

180 Days of Number Sense Routines

Grade 4

Days 161-180





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 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, 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.



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

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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.

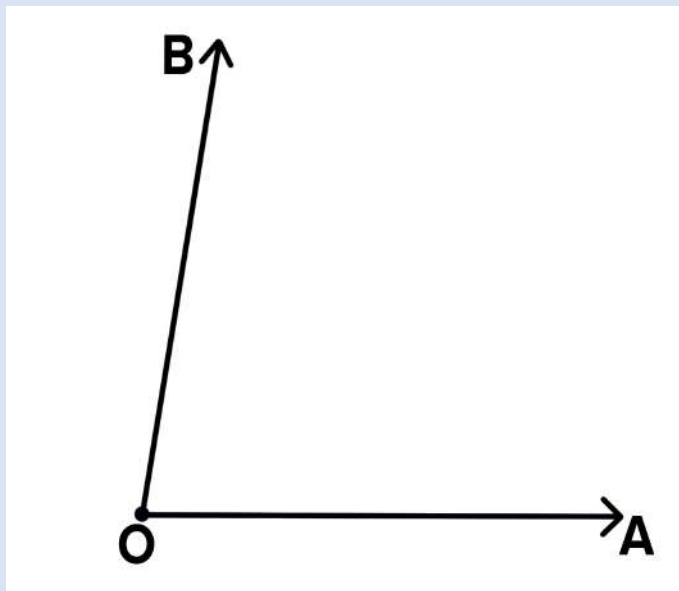
Possible Reasoning: *Angle BOA is slightly smaller than a right angle (90 degrees), so the best closest measurement is 80 degrees.*



Think about the measurement of $\angle BOA$

Which answer is

As Close as it Gets?



20°

45°

80°

95°



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



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 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





Use the NEXT SLIDES with students.

Here are some possible responses. It may not be all-inclusive.
Additional ideas encouraged.

THE SUNFLOWER GARDEN

The fourth-grade class is planting sunflower seeds in the school garden. They have 469 seeds. They plan to plant 9 rows of seeds with equal amounts of seeds in each row.


How many seeds will be leftover?
How do you know?

 or 

1 seed no seeds

DECIDE & DEFEND

Day 162



The question is simply how many seeds are leftover.

They can plant 52 rows, but that is NOT necessary to answer the question.

Students may recognize that 450 seeds would be divided by 9 evenly, so they only need to consider the 19 remaining seeds.

$$9 \times 2 = 18 \text{ and } 19 - 18 = 1$$

If students do not come up with this strategy, help them to consider it by asking, "What's the largest amount you can calculate mentally that could be used in 9 rows? Think about your basic facts to help you". Give time for students to come up with $9 \times 5 = 45$ and $9 \times 50 = 450$.

Then ask, "How many will be leftover once you plant those 450 seeds?". Give time for them to process what to do with the 19 leftover seeds before continuing the conversation.

So, there will be 1 seed leftover.

THE SUNFLOWER GARDEN

Day
162

The fourth-grade class is planting sunflower seeds in the school garden. They have 469 seeds. They plan to plant 9 rows of seeds with equal amounts of seeds in each row.

How many seeds will be leftover?

How do you know?



1 seed

or



no seeds

DECIDE & DEFEND



Reflect on Learning

- What was mathematically important in the problem?
- What new math idea did you learn today?
- How can decomposing numbers make calculations more efficient?



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.



Use the NEXT SLIDE with students.

Here is are some possible responses. It may not be all-inclusive.
Additional ideas encouraged.

Day
163

- 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 163

$20 \div 5$

$200 \div 50$

SAME BUT DIFFERENT

SAME:

- Both have a quotient of 4
- Both are division expressions
- Both are breaking a larger number into groups of smaller quantities
- Both have a dividend that begins with the digit 2
- Both have a divisor that begins with the digit 5

DIFFERENT

- 20 vs. 200 and 5 vs. 50
- The first is 20 items divided into just 5 groups, while the second is 200 items divided into 50 groups

SAME BUT DIFFERENT



How are these the SAME but DIFFERENT?

Day
163

$$20 \div 5$$

$$200 \div 50$$

SAME BUT DIFFERENT



Use the NEXT SLIDE with students.

Here is are some possible responses. It may not be all-inclusive.
Additional ideas encouraged.

$\frac{1}{4}$	$\frac{2}{8}$
$\frac{25}{100}$	$\frac{3}{6}$

Three of these numbers....

Day
164

WHICH ONE DOESN'T BELONG?

Possible Responses:

- Three of these numbers are not expressed as unit fractions. $\frac{1}{4}$ is expressed as a unit fraction (1 as the numerator).
- Three of these numbers have an odd number as the numerator. $\frac{2}{8}$ does not have an odd number as the numerator.
- Three of these numbers have a single-digit numerator. $\frac{25}{100}$ does not have a single-digit numerator.
- Three of these numbers are equivalent to $\frac{1}{4}$. $\frac{3}{6}$ is not equivalent to $\frac{1}{4}$.



$$\frac{1}{4}$$

$$\frac{2}{8}$$

$\frac{1}{2}$

$$\frac{25}{100}$$

$$\frac{3}{6}$$

Three of these numbers....



