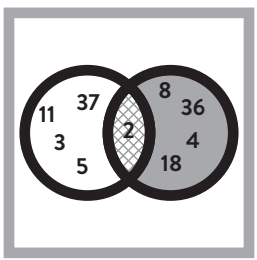
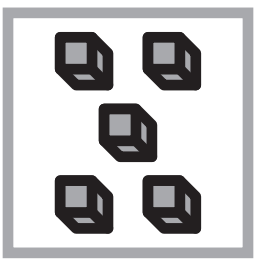
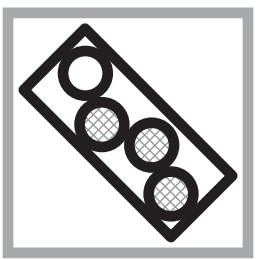
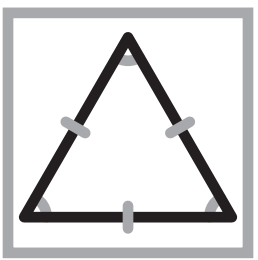
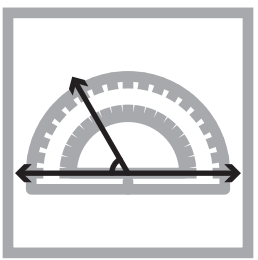
COMMON CORE COLLABORATIVE CARDS

Grade 4

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:

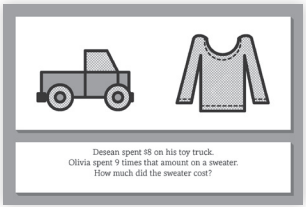
- As an activator for the day's lesson
- To review previous content
- As a learning center activity
- For students' independent practice

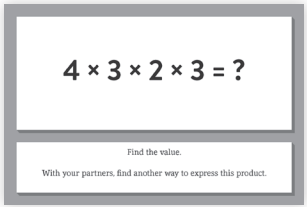
Common Core Collaborative Cards provide convenient and motivating ways to place students in collaborative teams for an upcoming unit or problem-solving lesson.

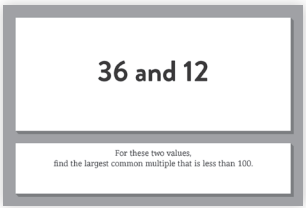
The Common Core Collaborative Cards series consists of five decks of cards per box, with each deck focusing on one domain of the Common Core at that grade level. The five domains are Operations and Algebraic Thinking, Number and Operations in Base Ten, Fractions, Measurement and Data, and Geometry. Each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

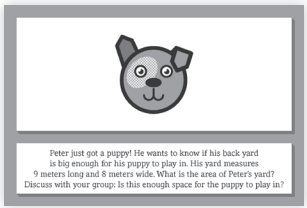
Teachers using these decks have commented that they have been able to observe what their students understand as well as identify their misconceptions. Teachers have also noted that their students began to rely on each other more instead of seeking out the teacher to answer their questions.

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, 72, 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).

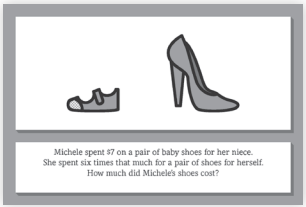
The Collaborative Cards provide teachers with insights into what individual students truly understand. As they apply their knowledge in new contexts, students use what they know. As one fifth-grade teacher in Grafton, Massachusetts stated, "I gained insights into my students' misconceptions. These cards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

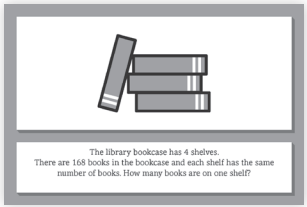
OPERATIONS AND ALGEBRAIC THINKING (4.OA)

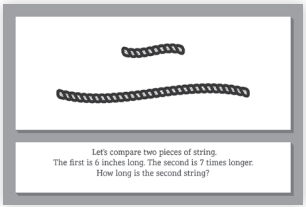
The Algebraic Thinking deck focuses on the Grade 4 OA standards laid out on page 29 of the Common Core State Standards for Mathematics (2010).

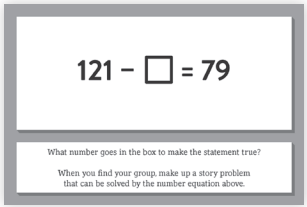
The Grade 4 standards in the Operations and Algebraic Thinking domain require that students distinguish between situations that involve additive reasoning and those that require multiplicative reasoning. Many situations can be solved by either addition or subtraction. For example, "Mary has 3 bags of apples with 6 apples in each bag. How many apples does Mary have?" This can be solved by addition (6 + 6 + 6) or by multiplication (3 × 6). When presented with a problem such as "Tess has purchased a hat for $25. She also bought shoes costing three times that amount. How much did her shoes cost?" students should recognize that multiplication is the most efficient means to find the solution. Students in Grade 4 also explore and extend patterns and work with factors and multiples.

Here is one group of four cards from the Grade 4 Algebraic Thinking deck that all have the same answer, 42:









This set of four cards present opportunities for students to work with multiplication and division in a familiar context. One card asks students to compare the length of two pieces of string and use multiplication to find the actual length of the longer string. Another card asks students to work symbolically to solve an equation.

Answers for the Grade 4 Algebraic Thinking deck are provided on pages 12–14 of this guide.

