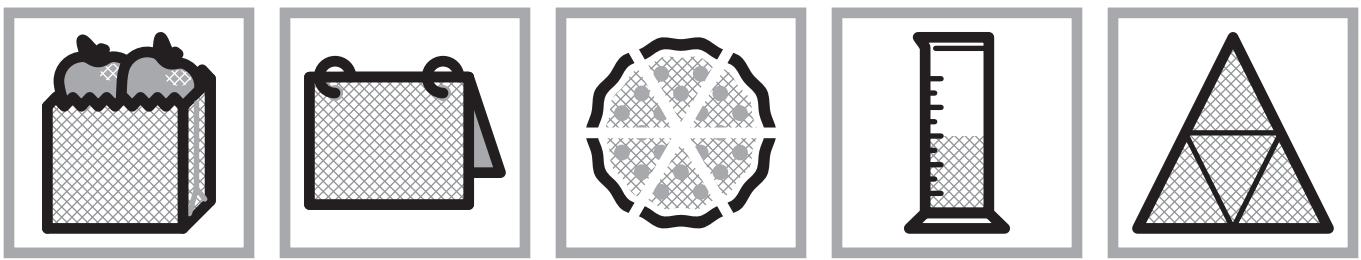
COMMON CORE COLLABORATIVE CARDS

Grade 3

Additional resources available at: didax.com/cccc



TEACHER GUIDE

by Kit Norris

OVERVIEW

Common Core Collaborative Cards support the teaching and learning of mathematics in several ways. They can be used:

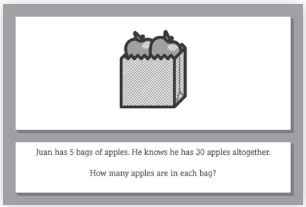
- As an activator for the day's lesson
- To review previous content
- As a learning center activity
- For students' independent practice

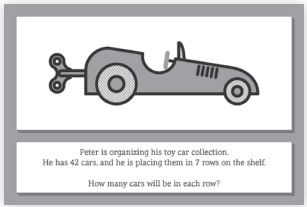
Common Core Collaborative Cards provide convenient and motivating ways to place students in collaborative teams for an upcoming unit or problem-solving lesson.

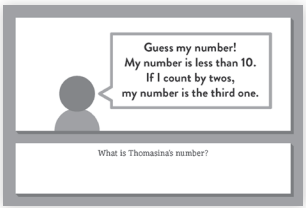
The Common Core Collaborative Cards series consists of five decks of cards per box, with each deck focusing on one domain of the Common Core at that grade level. The five domains are Operations and Algebraic Thinking, Number and Operations in Base Ten, Fractions, Measurement and Data, and Geometry. Each deck provides problems representing the standards articulated in the CCSS for that particular grade level and domain.

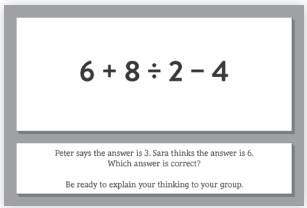
Teachers using these decks have commented that they have been able to observe what their students understand as well as identify their misconceptions. Teachers have also noted that their students began to rely on each other more instead of seeking out the teacher to answer their questions.

The cards are designed to place students in groups of four. Students are each given a card and asked to solve the problem on it. They then look for three other students who have the same solution. Once they have located their team, the students must be ready to explain why each team member's card belongs in the group. Here is one group of cards from the Algebraic Thinking deck:









All four cards in this set have the same answer, 6, so students who receive one of these cards form a group.

GROUP MEMBER ROLES

The cards offer a second feature: the reverse side of each card indicates the role the student holding the card is to perform in the group. After the students are presented with the task for that day's lesson, each member of the group takes on the designated role. These roles are as follows:

- Discussion Director
- Resource Manager
- Recorder
- Team Captain

Teachers can easily identify the roles that students are expected to perform, since students place their cards on their desks with the side indicating the role facing up. The roles are explained as follows:

If you are the **Discussion Director**, your job is to . . .

- Make sure that everyone has read the problem and understands what the question is asking. You can ask, "What do we know?" "What do we want to find out?" and "Can we make a prediction?"
- Invite everyone in the group to participate. You can use statements such as, "What is your idea?" and "What are you thinking?"

If you are the **Resource Manager**, your job is to . . .

- Ask the teacher a question if all of the members of the team have the same question.
- Get any supplies needed by the group.
- Keep track of time.

The Resource Manager's role goes beyond taking care of the supplies. The Resource Manager is the only member of the group who may ask the teacher a question. Before asking a question, every member of the group must have the same question, and the teacher can then direct the answer to the whole group. This helps the members of the group become more interdependent, since group members can answer many of their questions themselves rather than relying on the teacher.

If you are the **Recorder**, your job is to . . .

- Keep track of the thinking of the group. Be ready to answer how the group approached the problem. What strategy did the group use to solve the problem?
- Record the work of the group. Be organized and clear.
- Ask, "Is there anything else we need to include?"

If you are the **Team Captain**, your job is to . . .

- Make sure that everyone in your group can explain to the class the solution and the strategies used to solve the problem.
- Ask each member of your group, "How would you explain what we did to get this answer?" "What questions do you have?"
- Check the group's solution by asking, "Does our answer make sense?"
- Take on any role if one member of your group is absent.

MANAGING THE CARDS IN YOUR CLASSROOM

Like any other classroom materials, you'll need to manage your Common Core Collaborative Cards. It is essential to group the cards by shared answer and domain after each use. Since the cards are designed to place students in groups of four and since class size will vary, this end-of-activity organizational task will make it easier to distribute the cards the next time you use them. Here are some suggestions for organizing the cards after each use:

- As you collect the cards from each student group, place a rubber band around each group of four cards with the same answer and domain before storing.
- After the activity, collect the cards from the class in any order and designate a student to organize the cards into groups of four according to the answer.

WHAT THE RESEARCH SAYS

Research on the effectiveness of collaborative learning abounds. For more information on the research that informs this product, as well as a complete list of bibliographic references and suggestions for further reading, please visit didax.com/cccc.

COMMON CORE STATE STANDARDS – MATHEMATICAL PRACTICES

The Common Core State Standards define what mathematically proficient students know and are able to demonstrate. Combining the process standards from NCTM's Principles and Standards for School Mathematics with the definition of mathematical proficiency from Kilpatrick, Swafford, and Findell's *Adding It Up: Helping Children Learn Mathematics*, the Common Core Standards present the Mathematical Practices.