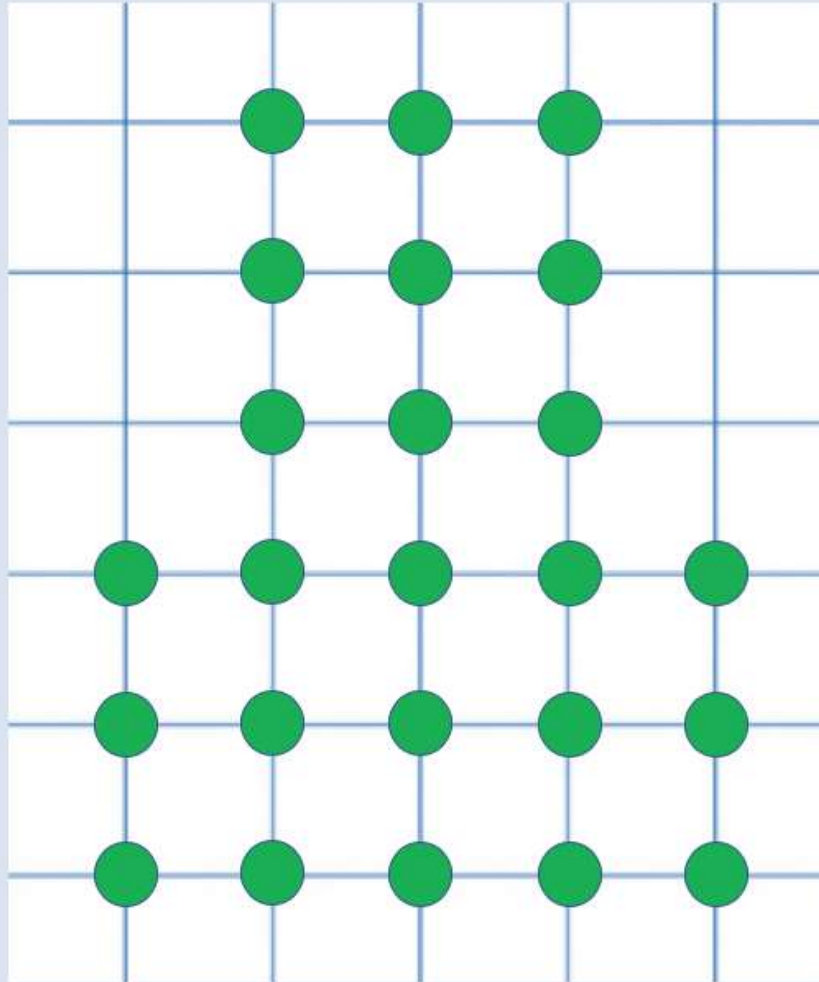
Directions for QUICK COUNT routines

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"



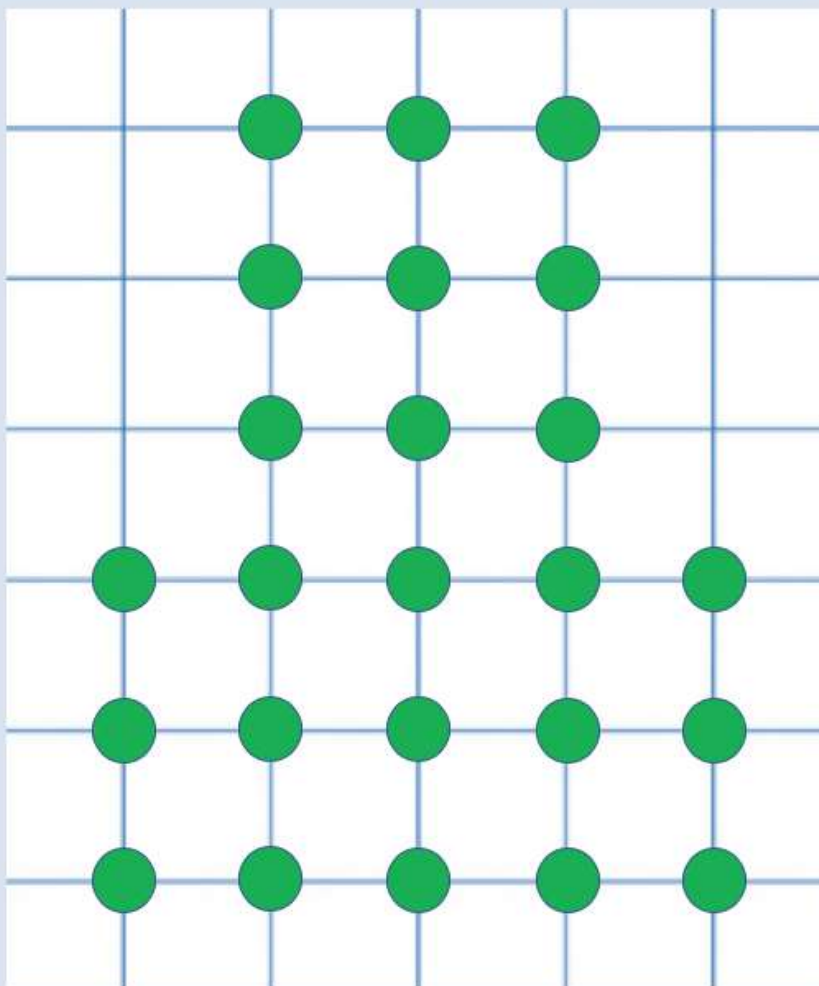
What do you NOTICE?



**What did you
NOTICE?**



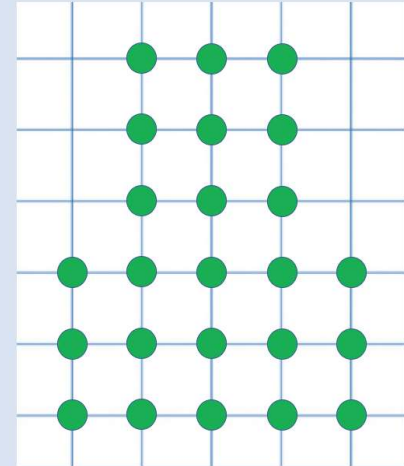
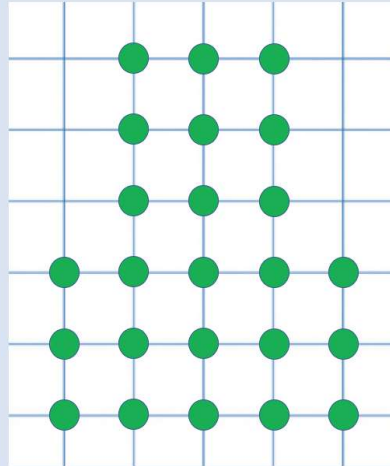
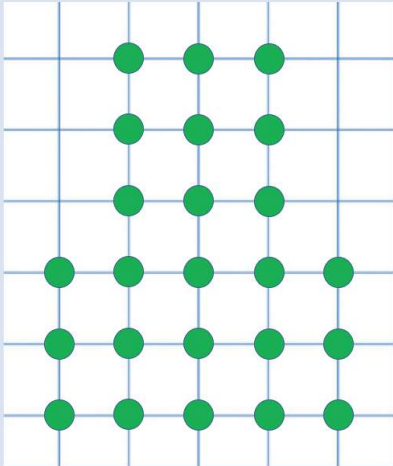
How many dots do you see?
What counting shortcut did you use?