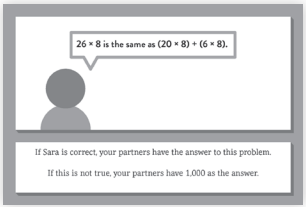
NUMBER AND OPERATIONS IN BASE TEN (4.NBT)

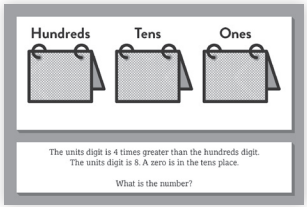
The Base Ten deck focuses on the Grade 4 NBT standards laid out on pages 29–30 of the Common Core State Standards for Mathematics.

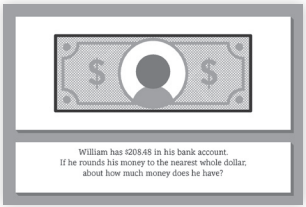
Being able to mentally multiply and divide by 10, 100, and 1000 enables students to work flexibly with numbers and develop estimation skills. Students use these skills to make sense of the traditional algorithms they are expected to master in Grade 5 (multiplication) and Grade 6 (division.)

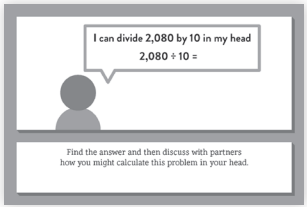
Students in Grade 4 are also expected to use and understand the traditional algorithms for multi-digit addition and subtraction. It is critically important that students have experience using strategies that are based on understanding place value, properties of operations, and the relationship between addition and subtraction.

Here is one group of four cards from the Grade 4 Base Ten deck that all have the same answer, 208:









This group of four cards provides an opportunity for students to consider the distributive property. Sara's statement, 26 × 8 is the same as (20 × 8) + (6 × 8), can stimulate a discussion about why this is true. Students might create other examples and consider ways that this property can be helpful when multiplying quantities.

The problems on the different cards vary in complexity. If a group of students has finished discussing, consider asking the group to exchange their cards with another group that has finished. Each student solves the new card,

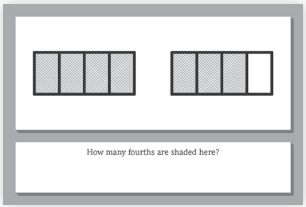
discusses the questions raised within the group, and then shares the group's understandings with the original owners of those cards.

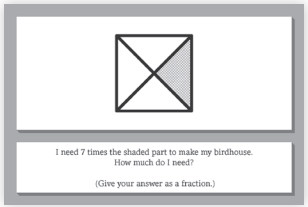
Answers for the Grade 4 Base Ten deck are provided on pages 15–17 of this guide.

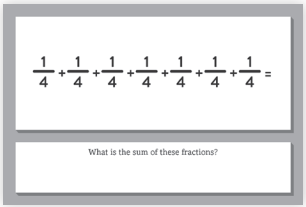
NUMBER AND OPERATIONS – FRACTIONS (4.NF)

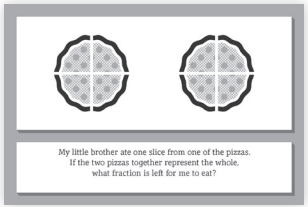
The Fractions deck focuses on the Grade 4 NF standards laid out on pages 30–31 of the Common Core State Standards for Mathematics. In Grade 4, students build on the understanding of unit fractions they gained in Grade 3 by focusing on equivalent fractions. They come to understand that they can create equivalent fractions by multiplying both the numerator and denominator by the same value.

Here is one group of four cards from the Grade 4 Fractions deck:









In Grade 4, students continue to use a variety of models to represent equivalent fractions, such as line diagrams and area models. As seen in the set of four cards preceding, each card has the same answer, 7/4. Students are presented with different representations of this quantity. Their job, after they have found their group, is to determine exactly why each of these representations is equivalent.

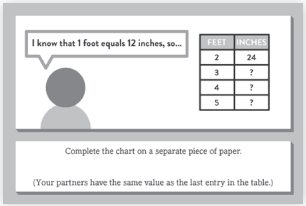
Students in Grade 4 also study the connection between fractions and decimal fractions by focusing on the denominators 10 and 100. They compare two decimals by focusing on the size of the decimal.

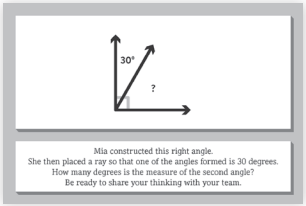
Answers for the Grade 4 Fractions deck are provided on pages 18–20 of this guide.

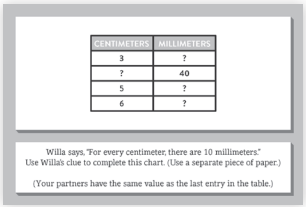
MEASUREMENT AND DATA (4.MD)

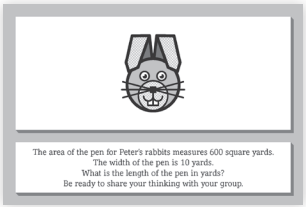
The Measurement and Data deck focuses on the Grade 4 MD standards, as presented in the Common Core document on pages 31–32. In Grade 4, students convert between larger and smaller units of measure and use all four operations to solve problems involving time, distances, masses, and money. Problems may incorporate fractions and decimals. The geometric measurement standards ask students to work with angles to understand their meaning and their additive nature.

Here are four cards from the Grade 4 Measurement and Data deck that all have the same answer, 60.