These practices focus on the specific actions taken by students who are mathematically proficient.

The eight mathematical practices are:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

(*Common Core State Standards for Mathematics*, 2010, pp. 6–8)

The authors of the Common Core carefully chose to begin the mathematical practices with problem solving. "Problem solving is not only a goal of learning mathematics but also a major means of doing so" (NCTM, 2000, p. 52). Students who are engaged in solving meaningful tasks are in the process of building their understanding. They are making connections, constructing arguments, analyzing approaches, looking for patterns, and reflecting on their thinking. These students are learning mathematics, and they have opportunities to exhibit the eight mathematical practices.

The Collaborative Cards provide students with opportunities to develop proficiency in the eight mathematical practices. Students solve problems, discuss strategies, and reason mathematically (Mathematical Practices 1–3). They work with patterns and apply them in various contexts (Mathematical Practices 7–8). They determine whether to calculate problems mentally or use paper and pencil (Mathematical Practice 5). By attending to the use of appropriate vocabulary and the accuracy of their responses, they are attending to precision (Mathematical Practice 6). They use equations to model problem situations (Mathematical Practice 4).

The Collaborative Cards provide teachers with insights into what individual students truly understand. As they apply their knowledge in new contexts, students use what they know. As one fifth-grade teacher in Grafton, Massachusetts stated, "I gained insights into my students' misconceptions. These cards are an easy way to learn about students' strengths."

OPERATIONS AND ALGEBRAIC THINKING (3.OA)

The Algebraic Thinking deck focuses on the Grade 3 OA standards laid out on page 23 of the Common Core State Standards for Mathematics (2010).

This deck of cards presents opportunities for students to work with multiple representations of quantities, solve problems, investigate patterns, and distinguish among the four operations and their applications.

In some cases, students may not have studied a particular topic. In the process of finding their group, many students learn from each other. This opportunity initiates thinking upon which students can build in the future.

As mentioned earlier in the guide, students build their understanding through problem solving. As students apply the skills they truly understand to solve meaningful tasks, teachers gain insights into what students have mastered and can plan lessons for individuals and small groups based those insights. For grade-level Operations and Algebraic Thinking tasks, please visit didax.com/cccc.

Here is one group of four cards from the Grade 3 Algebraic Thinking deck.

With this set of four cards, students work with contexts involving both multiplication and division. They also work with equal groups on a number line, which provides them with an opportunity to discuss how they interpret this number line. Students also work symbolically as they solve the equation that has the same answer as the other cards.

The Common Core Standards present the necessary skills developmentally. Students are expected to know

the standards from a previous grade level; consequently, these cards offer opportunities to review previous expectations and then proceed to problems within the domain at the current grade level. For example, in Grade 3 students are developing an intuitive understanding of the meaning of multiplication and division. The deck helps students work in a familiar context to see the relationship between these two operations. Students experience these operations in the context of their work with number lines, arrays, and making sense of the numbers involved. The practical contexts provided by their work in Grade 3 help prepare students for their work in Grade 4, which includes solving two-step word problems using drawings, arrays, and equations, and distinguishing between additive and multiplicative reasoning.

Answers for the Grade 3 Algebraic Thinking deck are provided on pages 12–14 of this guide.

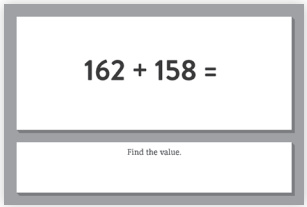
NUMBER AND OPERATIONS IN BASE TEN (3.NBT)

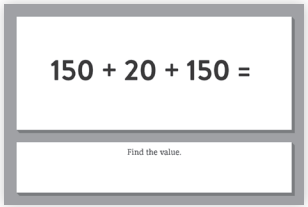
The Base Ten deck focuses on the Grade 3 NBT standards laid out on page 24 of the Common Core State Standards for Mathematics.

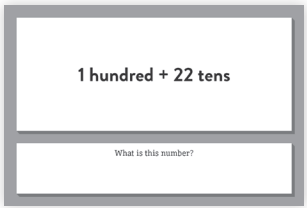
Each group of four cards presents a different representation of a specific quantity. Students solve the question and then look for three other students who have the same solution. When students find their group, they must collaborate to justify why they are indeed members of the same group. The Grade 3 Base Ten deck presents opportunities for students to review skills, use place value in varying forms, and challenge their thinking in a supportive environment. Teachers may have students discuss their cards, or they may decide to move directly into the lesson for the day.

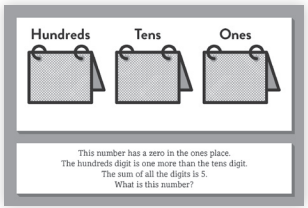
As mentioned earlier in the guide, students build their understanding through problem solving. As students apply the skills they truly understand to solve meaningful tasks, teachers gain insights into what students have mastered and can plan lessons for individuals and small groups based those insights.

Here is one group of four cards from the Grade 3 Base Ten deck that all have the same answer, 320.









This group of cards provides opportunities for students to look at place value and use strategies to mentally calculate the sum (320). After students have identified their team, allow time for each team to discuss how they solved the problem and share their strategies. Students may also discuss what connections they see among the four cards. Ask: What are the patterns demonstrated in this set of four cards?

As in the other domains, the Base Ten cards offer opportunities both to review previous expectations and to prepare students for work within the domain at the the next grade level. For example, the work in Grade 3 focusing on using place value to add and subtract values enables students to understand the traditional algorithms that are expected in Grade 4.

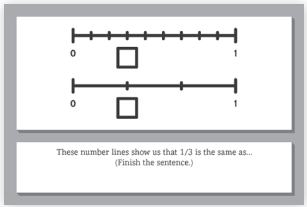
Answers for the Grade 3 Base Ten deck are provided on pages 15–17 of this guide.