I noticed ____ so I ____

(They) noticed ____ so they ____

Day
165



quick count



Reflect

**What was
mathematically
important?**



Use the NEXT SLIDE with students.

Here are the directions and some possible responses. It may not be all-inclusive. Additional ideas encouraged.

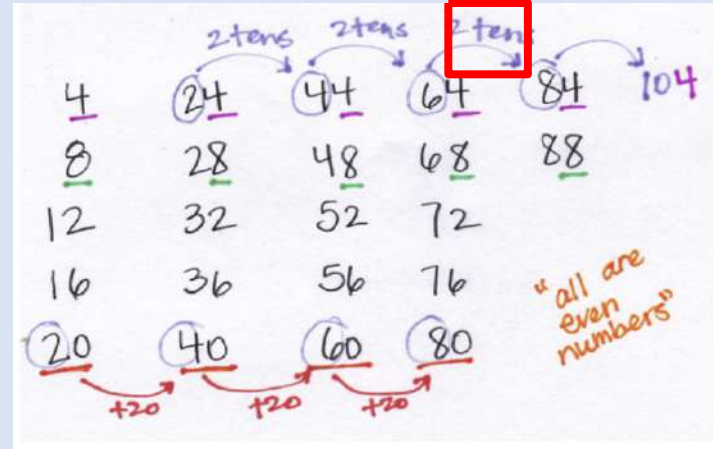
Day
166

Multiples of 4

SAY: Today we are going to skip-count by 4s starting with 4. Everyone will count together, but slowly, so I have time to write the numbers down on the chart (see next slide).

When we are done with the count, we will discuss some of the patterns that we see, so be on the lookout for patterns as we count.

Ready? Let's begin: 4, 8, 12....



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Stop when you get to 68 on the 4th column.

Ask if anyone knows the number that will be to the right of 64.

Have the explain the PATTERN that helped them to know that.

Continue discussing the various patterns.

Discuss WHY having 5 numbers in each column created these patterns.



Multiples of 4

4				
8				

$$99 + 38$$

$$98 + 47$$

$$198 + 29$$

$$3,498 + 77$$

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 by Making Friendly Numbers through Compensation Strategies

Key Ideas:

- $99 + 38$ think $100 + 38 = 138$ then subtract the 1 additional $138 - 1 = 137$
- $98 + 47$ think $100 + 47 = 147$ then subtract the 2 additional $147 - 2 = 145$
- $198 + 29$ think $200 + 29 = 229$ then subtract the 2 for $229 - 2 = 227$
- $3498 + 27$ think $3500 + 77 = 3577$ then subtract the 2 for $3577 - 2 = 3575$

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.

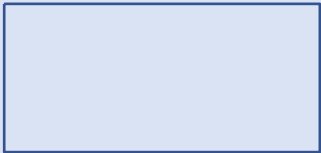
AFTER

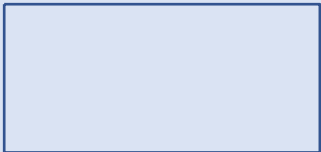
Discuss how changing numbers to landmark numbers and using compensation strategies makes addition easier.



$$99 + 38$$



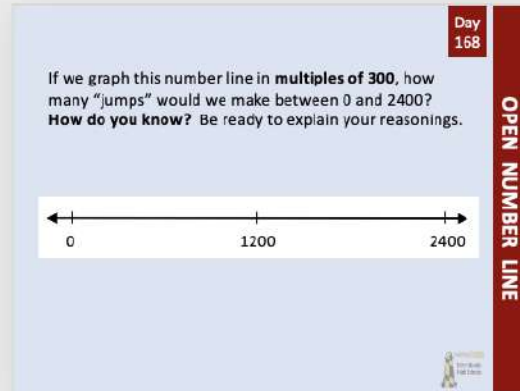




Use the NEXT SLIDE with students.

Here are the directions and some possible responses. It may not be all-inclusive. Additional ideas encouraged.

Day
168



Collect a variety of ideas first. Do not acknowledge whether suggested answers are correct/incorrect (yet). This would work well run similar to a Number Talk by having students just offer the number first with no explanation, then going back and having students justify one of the suggested numbers.

SOLUTION: 8 jumps of 300 are needed

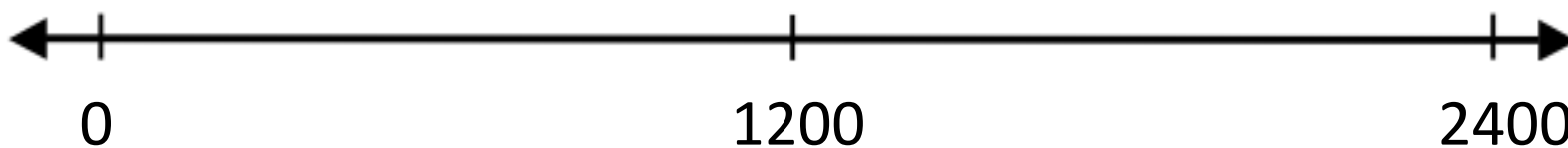
- $8 \times 3 = 24$ so $8 \times 300 = 2400$
- 4 jumps are needed to get to 1200 – 300, 600, 900, 1200 – so double of 4 needed to get to 2400
- Individual jumps 300, 600, 900, 1200, 1500, 1800, 2100, 2400 – if this is offered, use this as an opportunity to discuss efficient strategies (recognizing, of course, that is students struggle with their multiplication facts then skip-counting every jump may be the most efficient method for that specific student)

OPEN NUMBER LINE



Can you do this as a *mental math* calculation?

If we graph this number line in **multiples of 300**, how many “jumps” would we make between 0 and 2400?
How do you know? Be ready to explain your reasonings.



The total is...

36

Since the total is 36, what
do we know about the
value of the five circles?