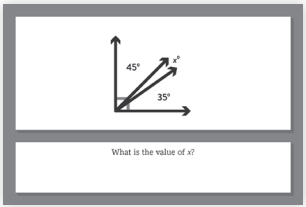
In this set of four cards, students convert between feet and inches and centimeters and millimeters. Students also find the measure of one angle given a right angle and a smaller angle within the right angle. Students also work to find the length of a rectangle given the area and width.

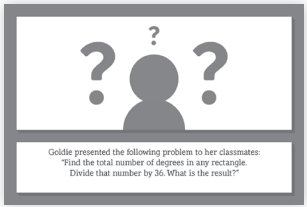
Answers for the Grade 4 Measurement and Data deck are provided on pages 21–23 of this guide.

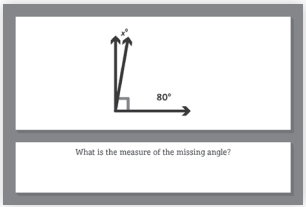
GEOMETRY (4.G)

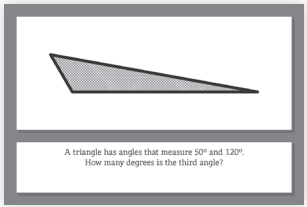
The Geometry deck focuses on the Grade 4 standards in the Geometry domain and the Measurement and Data (geometric measurement) domain as presented in the Common Core State Standards on pages 31–32. After investigating categories of shapes, students now consider specific attributes of shapes in those categories. Students classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines. They also classify shapes according to the presence or absence of angles of a specified size. Geometry standards also asks students to work with lines of symmetry, while geometric measurement standards focus on concepts of angle measurement.

Here is one group of four cards in the Grade 4 deck that all have the same answer, 10.









In this set of four cards, students use known facts such as a right angle measures 90 degrees, the sum of the angles of a rectangle is 360 degrees, and the sum of the angles of a triangle is 180 degrees. Students apply these facts in four different contexts.

Answers for the Grade 4 Geometry deck are provided on pages 24–26 of this guide.

VISIT DIDAX.COM/CCCC ...

For the following important resources:

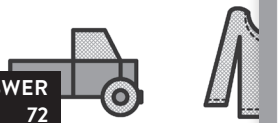
- A complete bibliography and links to research that informed this product
- A complete correlation to the Common Core State Standards for each grade-level deck
- Meaningful tasks to be used with each domain and grade level (once students have used the Common Core Collaborative Cards to form their groups)

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
72



Desean spent $8 on his toy truck.
Olivia spent 9 times that amount on a s
How much did the sweater cost?

$4 \times 3 \times 2 \times 3 =$

Find the value.

With your partners, find another way to expres

36 and 12

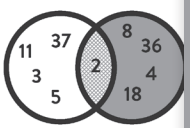
For these two values,
find the largest common multiple that is les

Peter just got a puppy! He wants to know if his back yard
is big enough for his puppy to play in. His yard measures
9 meters long and 8 meters wide. What is the area of Peter's yard?
Discuss with your group: Is this enough space for the puppy to play in?

ANSWER
36

William wants to organize his baseball card
He has 108 cards. He has just three teams, with the
cards for each team. How many cards does William h

Deval and Betty brought bags of canned food t
Deval brought 9 bags, with 4 cans in eac
Betty brought 4 bags, with 9 cans in eac
How many cans did each student bri



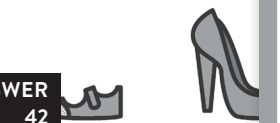
Your partners have the largest composite number

Answer with your group:
Why is 2 in the intersection of this Venn D

1, 4, 9, 16, 25, ___

Figure out the pattern. Then determine the value that goes in the blank.
(Your team has the same value.)

ANSWER
42



Michele spent $7 on a pair of baby shoes for
She spent six times that much for a pair of sho
How much did Michele's shoes cost

The library bookcase has 4 shelves
There are 168 books in the bookcase and each sh
number of books. How many books are on

Let's compare two pieces of string
The first is 6 inches long. The second is 7 tir
How long is the second string?

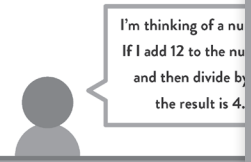
$121 - \square = 79$

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

When you find your group, make up a story problem
that can be solved by the number equation above.

ALGEBRAIC THINKING GROUPINGS

How many factors does 27 have?



Find Rebecca's original number.

IN	OUT
1	5
3	7
6	10
9	13

Jeremiah built this table.
What value did he add to each input to get t

Peter is three years older than Kit.
Mike is 3 years younger than Kit.
The sum of all of their ages is 12. How old is Kit?

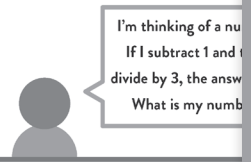
ANSWER
4

How many dots will be in the 10th fig

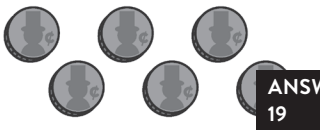
With your group, determine a rule to represen

1, 3, 6, 9, 12,
17, 19, 21, 33,

Find the largest prime number in this



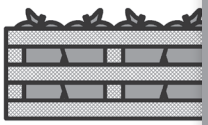
Find Tavi's number.



Tanisha has some pennies. Her sister has five times as many pennies.
If her sister has 95 pennies, how many does Tanisha have?

