: Three of the expressions have the number 2 as one of the addends. Expression B is the only one that does not use the number 2 as one of the addends.
- C: Three of the expressions use only single-digit values. Expression C has a double-digit value (11), so not all values are single digit.
- D: Three of the expressions are sums of 3 addends. Expression D is an expression with 4 addends, not 3.

Day 35

WHICH ONE DOESN'T BELONG?



"Three of the expressions _____...."

Day 36

98 + 5
98 + 13
98 + 34
98 + 52

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 a quick ten by decomposing at least one of the numbers.

Example: 98 + 52
98 + 2 + 50
100 + 50
150
so 98 + 52 = 150 (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.

NUMBER TALK

Day 36

98 + 5

NUMBER TALK

3.NBT.A.2

How many blue shapes do you

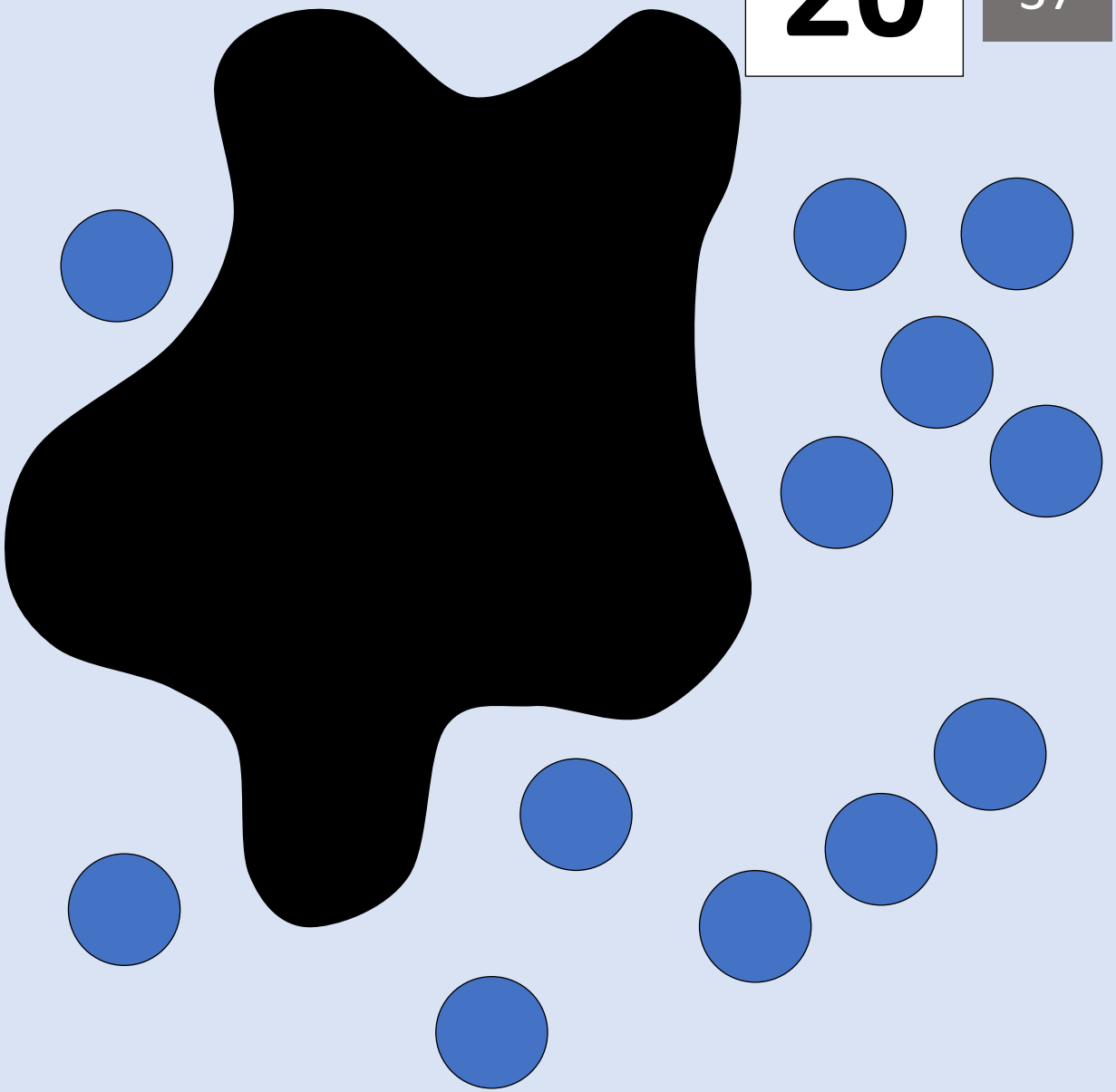
Splat!