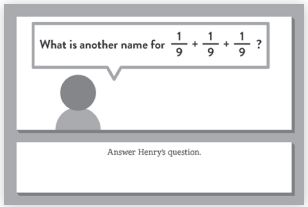
NUMBER AND OPERATIONS – FRACTIONS (3.NF)

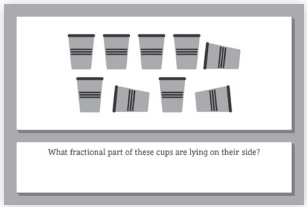
The Fractions deck of cards focuses on the Grade 3 NF standards laid out on page 24 of the Common Core State Standards for Mathematics. This deck presents opportunities for students to connect partitioning shapes with unit fractions (fractions having a numerator of 1), view fractions as distances on a number line, and work with the idea that equivalent fractions represent the same point on a number line. The Common Core emphasizes the use of the number line. Just as whole numbers can be represented as locations on a number line, so can fractions. Thus, the number line serves as a tool to help students realize that fractions are indeed part of our number system.

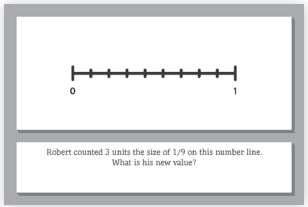
The Common Core begins the formal study of fractions in Grade 3 by emphasizing unit fractions coupled with the knowledge of the number of parts needed to make a whole. Given a rectangle partitioned into four equal sections, one such section can be represented as 1/4 and 4 sections create the whole. Consequently, students do not need to consider "proper and improper" fractions at this time. Student can interpret 7/3 as 7 parts, when the whole is composed of 3 equal parts.

Here are four cards from the Grade 3 Fractions deck that all have the same answer, 3/9:









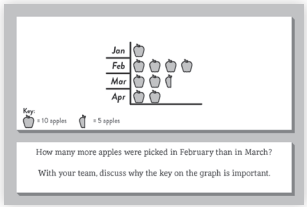
Students who have these cards are asked to connect fractions as parts of a whole to their location on a number line. The first card in this group of four illustrates fraction equivalence by showing that 1/3 and 3/9 are located at the same point on number lines of equal length. Consider extending the task by presenting two number lines that are not of equal length, with each showing 1/4. Students should recognize that the whole must be the same for the fractional parts to be equivalent.

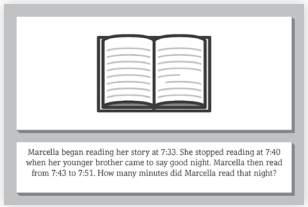
Answers for the Grade 3 Fractions deck are provided on pages 18–20 of this guide.

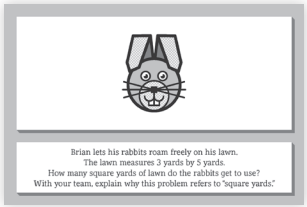
MEASUREMENT AND DATA (3.MD)

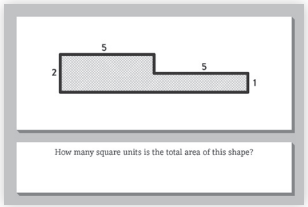
The Measurement and Data deck focuses on the Grade 3 MD standards, as presented in the Common Core document on pages 24–25. This deck presents opportunities for students to work with units of measure and time as well as graphical representations of data. After focusing on units of length in Grade 2, third-grade students work with perimeter and area as well as liquid volumes and masses of objects. Students also solve problems involving time by representing the problem on a number line.

Here are four cards from the Grade 3 deck that all have the same answer, 15.









In this set of four cards, students interpret a graph, work with elapsed time, and focus on area. On two cards in this set, students are also asked to answer specific questions once they have found their group and verified that they all have the same answer.

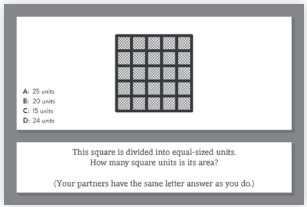
As in other domains, the Measurement and Data cards offer opportunities both to review previous expectations and to prepare students for work within the domain at the next grade level. For example, in Grade 3 students work with area and perimeter by drawing on an intuitive understanding of the meaning of multiplication and division. In Grade 4, students extend their understanding of perimeter and area to work with the appropriate formulas and to represent data on a line plot.

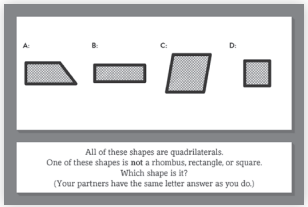
Answers for the Grade 3 Measurement and Data deck are provided on pages 21–23 of this guide.

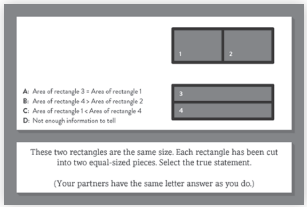
GEOMETRY (3.G)

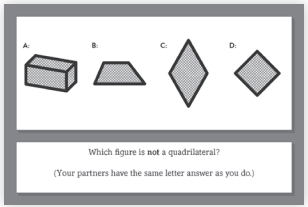
The Geometry deck focuses on the Grade 3 Geometry standards as well as the Geometric Measurement standards within the Measurement and Data domain, as presented in the Common Core State Standards on pages 25–26. In Grades 1 and 2, students worked with two- and three-dimensional shapes and partitioned rectangles and circles into two, three, and four equal parts. In Grade 3, students focus on the attributes of two-dimensional geometric shapes and work with square units and area.

Here is one group of four cards in the Grade 3 deck that all have the same answer, A.









In this set of four cards, students work with area and the attributes of quadrilaterals. On the third card students are presented with identical rectangles that have been bisected in two different ways. This question presents a common misconception that students may embrace. Some students think that if two shapes looks different, they must have different areas.

Answers for the Grade 3 Geometry deck are provided on pages 24–26 of this guide.

VISIT DIDAX.COM/CCCC ...

For the following important resources:

- A complete bibliography and links to research that informed this product
- A complete correlation to the Common Core State Standards for each grade-level deck
- Meaningful tasks to be used with each domain and at each grade level (once students have used the Common Core Collaborative Cards to form their groups)

ADDITIONAL MEANINGFUL TASKS

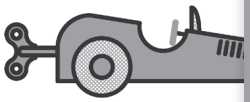
One of the best sources of meaningful tasks related to the Common Core is the book *NCSM: Great Tasks for Mathematics (K–5)* by Connie Schrock, Kit Norris, David K. Pugalee, Richard Seitz, and Fred Hollingshead. (National Council of Supervisors of Mathematics, 2013, ISBN: 978-0-9890765-0-0.)