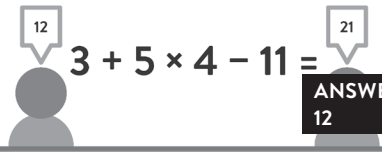
ANSWER
19

Mathville Junior High School has a small au
The auditorium has 216 seats arranged i
If there are 18 seats in each row, how many rows



Michael works on an apple farm.
He helps pack the apples for shipme
He recently shipped 300 apples with 25 apples
How many crates did he use?

The fourth graders are going on a field trip to th
There are 430 students. If each bus holds 3
how many buses should the principal o



Tanisha thinks the answer is 12. Deval disagrees.
He thinks you have to begin on the left to solve the problem.
The answer he gets is 21.
Which is the correct answer?

ANSWER
12

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

ALGEBRAIC THINKING GROUPINGS

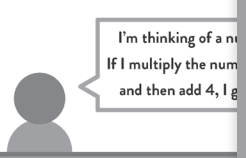
ANSWER 23

IN	OUT
1	3
3	7
5	11
7	15
9	
11	?

Your partners have the same value as the last en

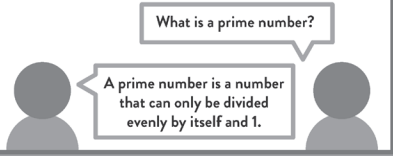
With your partners, find the rule that represents t
chart. Might the value 35 be listed in the right colu

Harry spent some of his money on an action figure.
as much money as Harry on a shirt. Pierre bought
dollars more than Melissa spent. If Harry spent $1
much money did Pierre spend on his b



What is Gerald's original number?

Be ready to share with your group how you found



Find the largest prime number that is a factor of 92.

ANSWER 3

Four children are sharing a bottle of app
The bottle holds 27 ounces of juice. If the children
equally and each child drinks a whole numbe
how much will be left in the bottle

Sheryl has collected 282 Popsicle sticks for her
She wants to store the Popsicle sticks in
If she places 94 sticks in each bag, how many bag

$36 \times \square = 10$

What value goes in the box to make this a tru

$10 \times 30 \div 100 = \square$

What value goes in the box?

Can you find the solution in your head?
Share your strategy with your group.

ANSWER 1

Rashawn has $15 in his wallet. He wants to buy 2
costing $1.29 each, 4 packs of paper for $2.38 apiece,
$1.90. Does he have enough money? If yes, how mu
get? If no, how much more money does h

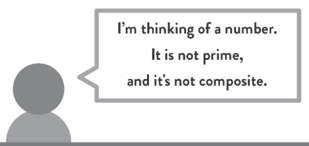
$140 \div 140$ $\quad \frac{36}{36}$ $\quad \frac{xy}{xy}$ $\quad 1{,}245 \div 1{,}245$

These expressions all represent the same valu

$\frac{?}{?}$

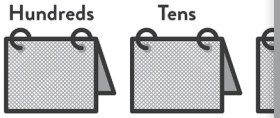
Duncan says any number can be written as a fracti
think of how you would write 18 as a fr

What would the denominator be?

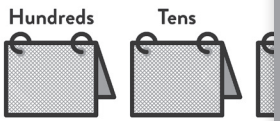


What number is Belize thinking of?

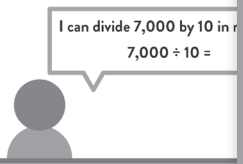
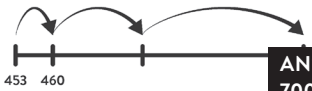
BASE TEN GROUPINGS

6 hundreds + 15 tens +	7 hundreds + 3 tens + 2		4 hundreds + 25 tens + 102 ones
What is this number? Be ready to share your thinking with you	What is this number? Be ready to share your thinking with you	The tens digit is three more than the ones (u The hundreds digit is two more than the t The ones (units) digit is 2. What is the number?	What is this number? Be ready to share your thinking with your group.

ANSWER
752

		2 hundreds + 18 tens + 1	300 486 406 468 399 408 5
When rounded to the nearest hundred, this nu Your partners' cards show the original n	The tens digit is twice as big as the hundr The ones (units) digit is two less than the t The ones (units) digit is 6.	What is this number?	The largest value on this card is the one you are looking for.

ANSWER
486

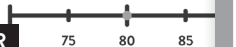
	603 80.6 90.9		
Name the number that is 10 times bi than the number shown on this numbe	Which number is the biggest? Round the biggest number to the nearest Your partners have this rounded num	Find the answer and then discuss with p how you might solve this problem in you	Bernadette used a number line to solve 453 + 247 =. Her first jump went 7 units. Her second jump went 40 units. She reached the solution on the third jump. What is the solution?

ANSWER
700

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

BASE TEN GROUPINGS

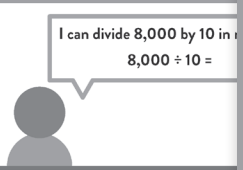
ANSWER
800



Name the number that is 10 times bi
than the number shown on this numbe

(300 + 80 + 6) + (400 +

Find the value.

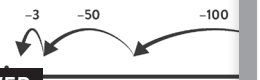


Find the answer and then discuss with p
how you might calculate this problem in y

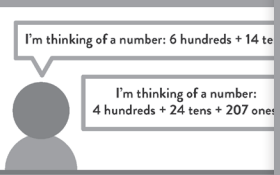
901
5,012
936
823.1
900

Find the smallest value on this card.
Round the smallest value to the nearest hundred.
Your partners have this rounded number.