How many shapes are under the splat? How do

How else could you know?

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

What can we learn from this picture?



20

Day 37

SPLAT!

Day 38

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).

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

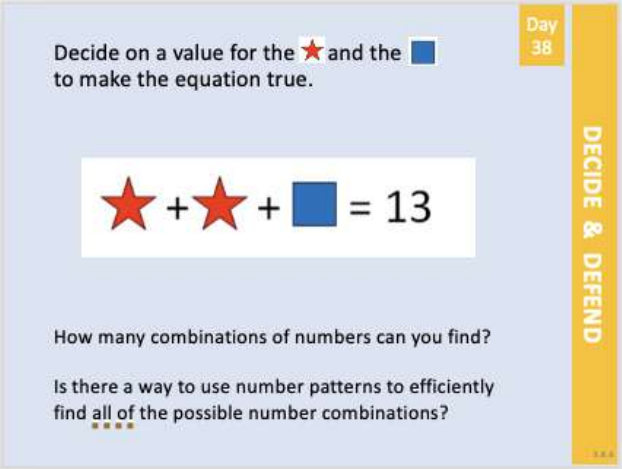
DECIDE & DEFEND

Use the NEXT SLIDE with students.

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

Day 38

DECIDE & DEFEND



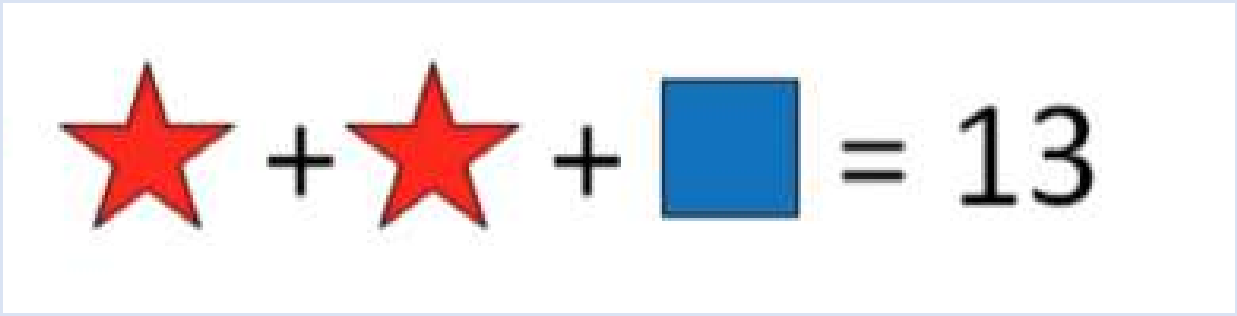
There are MANY combinations. Encourage a discussion about the PATTERNS noticed and the process used.

SOME of the possible solutions:

- 1+1+11
- 2+2+9
- 3+3+7
- Etc.....
- And… some students may recognize that the combinations become endless if we include decimal values for the stars/box.

Day 38

Decide on a value for the ★ and the ■ to make the equation true.



How many combinations of numbers can you find?

Is there a way to use number patterns to efficiently find all of the possible number combinations?

DECIDE & DEFEND

Day 38

Reflect on Learning

- What was mathematically important in the problem?
- What new math idea did you learn today?
- Next time I plan to….

DECIDE & DEFEND

Day 39

152 – 20
152 – 25
138 – 10
138 – 19

TEACHER NOTES

BEFORE

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DURING

Removing Tens Without the Need for Regrouping:

The following Number Talks encourage students to make a quick ten by decomposing at least one of the numbers.

Example: 152 – 25 use the previous understanding of 152-20 as a foundation to this problem
152 – 20 – 5
132 – 5
132 – 2 – 3
130 – 3
127
so 152 – 25 = 127 conclude be coming back to the original problem 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.

NUMBER TALK

Day 39

152 – 20

NUMBER TALK

3.NBT.A.2

Day 40

What do you NOTICE?

QUICK COUNT

3.OA.A.1

Day 40

QUICK COUNT

What did you NOTICE?

Day 40

QUICK COUNT

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

Day 40

QUICK COUNT

(They) noticed ____ so they _____

I noticed ____ so I _____

Day 40

Reflect

What was mathematically important?

QUICK COUNT