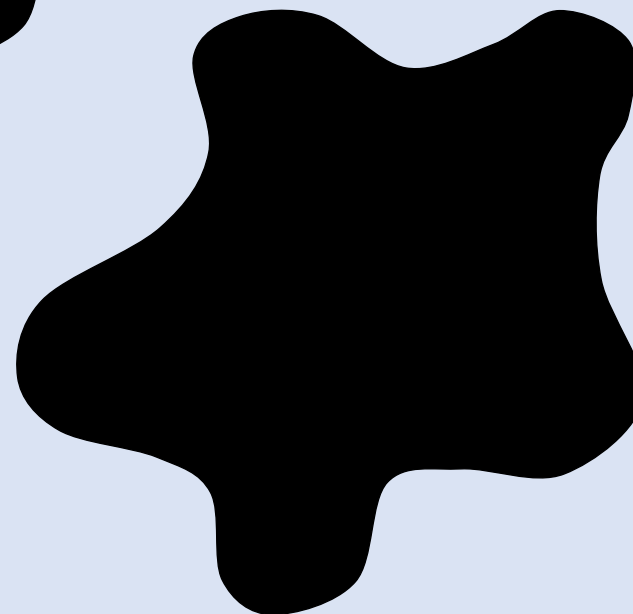
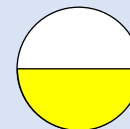
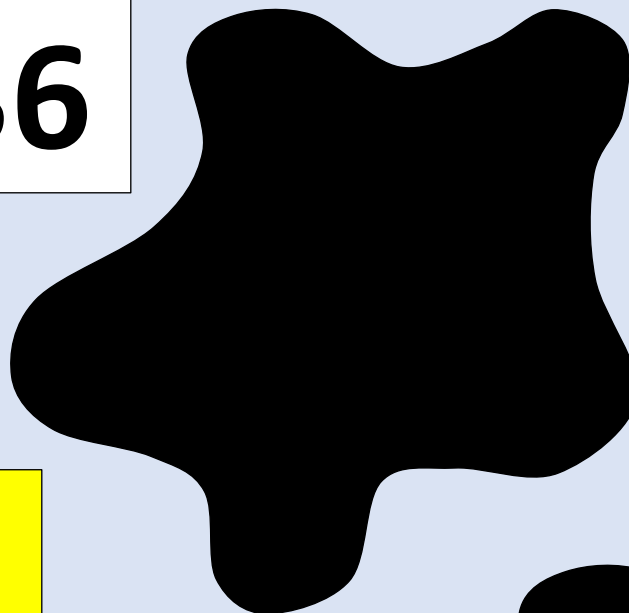
yellow part?

How do you know?

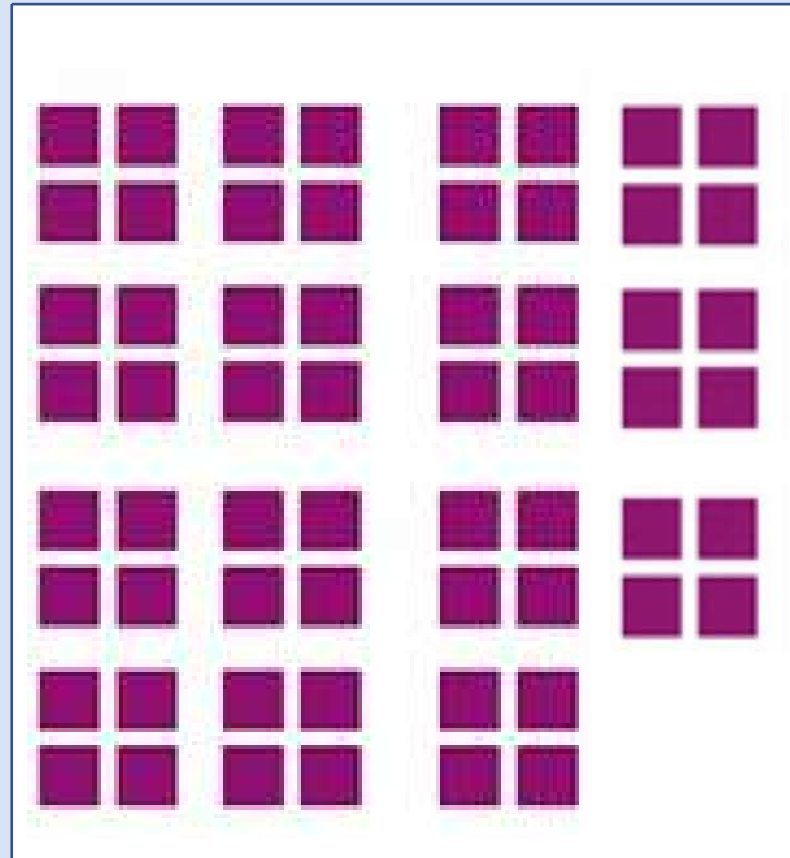
you know?

How else
could you know? ow?

What can we learn
from this picture?



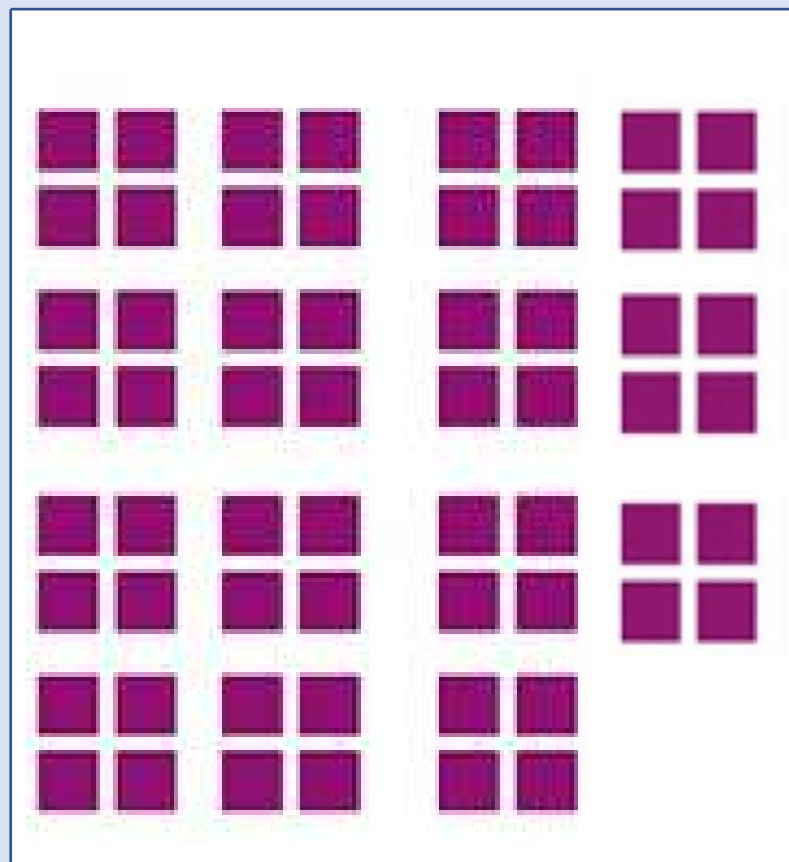
What do you NOTICE?