ANSWER
847

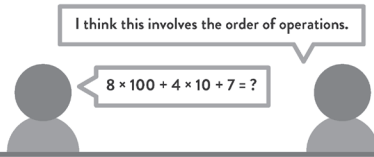


Clarence says that he can subtract numbers using ar
Clarence began at 1,000 and made jump
How much did he take away from 1,000, and wha
Your group has Clarence's answer to his subtra



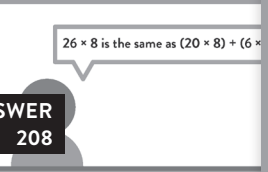
Are these boys thinking of the same nu
If so, what is this number?

Maurice had $1,000 in the bank. He took out $153
How much did he have left in the ba



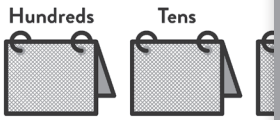
Help the girls solve this problem.

ANSWER
208



If Sara is correct, your partners have the answer

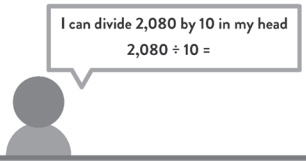
If this is not true, your partners have 1,000 as



The units digit is 4 times greater than the hu
The units digit is 8. A zero is in the tens

What is the number?

William has $208.48 in his bank acco
If he rounds his money to the nearest whc
about how much money does he hav



Find the answer and then discuss with partners
how you might calculate this problem in your head.

BASE TEN GROUPINGS

$3 \times 2 = 6$

$3 \times 20 = 60$

So...

$3 \times 200 = ?$

Be ready to explain your thinking to your

$6 \times 1 = 6$

$6 \times 10 = 60$

So...

$6 \times 100 = ?$

Be ready to explain your thinking to your

$1 \times 6 = 6$

$10 \times 6 = 60$

So...

$10 \times 60 = ?$

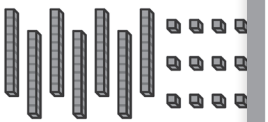
Be ready to explain your thinking to your

$3 \times 5 \times 2 \times 2 \times 5 \times 2 =$

ANSWER
600

Explain how your problem relates to the problems your partners have.

Yes, you all have the same answer. Why?



Suppose you didn't have any hundre
and you built 453 using only tens and

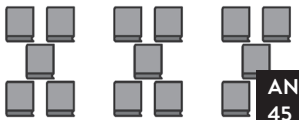
How many tens must you use to make this

If 4,500 divided by 1 is
4,500 divided by 10 i
What is 4,500 divided

Be ready to explain your thinking

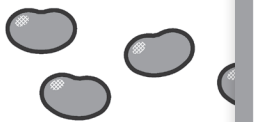
How many balls are represented her

Be ready to explain how you found your answer.



ANSWER
45

What is three times 3 groups of 5?



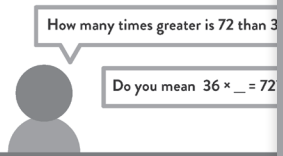
Eliza wants to share her jelly beans equally with
She put her 86 jelly beans in 4 pile
How many jelly beans are left over

$80 \div 40 =$

$800 \div 400 =$

$8{,}000 \div 4{,}000$

Be ready to explain how you got your a
What pattern do you see?



Help the girls by finding the answer to their

ANSWER
2

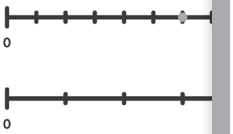
Morgan has 126 stars that she wants to arrange on a rectangular-shaped cloth. She wants to make exactly 4 rows. How many stars will be left over?

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

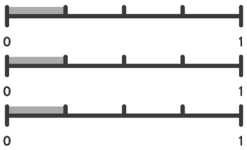
What fraction is represented by the shade



What is another name for this fracti
when it has a denominator of 4?

$$\frac{5}{4} - \frac{2}{4} =$$

Solve this equation.



Find the sum of these fractions.

ANSWER
3/8

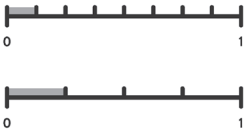
Mom cut the pizza into 8 slices.
I ate one slice and my brother ate 2 sl
What fraction of the pizza did we ea

$$3 \text{ times } \frac{1}{8}$$

What value is this?

$$\frac{2}{8} + \frac{1}{8} =$$

What is the sum of these two fractio



What is the sum of the shaded amounts on these two number lines?

Question for your group: How do you know that your sum is correct?

ANSWER
7/10

0.7

What is this value as a fraction?

7 multiplied by

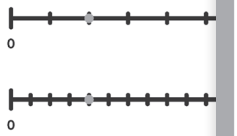
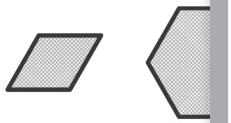
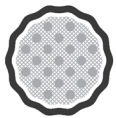
What value is this?

$$\frac{3}{10} + \frac{1}{10} + \frac{3}{10}$$

Solve this equation.

Name the fraction represented by the shaded regions.

FRACTIONS GROUPINGS

$\frac{5}{15}$ and $\frac{2}{6}$			
Find the unit fraction that is equivalent to both of	Are these fractions equal? If yes, what unit fraction is equivalent to both of	The rhombus covers how much of the he (Give your answer as a fraction.)	Jerry ate 2/3 of the pizza. How much did he leave for me to eat? (Give your answer as a fraction.)