ALGEBRAIC THINKING GROUPINGS

ANSWER
6

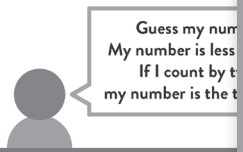
Juan has 5 bags of apples. He knows he has 30 ap

How many apples are in each bag?



Peter is organizing his toy car collect
He has 42 cars, and he is placing them in 7 row

How many cars will be in each row



What is Thomasina's number?

$6 + 8 \div 2 - 4$

Peter says the answer is 3. Sara thinks the answer is 6.
Which answer is correct?

Be ready to explain your thinking to your group.

ANSWER
30

Harriet purchased 3 boxes of candy
Harriet's mother also purchased 3 boxes o
Each box contains 5 candy bars.
How many candy bars do they have altog

A classroom has 6 rows of chairs, with 5 chairs

How many chairs are in the classroo

$3 \times 5 \times 2$

Marion solves the problem in the order given. Georg
What answer do they get?

Explain to your partners why George wanted to

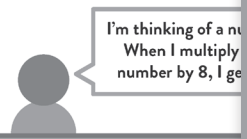
Pedro has 300 baseball cards. He wants to sort his cards into piles. Each pile should have 10 cards.

How many piles will Pedro have?

ANSWER
7

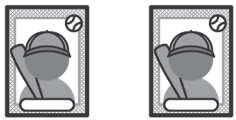
How many groups of 4 do you need to m

Discuss with partners how the number line helped y



What is this number?

Margo wants to arrange the chairs in the cafeteria
She has 56 chairs. How many chairs will be i



Sheldon has 700 baseball cards. He wants to put them in bags. Each bag should have 100 cards.

How many bags will Sheldon need?

ALGEBRAIC THINKING GROUPINGS

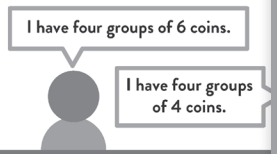
4(3) + 4(7)

What is the solution?

Discuss with your group an easy way to solve

How many x's are there?
(Hint: You do not have to count each

Explain to your group what strategy you



How many coins do the girls have altog

Is there an easier way than counting all th
Discuss with your group.

How many stars are there?

Find the total number of stars without counting all of them.

ANSWER
40

63 ÷ ? = 7

What is the value for "?" that makes this state

Today we are going on a class trip to the Pythag
We have 63 students, and we have rented

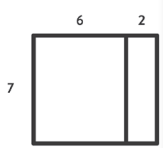
How many students will be in each v

Find the answer to François' challen

8 × □ = 72

What number goes in the box to make the statement true?

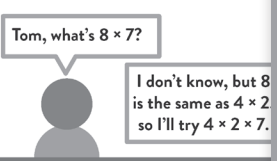
ANSWER
9



Ms. Fleur is planting roses and sunflowers in
The space she has for roses measures 6 yards wide
The space she has for sunflowers measures 2 yards
long. How many total square yards does she have

Kathy wants to find the total number of stars, but sh
count each one. She thinks counting is too n

Help Kathy find the number of stars without coun



Find the answer. Did you get the same answer usin

Be ready to explain your thinking to you

6 × 7 + 2 × 7 = ?

Find the value of "?"

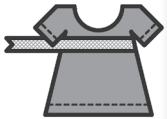
With your group, write another problem that has the same answer.

ANSWER
56

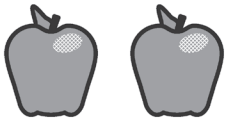
Correlation to the Common Core State Standards for each group of 4 cards can be found at didax.com/cccc.

ALGEBRAIC THINKING GROUPINGS

ANSWER 8



Marie wants to put ribbon on the dresses she has m
She has 32 inches of ribbon. Each dress needs 4 i
How many dresses will she be able to decorate

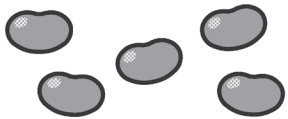


There are 4 rows of apple trees in the or
If there are 32 trees altogether, how many trees mus

$10 \times 8 \div 10$

Trey says to his friend, "Here is a mental mat
Do it as quickly as you can."

Find the answer and be ready to explain you

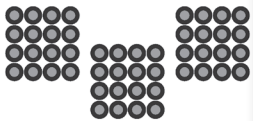


Jennifer has 320 jellybeans.
She is placing them in bags for her friends.
If she wants each bag to hold 40 jellybeans,
how many bags will she need?

ANSWER 64

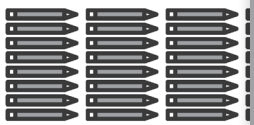
How many jellybeans are there altoget
Write a number sentence to show your a

Discuss with your group why each of you has th



How many dots are there altogethe
Write a number sentence to show your a

Discuss with your group why each of you has th



How many pencils will you have if you double

Discuss with your group why each of you has th

$4 \times 2 \times 4 \times 2$

Find the value.

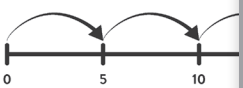
Discuss with your group why each of you has the same answer.

ANSWER 20

6×4

Find the product. What is the nearest ten to th

Your group has the same answer.



On the fourth jump, what number will the arrow

This number line shows a multiplicatio
Which one is it? Discuss with your gr

$10 \times 2 \times 10 \div$

What is this value?

With your group, find a quick way to do this i

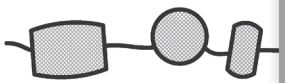
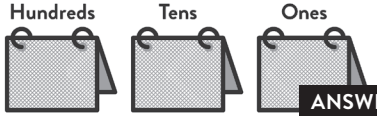
$2 \times 2 \times 5$

Find the value.

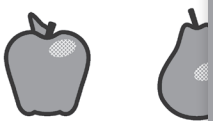
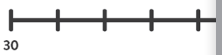
BASE TEN GROUPINGS

162 + 158 =	150 + 20 + 15	1 hundred + 22 te	
Find the value.	Find the value.	What is this number?	This number has a zero in the ones place. The hundreds digit is one more than the tens digit. The sum of all the digits is 5. What is this number?

ANSWER
320

5 hundreds + 20 tens + 106 o		7 hundreds + 106 ones	
What is this number?	Lavinia has 900 beads. She gave her friend Becky 94 bead How many beads does Lavinia have l	What is this number?	This number has a zero in the tens place. The ones digit is two less than the hundreds digit. The sum of all the digits is 14. What is this number?