**What did you
NOTICE?**



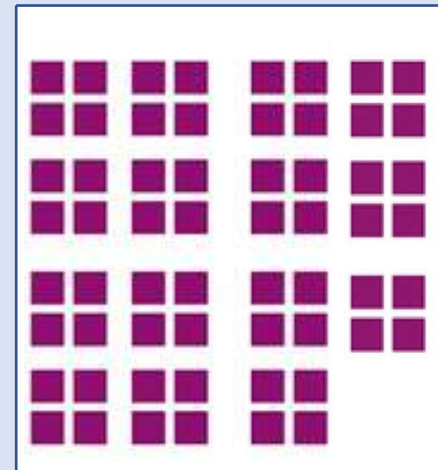
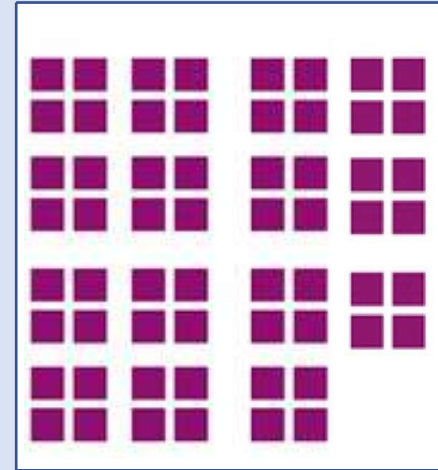
How many small squares you see?
What counting shortcut did you use?



I noticed ____ so I ____

(They) noticed ____ so they ____

Day
170



quick count

Reflect

**What was
mathematically
important?**



$$45 \div 9$$
$$450 \div 9$$
$$454 \div 9$$
$$460 \div 9$$

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**Mental Division with Remainders**

Possible Responses:

- $45 \div 9 = 5$
- $450 \div 9 = 50$
- $454 \div 9 = 50 \text{ r.}4$
- $460 \div 9 = 51 \text{ r.}1$


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

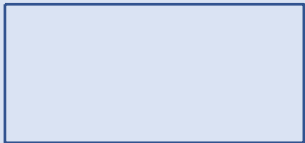
Highlight the idea that if we know our basic multiplication/division facts, we can extend that knowledge to larger numbers by applying what we know about values that are ten times more than the known fact. The remainders will simply be the amount leftover after dividing.



$$45 \div 9$$



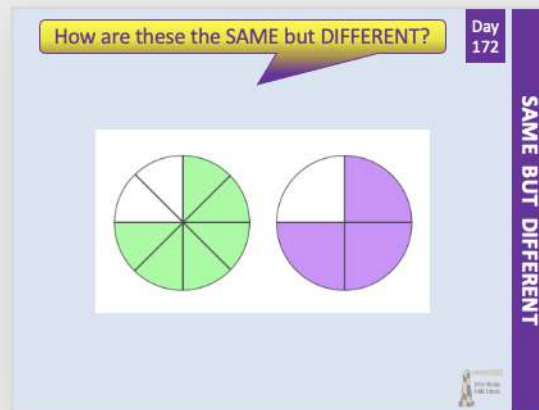




Use the NEXT SLIDE with students.

Here are some possible responses. It may not be 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....”



Both have an area less than 1 shaded

Both have an area equivalent to $\frac{3}{4}$ shaded

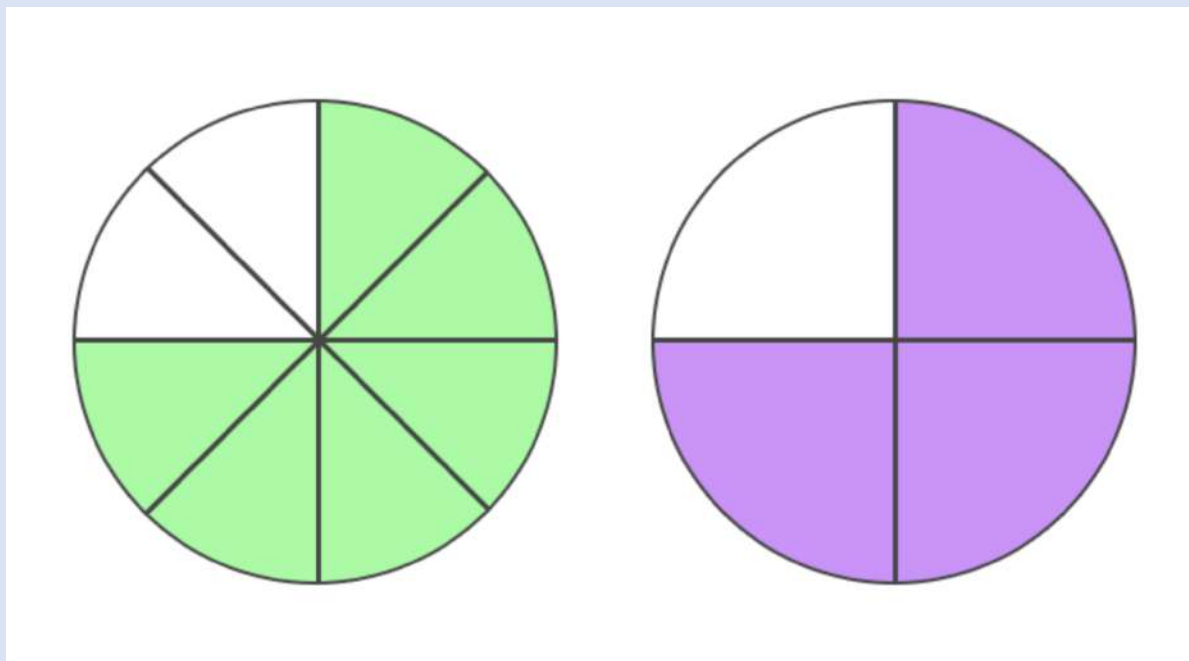
The green one is eighths but the purple one is fourths.

The green one has 6 parts shaded but the purple one has 3 parts shaded.