ANSWER
1/3

		$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} +$	
How many fourths are shaded here	I need 7 times the shaded part to make my How much do I need? (Give your answer as a fraction.)	What is the sum of these fractions	My little brother ate one slice from one of the pizzas. If the two pizzas together represent the whole, what fraction is left for me to eat?

ANSWER
7/4

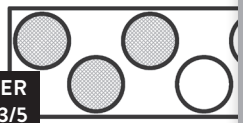
0.3	3 *multiplied by*	3 *divided by* 1	
State this decimal as a fraction.	Represent this value as a fraction	Represent this as a fraction.	What fraction should be placed in this box?

ANSWER
3/10

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

FRACTIONS GROUPINGS

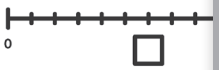
ANSWER
3/5



What fraction of the circles is shade

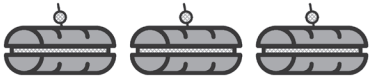
3 *times* $\frac{1}{5}$

Represent this value as a fraction



What fraction should be placed in this

Your partners have a fraction equivalent



Five friends are sharing 3 large sandwiches.
How much of the 3 sandwiches will each friend get to eat?

(Give your answer as a fraction.)

ANSWER
3/7

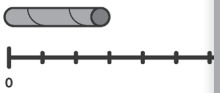
$\frac{3}{4} \times \frac{2}{2}$ is the same as $\frac{3}{4}$, because a
multiplied by 1 is the numbe

If so, what is
$\frac{3}{7} \div \frac{2}{2}$?

Find the value.

3 *times* $\frac{1}{7}$

State this value as a fraction.



Use the number line to determine the length of th

(Give your answer as a fraction.)

$\frac{3}{7}$ *or* $\frac{3}{4}$

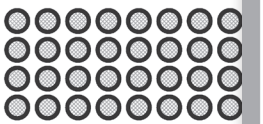
Which is closer to 0?

Explain to your group how you know.

ANSWER
4

4.0 0.04 3.9

Select the largest value.



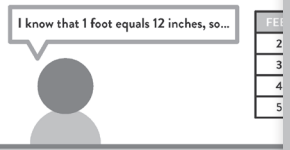
How much is 1/10 of this amount

25.1 10.34 8.6 4.00

Select the smallest value.

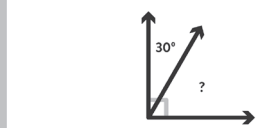
Your mom has $40.
She says that you can have 1/10 of that amount.
How many dollars is she going to give you?

MEASUREMENT AND DATA GROUPINGS



Complete the chart on a separate piece of

(Your partners have the same value as the last entr



Mia constructed this right angle.
She then placed a ray so that one of the angles forme
How many degrees is the measure of the seco
Be ready to share your thinking with your

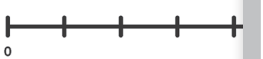
CENTIMETERS	MILLIMETERS
3	?
?	40
5	?
6	?

Willa says, "For every centimeter, there are 10 n
Use Willa's clue to complete this chart. (Use a separat

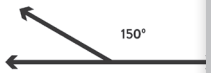
(Your partners have the same value as the last entr

The area of the pen for Peter's rabbits measures 600 square yards.
The width of the pen is 10 yards.
What is the length of the pen in yards?
Be ready to share your thinking with your group.

ANSWER
60



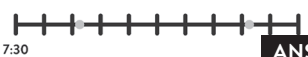
Marcella spent ⅓ of her money on a birthday gift f
The gift cost $10. How many dollars did she ha
she bought the gift? Use this number line to l



Al measured the larger angle with his prot
He realized that he did not need to measure the
How many degrees is the smaller angl
Be ready to explain your thinking to your

Harry has three times as much money as
If Luke has $10, how many dollars does Harr

Use this bar diagram to help you.



Janella got up at 7:41 AM. She was ready for school at 8:11 AM.
How many minutes did it take her to get ready this morning?

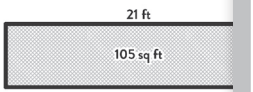
ANSWER
30

The fourth-grade class made this line plot to find ou
of ribbon they collected. How many yards of ribbon

cm	mm
1	100
½	?
2	?
?	300
3.5	?
?	500

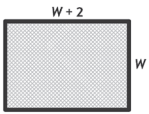
Mattie made a table to show the relationship between
and meters (m). Fill in the chart on a separate sh

(Your partners have the same value as the last entr



Alicia's puppy pen measures 21 feet long a
an area of 105 square feet. How many feet is the wi

Explain your thinking to your team.



Key: *W* = width

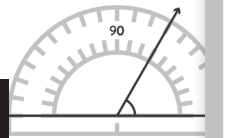
Pierre knows that the perimeter of his yard is 24 feet. He also knows
that the length of the yard is two feet more than the width.
How many feet is the width of the yard?

ANSWER
5

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
12/4 or 3

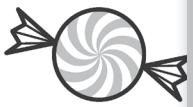


Henri says this angle measures 120°. Loretta thinks
Choose the answer that best describes the

(Your partners have the same letter answer

A: 80
B: 100
C: 20
D: 40

Melanie made 100 mL of punch. She used four
lemonade as cranberry juice. How many mL of
did she use? Use the bar diagram to help you find
(Your partners have the same letter answer



A: 20 ounces
B: 30 ounces
C: 24 ounces
D: 22 ounces

Roberta says, "Sixteen ounces equal one
She has 1½ pounds of candy. How many our

(Your partners have the same letter answer

A: 80
B: 800
C: 8,000
D: 4,000

The students know that 1,000 grams equal 1 kilogram. They found that 4 textbooks weighed 8 kilograms altogether. How many grams is that?