ANSWER
806

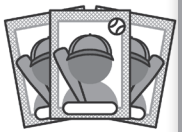
	6 × 10 is the same as 10 + 10 + 10 + 10 + 1(		
Johnny Appleseed collected 36 appl Patty Pearson found 24 pears. How many pieces of fruit did they have to	What number is this?	What value is halfway between 50 and 70 on thi	What number is this?

ANSWER
60

Correlation to the Common Core State Standards for each group of 4 cards can be found at didax.com/cccc.

BASE TEN GROUPINGS

ANSWER
265



Peter collects baseball cards. He currently ha
He gave his friend Alexia some of his
Peter now has 217 baseball cards.
How many cards did he give to Alex

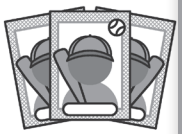
Henry's mother went to the bank and asked to take
account. The bank gave her 26 ten-dollar bills and
How much money did Henry's mother take from

1 hundred + 16 tens +

Can you think of a different way to write thi

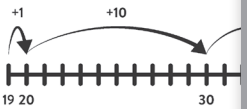
My mother had 176 bite-size candies.
My Dad gave her 89 more candies.
How many does she have now?

ANSWER
16

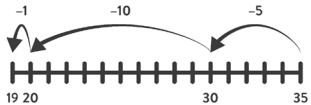


Raul has 35 baseball cards. He gave 19 to
How many baseball cards does he have

What is Juanita's answer?
Explain to your group how Juanita got the



Peter thinks, "I can subtract 19 from
It's easy when I use a number line." What answer
(Be ready to share his strategy with your



Forrest thinks, "I can subtract 19 from 35.
It's easy when I use a number line." What answer does Forrest get?
(Be ready to share his strategy with your team.)

ANSWER
720

5 × 4 × 3 × 4 ×

Find the product.
Which of your team members has the easiest pr
Explain your thinking.

10 × 8 × 9 =

Find the product.
Which of your team members has the easiest pr
Explain your thinking.

40 × 2 × 9 =

Find the product.
Which of your team members has the easiest pr
Explain your thinking.

20 × 4 × 3 × 3 =

Find the product.
Which of your team members has the easiest problem to solve?
Explain your thinking.

BASE TEN GROUPINGS

$8 \times 15 \times 2 =$

Find the product.
Which of your team members has the easiest pr
Explain your thinking.

$3 \times 10 \times 4 \times 2$

Find the product.
Which of your team members has the easiest pr
Explain your thinking.

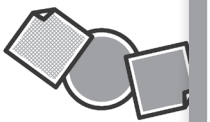
$4 \times 5 \times 3 \times 4$

Find the product.
Which of your team members has the easiest pr
Explain your thinking.

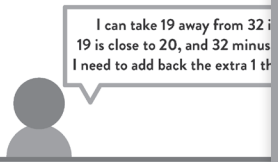
$3 \times 20 \times 4 =$

Find the product.
Which of your team members has the easiest problem to solve?
Explain your thinking.

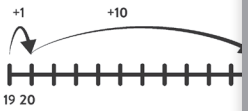
ANSWER
240



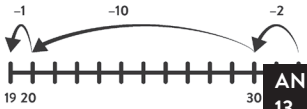
Sherry's mother gave her some stickers. She now
If Sherry had 19 stickers in the beginning, how m
Sherry's mother give to her?



What is Goldie's answer?
Explain to your group how Goldie got the

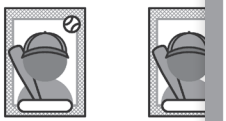


Cal thinks he can find the answer to 32 – 19 using
What answer does he get?
Explain Cal's strategy to your team



Jen thinks she can find the answer to 32 – 19 using the number line.
What answer does she get?
Explain Jen's strategy to your team.

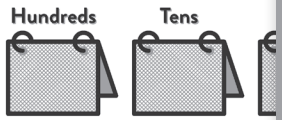
ANSWER
13



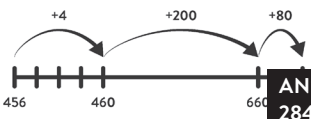
Desean has 456 baseball cards of American Le
The rest are of National League play
Desean has 740 cards altogether.
How many cards represent National League

4 hundreds + 5 tens +

What do you need to add to this number to



This number has three digits. The ones (units) digit
the hundreds digit. The tens digit is 4 more than the
The hundreds digit is 2. What is this nu



Chris knows that he can use a number line to add numbers together.
Chris begins at 456.
How much does he add on this number line to make 740?

ANSWER
284

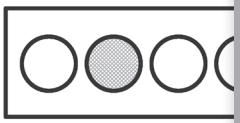
Correlation to the Common Core State Standards for each group of 4 cards can be found at didax.com/cccc.

FRACTIONS GROUPINGS

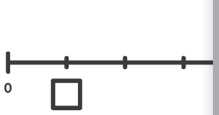
ANSWER
1/4

one-fourth

What is this value written as a fracti



What fraction represents the shaded circle



What fraction should go in the box

What part of the circle is not shaded?

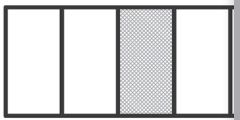
(Give your answer as a fraction.)

ANSWER
1/5

There are 5 marbles in the bag.
Susie reached in and took one marble from
What fraction represents the amount Susie took

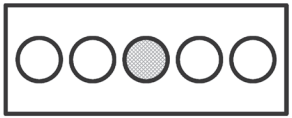
What size is each unit on this number

(Give your answer as a fraction.)



What part of this rectangle is shade

(Give your answer as a fraction.)



What fraction represents the shaded circle in the set?

ANSWER
1/3

What unit fraction is represented by the shade
Your team has an equivalent fractio

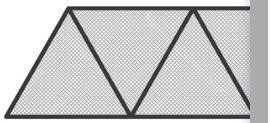
Sharon has three kittens. Two are black and c
What fraction of the kittens is whit

What fraction should go in the box

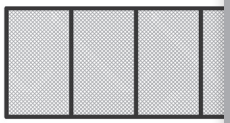
What part of the rectangle is shaded?

(Give your answer as a fraction.)

FRACTIONS GROUPINGS

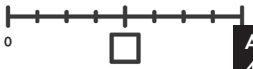


This shape has 4 triangles.
All of them are shaded.
What fraction represents the shaded p



What fraction of this rectangle is shad

A box contained four chocolates.
Henry ate the entire box of chocolat
What fraction represents how much Hen



What fraction should go in the box?