****Even though the number of parts shaded is DIFFERENT, the amount shaded is the SAME**

How are these the SAME but DIFFERENT?

Day
172



SAME BUT DIFFERENT



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.

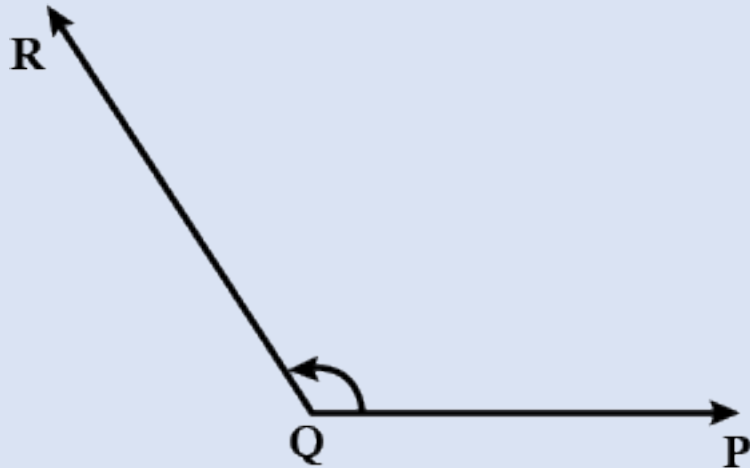
Possible Reasoning: *A 180-degree angle is a straight line. This angle is not large enough to be almost 180 degrees, but it is larger than 90 degrees, so the closest value must be 120 degrees.*



Think about the measurement of $\angle RQP$

Which answer is

As Close as it Gets?



45°

80°

120°

175°



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






Use the NEXT SLIDE with students.

Here are some possible responses. It may not be all-inclusive.
Additional ideas encouraged.

Day
174

WHICH ONE DOESN'T BELONG?

 42 seconds	 60 minutes
 12 inches	<div>24 hours</div>

"Three of these measurement units..."

Possible Responses:

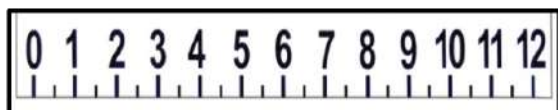
- Three of these measurement units are equivalent to a UNIT MEASURE (1 hour / 1 foot / 1 day). 42 minutes cannot be converted to a UNIT MEASURE
- Three of these measurement units contain the digit 2. 60 minutes does not contain a digit of 2
- Three of these measurement units are used to measure time. 12 inches does not measure time.
- Three of these measurement units have a graphic representation. 24 hours does not have a picture to represent it.



42 seconds



60 minutes



12 inches

24 hours

“Three of these measurement units...”



TEACHING NOTES: Choral Counting of Angle Measures

SAY: For today's Choral Count, let's start with a zero angle and add 30 degrees with each count until we get to 360 degrees which is a full angle, or a circle. Remember to count all together and slowly, so I can record the values on the board as we count (see next slide).

Before beginning, you may want to review:

- How many degrees are in a right angle? (90)
- When we get to 90 degrees, instead of saying 90, let's say "right angle".
- How many degrees are in a straight line? (180)
- When we get to 180 degrees, instead of saying 180, let's say "straight angle".
- How many degrees are in a full circle? (360)
- When we get all the way to 360, we'll say "circle" and that is where our counting will end.

0, 30, 60, right angle, 120, 150, straight line, 210, 240, 270, 300, 330, circle!

When finished, go back and **CLASSIFY** each angle type

Types of angle

Acute angle Less than 90°	Right angle Exactly 90°	Obtuse angle Between 90° and 180°
Straight angle Exactly 180°	Reflex angle Between 180° and 360°	Full angle Exactly 360°

NOTE: *reflex angle* (greater than 180 degrees but less than 360 degrees) and *full angle* (also called a *complete angle* or *round angle*) are not in Gr.4 standards but good to know!

And did you know an angle with zero degrees is called a "*zero angle*" (picture two rays with the same endpoint pointing the same direction layered on top of each other).

0	30		right angle

360 degrees

CIRCLE - Full Angle



Types of angle

Acute **angle** Less than 90°

Right **angle** Exactly 90°

Obtuse **angle** Between 90° and 180°

Straight **angle** Exactly 180°

Reflex **angle** Between 180° and 360°

Full **angle** Exactly 360°

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



Use the NEXT SLIDE with students.

Here are some possible responses. It may not be all-inclusive.
Additional ideas encouraged.

Day
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DECIDE & DEFEND

A group of volunteers participated in a Chesapeake Bay clean-up project. They collected 1,292 pounds of trash. How many dumpsters should they rent?

Dumpster rental for any need

Waste Management makes it easy to find a dumpster rental solution, whether you need a dumpster individually or for just one project.

2-Yard Dumpster

When you need garbage or recycling taken away, look no further than our 2-yard dumpster. It holds 400 lbs. of waste and can be equipped with wheels.

[Check Availability](#) How do we do it? (3:30)



The volunteers will need to rent **4 dumpsters**.
3 dumpsters is only enough for 1,200 pounds of trash, so they need one more to accommodate the remaining 92 pounds of trash.

A group of volunteers participated in a Chesapeake Bay clean-up project. They collected 1,292 pounds of trash. How many dumpsters should they rent?

Dumpster rental for any need

Waste Management makes it easy to find a dumpster rental solution, whether you need a dumpster indefinitely or for just one project.

2 Yard Dumpster

When you need garbage or recycling taken away, look no further than our 2-yard dumpster. It holds 400 lbs. of waste and can be equipped with wheels.

[Check Availability](#)

Have an account? [Log in.](#)



Reflect on Learning

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



The total is...