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

ANSWER
5/8

here is called ∠*ABC*.
be called ∠*CBA*.
ne measure as ∠*ABC*.
The angle can also be called ∠*BAC*.

Which statement is **not** correct?

(Your partners have the same letter answer

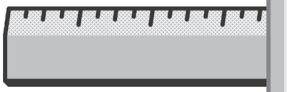
A: 8:47
B: 8:28
C: 8:10
D: 8:18

Harry left home at 7:30. He rode his bike 25 minu
house. The two friends rode 15 minutes to school
minutes later. What time did the bell
(Your partners have the same letter answer

A: The width of the rectangle is 70 ft.
B: The perimeter of the rectangle is 300 ft.
C: Area = length × width
D: Perimeter = length + width

Select the statement that is **not** tru

(Your partners have the same letter answer

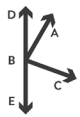


A: 10 feet = 120 inches
B: 7 feet = 84 inches
C: 3.5 feet = 42 inches
D: 2 feet = 30 inches

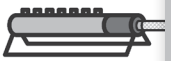
Sandra made a table converting feet to inches.
Which conversion did she get wrong?

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

ANSWER
4/9

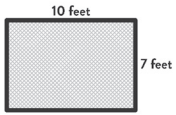


Katrina said, "Look, I made my initia
She knows that angle *ABC* measures 80° and ∠*DBE*
If ∠*DBA* measures 30°, how many degrees



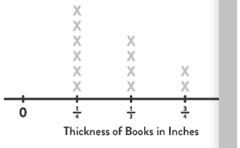
This sprinkler rotates 1 degree every
How many degrees does the sprinkler
in one hour and 10 minutes?

Angelina measured the length of her p
She said that it was 7 centimeters
Then she measured the same pencil using
How many millimeters is it?

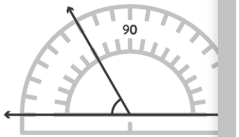


How many square feet of carpet will be needed
to cover the floor of this room?

MEASUREMENT AND DATA GROUPINGS



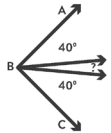
The students measured the thickness of the books
classroom. The line plot above displays their result
stacked the books, how many inches high would



Sally measured the angle shown here. She wa
the angle into 6 smaller angles that are equ
How many degrees will each of the smaller ang

cm	mm
5	50
4	40
3	30

Mary Mesure made a table converting centimeter
How many millimeters are the same as one c

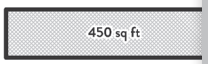


$\overline{AB}$ and $\overline{BC}$ are perpendicular.
How many degrees does the angle with the "?" mark measure?

ANSWER
5/6

Harry started riding at 7:35 a.m.
He stopped for breakfast for 10 minu
He finished his ride at 8:30 a.m.
How many minutes was Harry riding hi

This angle is formed by two perpendicula
How many degrees does one half of this angl



Ignacio discovered that the area of his rectang
back yard is 450 square feet. The width of the y
How many feet long is Ignacio's yar

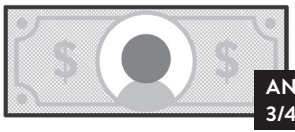
Crispin poured 360 mL of liquid into 8 beakers. If each beaker had the same amount of liquid, how many millimeters were in each beaker?

ANSWER
6/3 or 2

Roosevelt's square play yard has an area of 36
How many feet long is each side of the

Sapphire cut a circle into equal par
She measured each angle at the center of h
Each angle measured 60º.
How many parts did Sapphire cut her circ

Maida has 5 quarters, 20 dimes, 40 nic
1 half-dollar, and 25 pennies in her pigg
How much money does Maida have in he
(State the amount in dollars.)



Grandpa wants to give each of his grandchildren the same amount of money. He has $630, and he will give each grandchild $105.
How many grandchildren does Grandpa have?

ANSWER
3/4

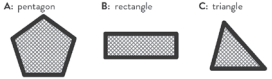
Correlation to the Common Core State Standards for each group of 4 cards can be found at didax.com/cccc.

GEOMETRY GROUPINGS

ANSWER B

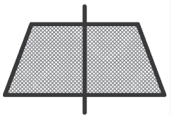
Which triangle is a right triangle?

(Your partners have the same letter answer as



Which shape has parallel sides?

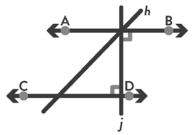
(Your partners have the same letter answer as



A: 2
B: 4
C: 3
D: 1

This trapezoid has one line of symmet
How many lines of symmetry does a square

(Your partners have the same letter answer as

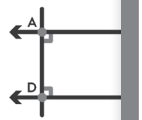


A: $\overline{AB}$ is perpendicular to $\overline{CD}$.
B: $\overline{AB}$ is parallel to $\overline{CD}$.
C: h is perpendicular to j.
D: j is parallel to $\overline{CD}$.

Which statement is true?

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

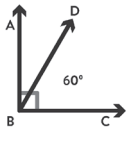
ANSWER C



ngth as $\overline{BC}$.
logram.
oid.
ar to $\overline{DC}$.