ANSWER
4/4

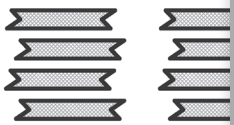
---

one-eighth

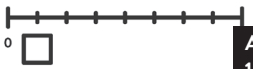
What is this value written as a fracti

How much of the rectangle is shade

(Give your answer as a fraction.)



Mrs. Wilson cut a long ribbon into 8 p
She gave one of the pieces to Ramo
What part of the ribbon did she give to R



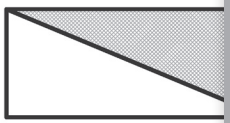
What fraction should be placed in the box?

ANSWER
1/8

---

one-half

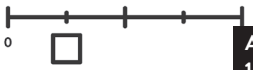
What is this value written as a fracti



How much of the rectangle is shade

(Give your answer as a fraction.)

My brother shared his pizza with m
The pizza was cut into 6 slices, and he ga
How much of the pizza did my brother giv
(Give your answer as a unit fractio



What fraction should go in this box?

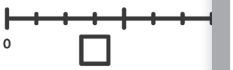
ANSWER
1/2

Correlation to the Common Core State Standards for each group of 4 cards can be found at didax.com/cccc.

FRACTIONS GROUPINGS

ANSWER
3/4

How much of this rectangle would we
if we combined 3 units the size of 1/4
(Give your answer as a fraction.)



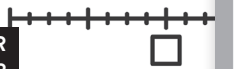
What fraction should be placed in the

three-fourth

What is this value written as a fracti

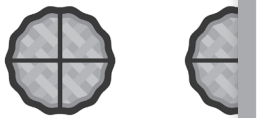
$$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} =$$

Solve this equation.

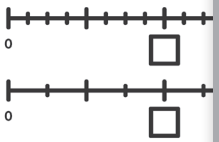


ANSWER
8/4 or 2

What fraction goes in this box?

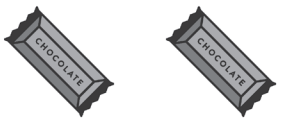


How many whole pies are there?
How can we write this as a fractior

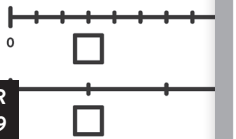


What fractions go in the boxes? Are these fraction
How do you know?

Your partners have the values in these

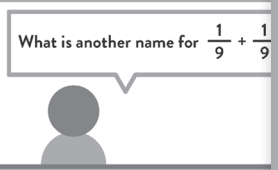


Mom has two candy bars. She says that I can have them both!
How can we write this as a fraction?



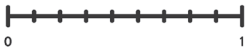
ANSWER
3/9

These number lines show us that 1/3 is the
(Finish the sentence.)



Answer Henry's question.

What fractional part of these cups are lying o



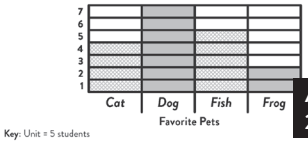
Robert counted 3 units the size of 1/9 on this number line.
What is his new value?

MEASUREMENT AND DATA GROUPINGS

Harriet woke up at 7:30 AM. She dressed and had
This took her 35 minutes. She needs to be at the bu
How many minutes does she have to get to the

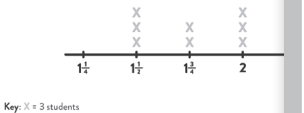
Alijah has three jobs to do in one hou
He wants to spend the same amount of time o
How many minutes will Alijah have to complet

Marsha placed a rock in a large bucket of
How many liters did the water rise
when she placed her rock in the bucke



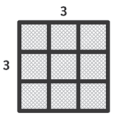
How many students prefer cats?

ANSWER
20

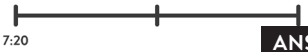


Some students measured the length of their poi
They recorded their results in a line pl
How many students have fingers that measured

Mary has 36 inches of string.
She wants to make 4 equal pieces with this
How many inches long will each piece of str

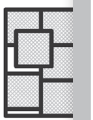


Francine is designing a rug for her dollh
How many square units will her rug cov



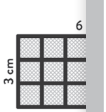
Val started to read her book at 7:20. She stopped reading at 7:29.
How many minutes did Val read?

ANSWER
9



A: Place more square units on the rectangle.
B: Remove some square units.
C: Adjust the overlapping square units to fit in the rectangle.
D: Peter did not make a mistake.

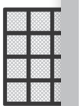
Peter placed square units in this rectangle to mea
His friend told him he made a mistak
What could Peter do to fix his mistake
(Your partners have the same letter answer a



A: He added all of the sides.
B: He added 3 to 6 and then doubled that amount.
C: He multiplied the length of the two given sides.
D: He guessed the area was less than 20.

Caleb said the area of this rectangle is 18
How did he find the area?

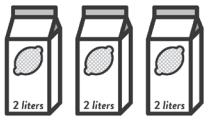
(Your partners have the same letter answer a



A: Katie is correct.
B: In a 5 × 4 rectangle, the area is 20 square units and the perimeter is 19.
C: In a 4 × 4 square, the area and perimeter are the same.
D: In a 3 × 3 square, the area and perimeter are the same.

Katie thought that a rectangle could not have an are
with the same number of units. Which answe

(Your partners have the same letter answer a



A: 8 glasses
B: 12 glasses
C: 24 glasses
D: 16 glasses

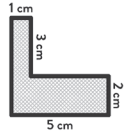
Kingsley bought 6 liters of lemonade for her party.
If each liter fills 4 glasses, how many glasses of lemonade will Kingsley have for her party?
(Your partners have the same letter answer as you do.)

ANSWER
C

Correlation to the Common Core State Standards for each group of 4 cards can be found at didax.com/cccc.