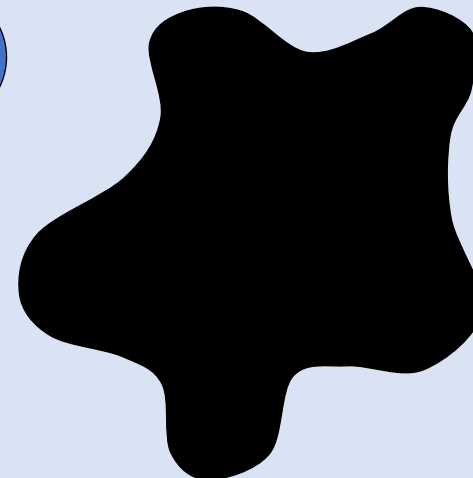
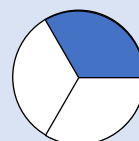
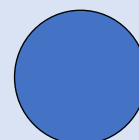
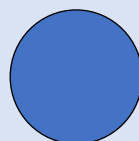
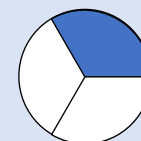
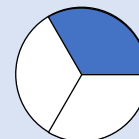
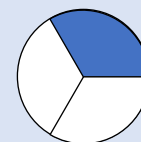
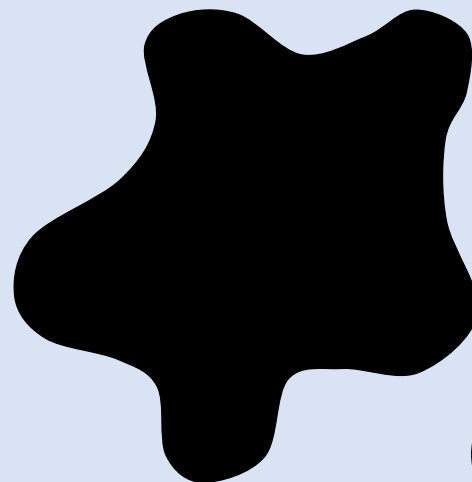
6

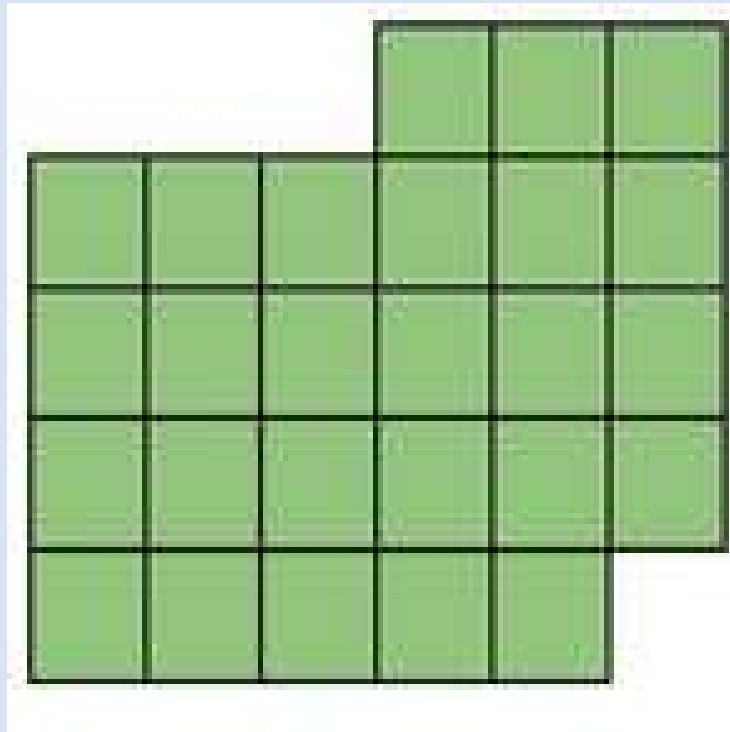
Let's look under
each splat to see
what value is there.

How else could you
know?

What is the value
under EACH splat?

How else could you
know?

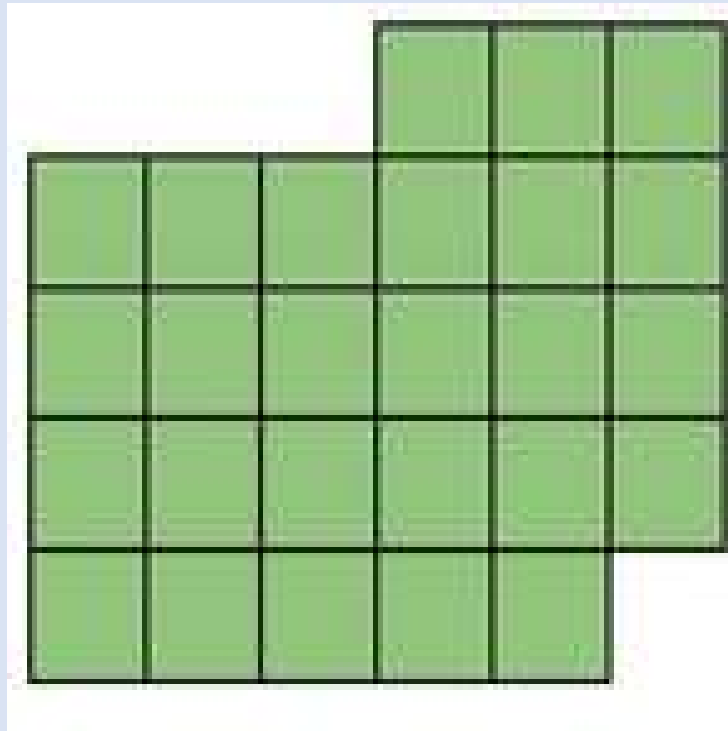




What do you NOTICE?

**What did you
NOTICE?**





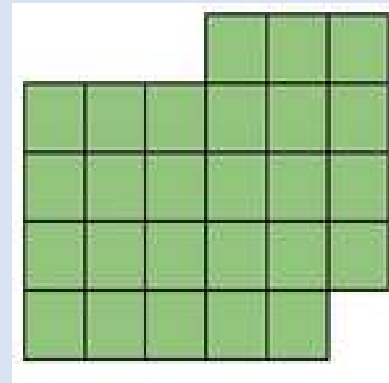
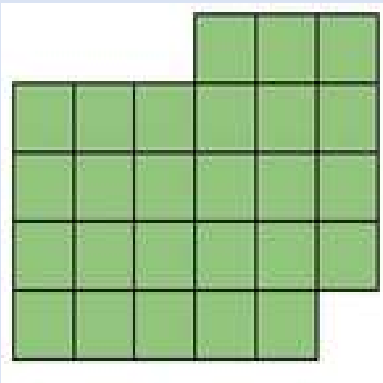
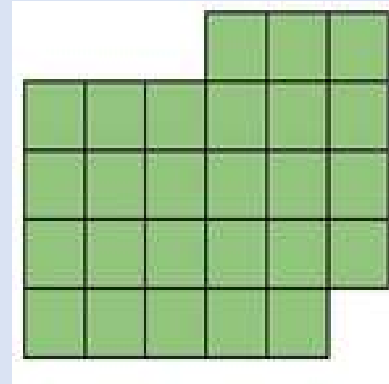
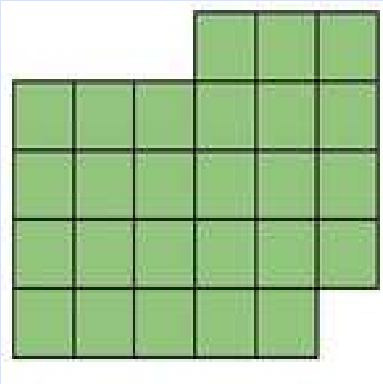
How many small green boxes?
What counting shortcut did you use?