Donna said that $\overline{AB}$ is parallel to $\overline{DC}$. What els

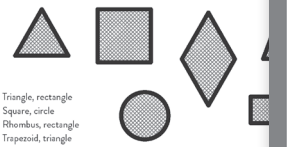
(Your partners have the same letter answer as



A: 90°
B: 45°
C: 30°
D: 20°

$\angle ABC$ is a right angle. What is the measure o

(Your partners have the same letter answer as



A: Triangle, rectangle
B: Square, circle
C: Rhombus, rectangle
D: Trapezoid, triangle

Which pair of shapes shares a common attribute—

(Your partners have the same letter answer as

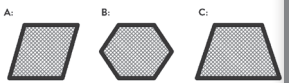
A: 90°
B: 180°
C: 360°
D: 120°

Grafton said, "The four angles in a square and in a rectangle have the same total number of degrees." How many degrees are in a square?

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

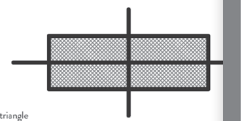
ANSWER D

Meg is thinking of a shape: "It is a quadrilateral. One
sides is parallel, but the sides are not equal in
What is the shape?
(Your partners have the same letter answer as



One of these shapes contains a right angle. Which

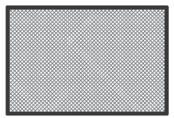
(Your partners have the same letter answer as



A: Square
B: Rhombus
C: Equilateral triangle
D: Scalene triangle

This rectangle has only two lines of symm
Which shape does not have any lines of sym

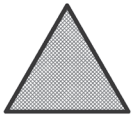
(Your partners have the same letter answer as



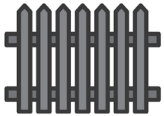
A: 12 m
B: 6 m
C: 18 m
D: 9 m

Mike knows that the area of his rectangular living room is 54 square meters. He also knows that the width of the room is 6 meters.
What is the length of Mike's living room?
(Your partners have the same letter answer as you do.)

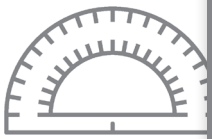
GEOMETRY GROUPINGS



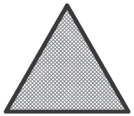
How many lines of symmetry does an equilateral t



A rectangular yard uses 24 meters of fencing. If the l
is 9 meters, how many meters is the width of

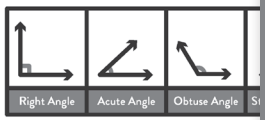


A circle has been partitioned into equal-size
Each angle measures 120 degrees. How many ang



An equilateral triangle has three sides of equal length.
How many equal angles does it have?

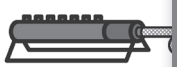
ANSWER
3



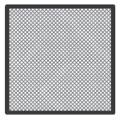
Marianne made this chart. How many of her entri

(State your answer as a number.)

Frederick says, "Begin with the number of vertices
Then subtract the number of vertices in a re
Divide this number in half. Now, square that
Find the answer to Frederick's puzzle

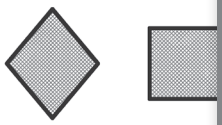


A lawn sprinkler turns 90 degrees every m
How many minutes does the sprinkler take to mak

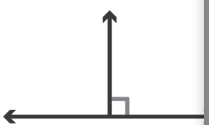


A square living room needs 16 square feet of carpeting
to cover the floor exactly. How many feet long is one side of the room?

ANSWER
4



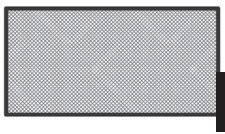
Josh said, "The length of the side of a rhombus is 7
length of the side of a square is 7 inches. I think that
these two figures will be the same." Do you agree
(If you agree, the answer is "yes." If you disagree, the



Isabella said, "A straight angle is made up of two
so a straight angle must measure 180 degrees. 90
Is Isabella correct?
(If you agree, the answer is "yes." If you disagree, the

Michael says, "A right angle can be broken into two
Do you agree with Michael?

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



Pedro says, "A rectangle cannot have an obtuse angle." Is Pedro correct?

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

ANSWER
yes

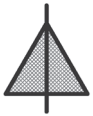
Correlation to the Common Core State Standards for each group of 4 cards can be found at didax.com/cccc.

GEOMETRY GROUPINGS

ANSWER
no

Maria says that all of these figures are rays. Is

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



Cindy says, "This equilateral triangle has one line
Do you agree with Cindy?

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

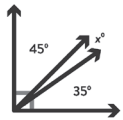
Robert said, "All triangles have at least one line o
Is Robert correct?

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

Ellie says, "Any line contains just two points." Do you agree with Ellie?

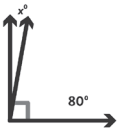
(If you agree, the answer is "yes." If you disagree, the answer is "no.")

ANSWER
10



What is the value of *x*?

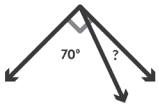
Goldie presented the following problem to her
"Find the total number of degrees in any re
Divide that number by 36. What is the re



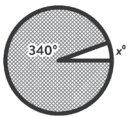
What is the measure of the missing ang

A triangle has angles that measure 50º and 120º.
How many degrees is the third angle?

ANSWER
20

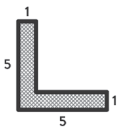


How many degrees is the smaller angl



What is the value of *x*?

One angle is 4 times larger than the other
Together, the measure of the two angles is 100
How many degrees does the smaller angle m



An L-shaped yard has an area of 9 square feet.
How many feet long is its perimeter?

To see all Common Core Collaborative Cards available, visit:

didax.com/cards

GRADE 4
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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