MEASUREMENT AND DATA GROUPINGS

ANSWER
B



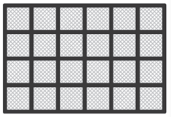
Arnie says he can find the area of this shape by th
2 rectangles. How did Arnie find the ar

(Your partners have the same letter answer a

A: 10 grams
B: 1 gram
C: 20 grams
D: 15 grams

How much do you think this paper clip weighs? Selec

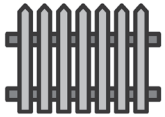
(Your partners have the same letter answer a



A: 2 × 6 + 2 × 6
B: 3 × 6 + 3 × 6
C: 4 × 2 + 4 × 4
D: 3 × 6 + 1 × 6

Alex said, "I can think about this rectangle in sn
That will help me find the area." How did Alex **not**

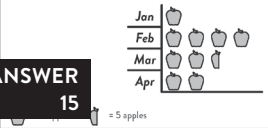
(Your partners have the same letter answer a



A: 10 feet by 2 feet
B: 6 feet by 6 feet
C: 7 feet by 5 feet
D: 8 feet by 4 feet

Jayla is building a fence around the yard for her puppy.
She has 24 feet of fencing. Which size yard
will give her puppy the biggest area to play in?
(Your partners have the same letter answer as you do.)

ANSWER
15



How many more apples were picked in February th

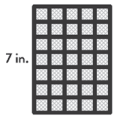
With your team, discuss why the key on the graph

Marcella began reading her story at 7:33. She stoppe
when her younger brother came to say good night. M
from 7:43 to 7:51. How many minutes did Marcella r

Brian lets his rabbits roam freely on his l
The lawn measures 3 yards by 5 yard
How many square yards of lawn do the rabbits
With your team, explain why this problem refers to

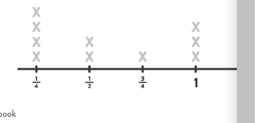
How many square units is the total area of this shape?

ANSWER
5

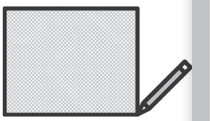


Find the width of this rectangle.

Be ready to explain to your team how you found

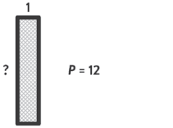


Jeremy piled up some of the books shown in this g
all the books that were ¼ inch thick, 1 inch thick, ar
How tall was Jeremy's stack of books?



Jill drew a rectangle. It has an area of 20 squa
One side is 4 inches long. What is the length of th

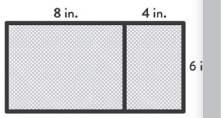
Be ready to share your thinking with your



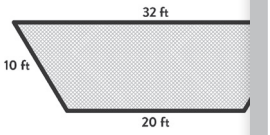
Pedro made a rectangle. It has a perimeter of 12 inches.
If Pedro's rectangle has a width of 1 inch, what is its length?

Be ready to share your thinking with your team.

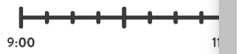
MEASUREMENT AND DATA GROUPINGS



Two rectangles were pushed together to make a la
How many square inches is the area of the new
Share with your team how you found the



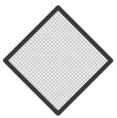
Maria wants to place a border around her flow
How many feet will the length of her borde



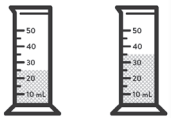
On Saturday, Caleb left his house at 9:10 and went
He left the library at 9:45 and went to get ice cream
Caleb walked home, which took him 22 minutes. W
number of minutes that Caleb was away from h

A rectangle has side lengths of 2 and 36. Harry wanted to find its area.
Multiplying 2 by 36 was hard for him. He decided to use 4 by 18
instead. What is the area of this rectangle?

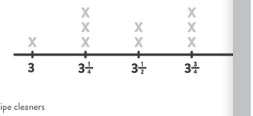
ANSWER
72



The perimeter of this square is 40 inch
How many inches is the length of a sid



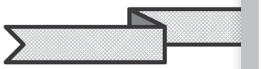
Rose put a rock in the beaker. How many milliliters d



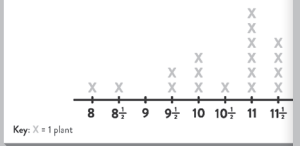
Peter's group measured the lengths of pipe c
How many pipe cleaners measured 3¾ c
(Why is the key important when working with
Discuss with your team.)

Renee wanted to take $109 from her bank account.
The bank did not have any $100 bills.
The bank gave Renee some $10 bills and nine $1 dollar bills instead.
How many $10 bills did the bank give to Renee?

ANSWER
10



Destiny wants to put ribbon around her holi
She has 60 inches of ribbon. Each gift uses 5 inch
How many gifts can she put ribbon or



The third-graders planted lima beans in scie
The graph shows how many inches the plan
How many plants grew 11 or more inch

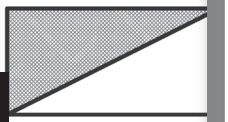
Sarah is confused. The two rectangles look c
but their area is the same. How many square units is
(Why do these two rectangles have the sam
Explain to your team.)

Malik says you can count the number of square units
in the rectangle to find the area. What is the area in square units?
(Is there another way to find the area of this rectangle?
Discuss with your team.)

ANSWER
12

Correlation to the Common Core State Standards for each group of 4 cards can be found at didax.com/cccc.

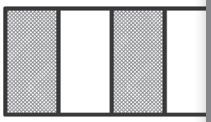
GEOMETRY GROUPINGS



ANSWER
1/2

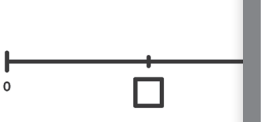
This rectangle equals one whole. How much of the rec

(Give your answer as a fraction.)



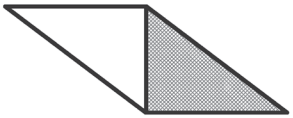
The large rectangle equals one whole
How much of the large rectangle is shad

(Give your answer as a fraction.)



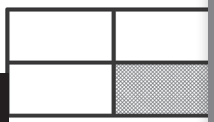
The number line is divided into two equal se
What value goes in the box?

(Give your answer as a fraction.)



This parallelogram equals one whole. How much of it is shaded?

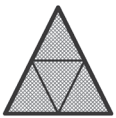
(Give your answer as a fraction.)



ANSWER
1/4

The large rectangle equals one whole
How much of it is shaded?

(Give your answer as a fraction.)

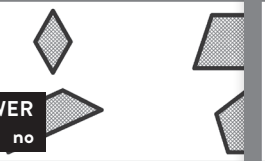


The large triangle equals one whole.
The smaller triangles inside it are equal i
How much of the whole is one of the small t
(Give your answer as a fraction.)

Dennis drew a number line to show how much of the
What fraction goes in the box?

What part of the circle is shaded?

(Give your answer as a fraction.)