I noticed ____ so I ____

(They) noticed ____ so they ____

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quick count



Reflect

**What was
mathematically
important?**

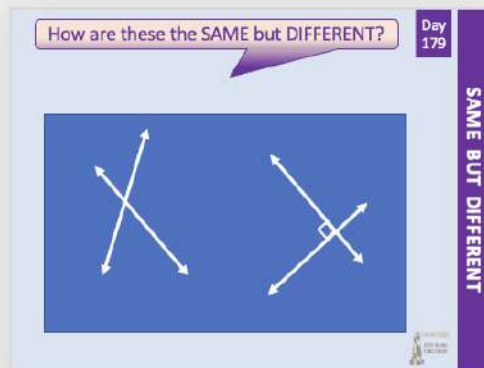


Use the NEXT SLIDE with students.

Here is are some possible responses. It may not be all-inclusive.
Additional ideas encouraged.

Day
179

- 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....”



SAME:

- Both are made from 2 lines
- Both continue indefinitely since they are made of lines
- Both show intersecting lines

DIFFERENT

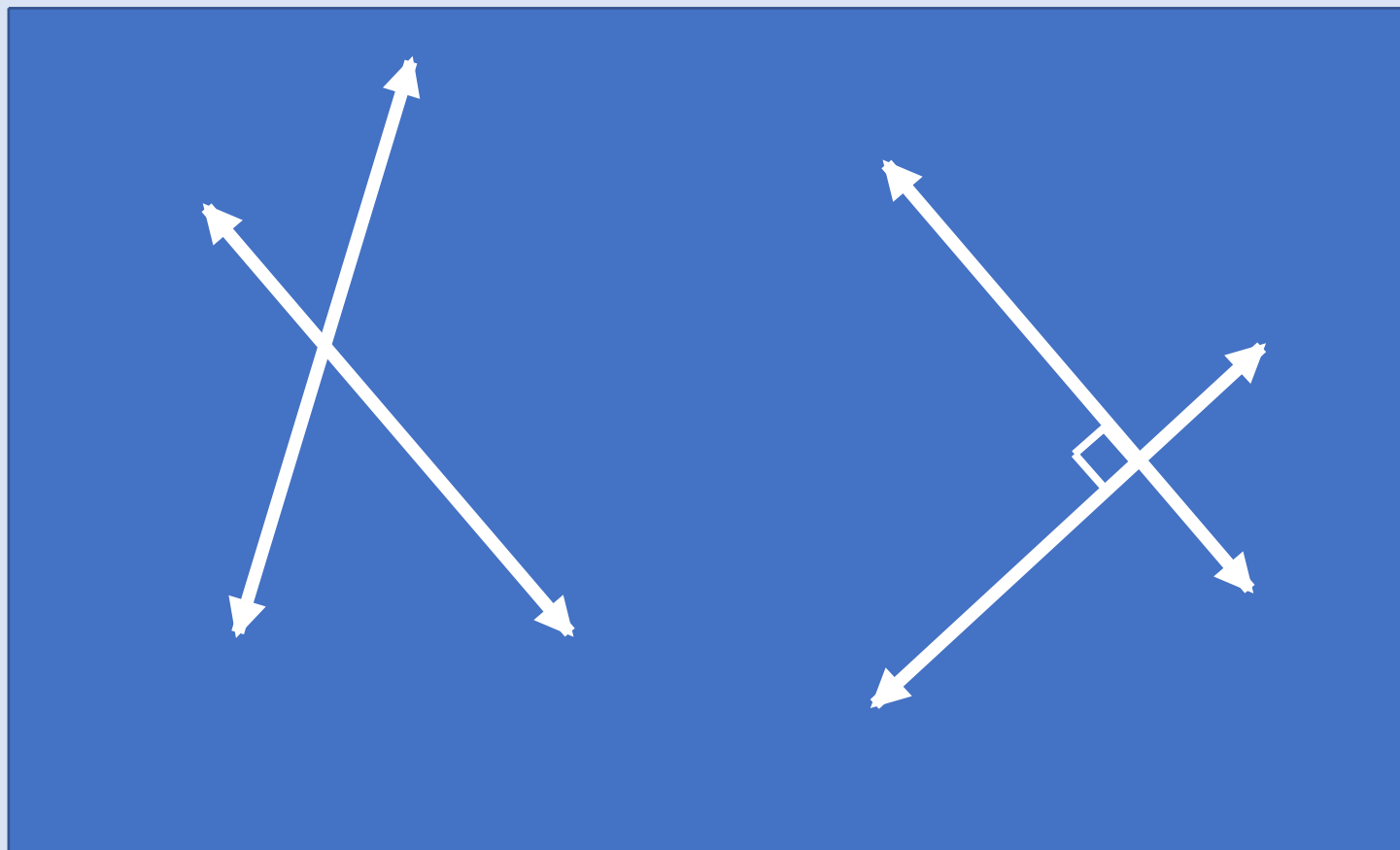
- The lines on the right are perpendicular -- The lines on the left are not perpendicular
- The lines on the right create a 90-degree angle -- The line on the left do not create a 90-degree angle
- The angle measure on the right is a KNOWN value – the angle measure on the left is NOT a known value
- The lines on the left create 2 acute and 2 obtuse angles – the lines on the right create only right angles

SAME BUT DIFFERENT



How are these the SAME but DIFFERENT?

Day
179



SAME BUT DIFFERENT

55

What is the value of
each BLUE circle?

What is the value of the

Splat!

ow?

one each splat:

Let's look under the
splats to see what
value is there.

you know?