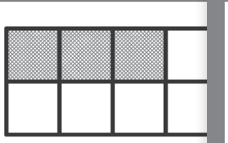
ANSWER
no

Darrell thinks that all of these shapes are quadrilatera

(If you agree, the answer is "yes." If you disagree, the

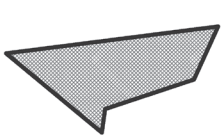
Penelope says that none of these shapes is a qu
Do you agree?

(If you agree, the answer is "yes." If you disagree, the



Pierre looked at this shape and said, "The shaded pa
Do you agree?

(If you agree, the answer is "yes." If you disagree, the



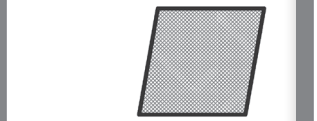
Connie drew this figure. She says it's a quadrilateral. Do you agree?

(If you agree, the answer is "yes." If you disagree, the answer is "no.")

GEOMETRY GROUPINGS

Henry says that both of these pictures show ⅓. D

(If you agree, the answer is "yes." If you disagree, the

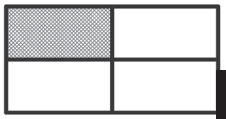


Maleika drew this shape.
She said, "This shape is not a rectangle or a square."

(If you agree, the answer is "yes." If you disagree, the

Gracie says that these two pictures show the sa
Do you agree?

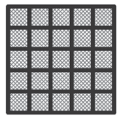
(If you agree, the answer is "yes." If you disagree, the



Malik said, "I see that four one-fourths make one whole." Do you agree?

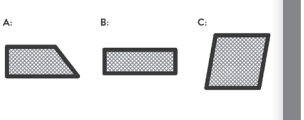
(If you agree, the answer is "yes." If you disagree, the answer is "no.")

ANSWER
yes



This square is divided into equal-sized u
How many square units is its area?

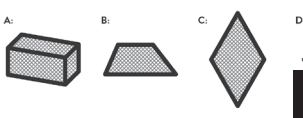
(Your partners have the same letter answer as



All of these shapes are quadrilaterals
One of these shapes is **not** a rhombus, rectangle
Which shape is it?
(Your partners have the same letter answer as

These two rectangles are the same size. Each rectanc
into two equal-sized pieces. Select the true st

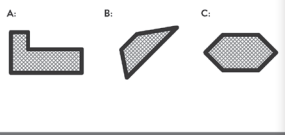
(Your partners have the same letter answer as



Which figure is **not** a quadrilateral?

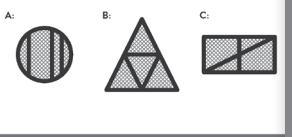
(Your partners have the same letter answer as you do.)

ANSWER
A



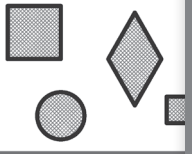
Which figure is a quadrilateral?

(Your partners have the same letter answer as



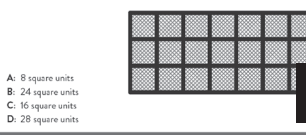
Which shape has four equal parts?

(Your partners have the same letter answer as



Which shape does **not** have at least two equa

(Your partners have the same letter answer as



What is the area of this rectangle?

(Your partners have the same letter answer as you do.)

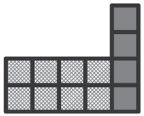
ANSWER
B

Correlation to the Common Core State Standards for each group of 4 cards can be found at didax.com/cccc.

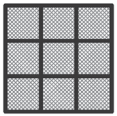
GEOMETRY GROUPINGS

Correlation to the Common Core State Standards for each group of 4 cards can be found at didax.com/cccc.

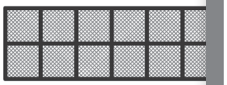
ANSWER 12



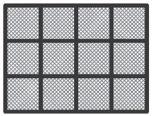
These two rectangles are divided into equal-sized
What is the total area of the two shapes in squ



The area of this figure is 9 square inch
How many square inches is its perimet

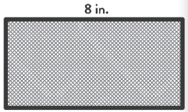


Jo wants to find the area of this rectang
She thinks the best way is to multiply the side
What answer does she get?
(Would she get the same answer if she counted the



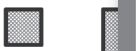
Andrew wants to find the area of this rectangle.
He thinks the best way is to count the unit squares inside it.
What answer does he get?
(Would he get the same answer if he multiplied the side lengths?)

ANSWER C



Rafe measured a rectangle. What is the width of t

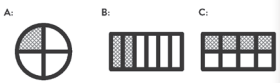
(Your partners have the same letter answer as



A: Both are quadrilaterals.
B: Both have opposite sides that are parallel.
C: Both are open figures.
D: Both have opposite sides that are the same length.

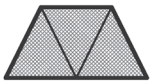
Select the statement that is **not** true about squares

(Your partners have the same letter answer as



Each of these shapes is divided into equal-siz
Which shape has one-half shaded?

(Your partners have the same letter answer as

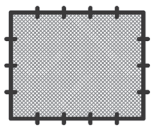


A: The big figure is a quadrilateral.
B: The big figure is a trapezoid.
C: The big figure is a rectangle.
D: Each triangle is one-third the size of the big figure.

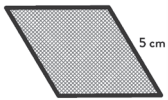
The triangles inside the figure are equal in size.
Which statement is **not** true?

(Your partners have the same letter answer as you do.)

ANSWER 20

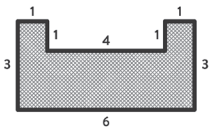


How many square units are contained in this



How many centimeters is the perimeter of this

The area of each small triangle is 5 square
What is the area of the square in square u



What is the perimeter of this shape?

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GRADE 3
TEACHER GUIDE

Practice and reinforce the content from the Common Core State Standards with these innovative activity cards.

Created using the five domains from the Common Core State Standards, these cards actively engage students in problem solving and promote mathematical discussion. Students solve the question on their individual card and then look for others who have the same solution. The four students holding cards with the same answer form a group; the back of their cards show the role that each student will play as the group works on the next task. Based on the most recent research about the effectiveness of collaborative learning, and in accordance with the Common Core Mathematical Practices, these card sets can be used repeatedly to group students for an upcoming unit or problem-solving lesson. Cards can also be used for small-group instruction or as an independent activity. Each grade-level set includes 36 durable, two-color cards per domain for a total of 180 cards. Teacher Guide includes suggestions for classroom use, answers, and access to website with additional tasks and resources.

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