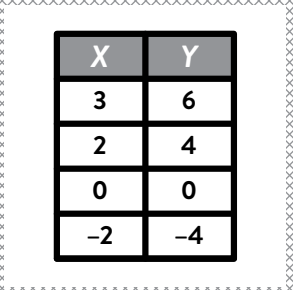
COMMON CORE COLLABORATIVE CARDS

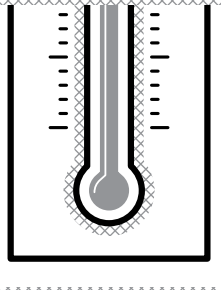
Grades 6–8

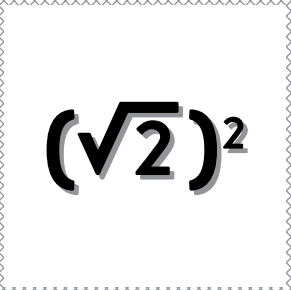
Additional resources available at

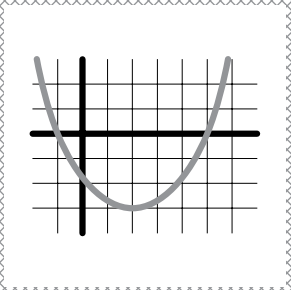
didax.com/cccc

TEACHER GUIDE









NUMBER SYSTEM

by Kit Norris

OVERVIEW

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

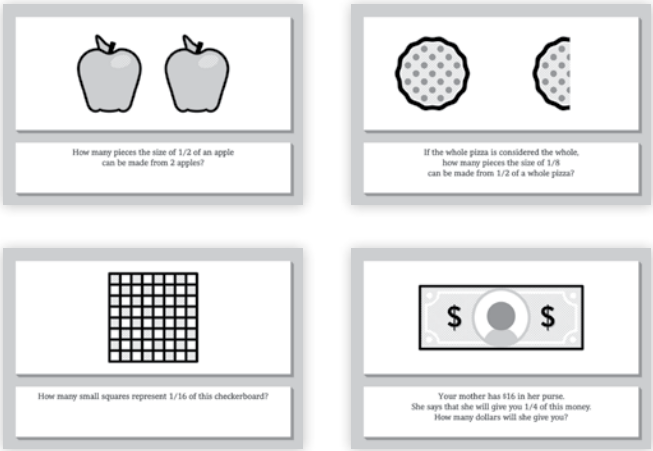
- As an activator for the day's lesson
- To review previous content
- As a learning center activity
- For students' independent practice

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 three decks of cards per box, each focusing on the same domain in the Common Core State Standards (CCSS). Each deck provides problems representing the standards articulated in the CCSS for a particular grade level.

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 Grade 6 Number System deck:



All four cards in this set have the same answer, 4, 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 role designated. 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 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 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).

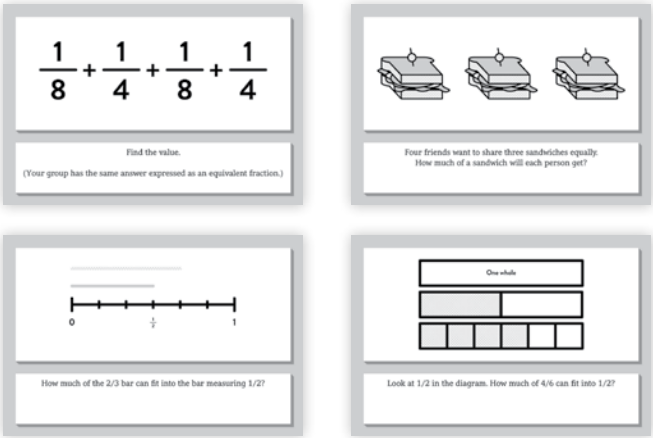
The Collaborative Cards provide teachers with insights into what individual students truly understand. As they apply their knowledge in new contexts, students use what they know. As one fifth-grade teacher in Grafton, Massachusetts stated, "I gained insights into my students' misconceptions. These cards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

NUMBER SYSTEM: GRADE 6

The Grade 6 deck focuses on the Number System standards laid out on pages 42–43 of the Common Core State Standards for Mathematics. This deck of cards extends students' previous work with and understanding of fractions to include division of fractions by fractions. The deck provides opportunities for students to interpret number lines and fraction strips as models illustrating division by fractions. The deck also includes work with decimals, integers, and the coordinate plane.

The Common Core begins the formal presentation of rational numbers as an extension of what students already understand about whole numbers. Students can relate to situations such as temperatures below zero, loans, and elevations below sea level and use this understanding to begin thinking more symbolically. The number line continues to play an important role. Students see –3 and 3 as being opposites, as these values are the same distance from zero and are on opposite sides of zero.

Here is one group of four cards from the Grade 6 Number System deck:



Students who have these cards first determine that their own card's answer is 3/4. When students find the other members of their group, they have an opportunity to compare and discuss how these four different situations all lead to the same value, 3/4. The number line model and the fraction strip model demonstrate the idea that not all of the strip the size of 4/6 (or 2/3) can fit in the 1/2 strip. As students compare the size of the strips, they can see that 4/6 is composed of 4 units. These four units represent the new whole under consideration. Only 3 of these 4 units fit in the 1/2 strip. Thus the solution is 3/4.

Students also review the context of sharing a sandwich. Four friends represent the whole and three sandwiches are to be shared. Thus, each friend receives 3/4 of a sandwich. This connection with division is not easily understood. Teachers might consider giving students multiple experiences with such questions and allow students to recognize the pattern.

For example, teachers could extend the pizza-sharing idea to different numbers of friends and pizzas. Students could create a table and discuss the results:

SITUATION	SIZE OF 1 SHARE
5 friends sharing 2 pizzas	2/5
6 friends sharing 2 pizzas	2/6
3 friends sharing 1 pizza	1/3

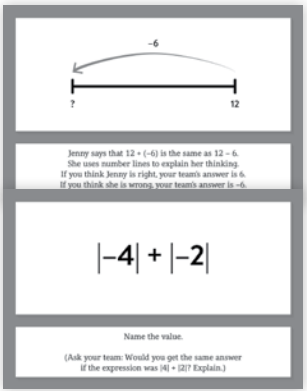
In some cases, students may not have studied a particular topic. In the process of finding their group, many students learn from each other or collaborate to make sense of the question. This opportunity initiates thinking upon which students can build in the future. Teachers' observations of students as they find their partners can also inform them of areas that need further study and those topics that the students have clearly mastered.

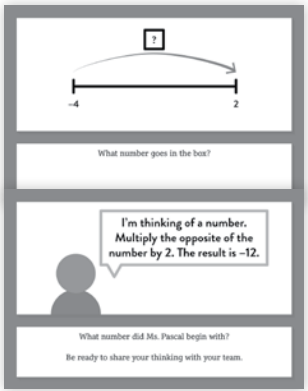
Answers for the Grade 6 Number System deck are provided on pages 10–12 of this guide.

NUMBER SYSTEM: GRADE 7

The Grade 7 deck focuses on the Number System standards laid out on pages 48–49 of the Common Core State Standards for Mathematics. This deck of cards focuses on extending students' understanding of all four operations with fractions to work with rational numbers. The number line is featured as a model as well as to illustrate distance and to show that integers and their opposites are equidistant from zero. Students have opportunities to use integers in everyday contexts, and students apply properties as strategies for multiplying and dividing rational numbers.

Here is one group of four cards from the Grade 7 Number System deck:





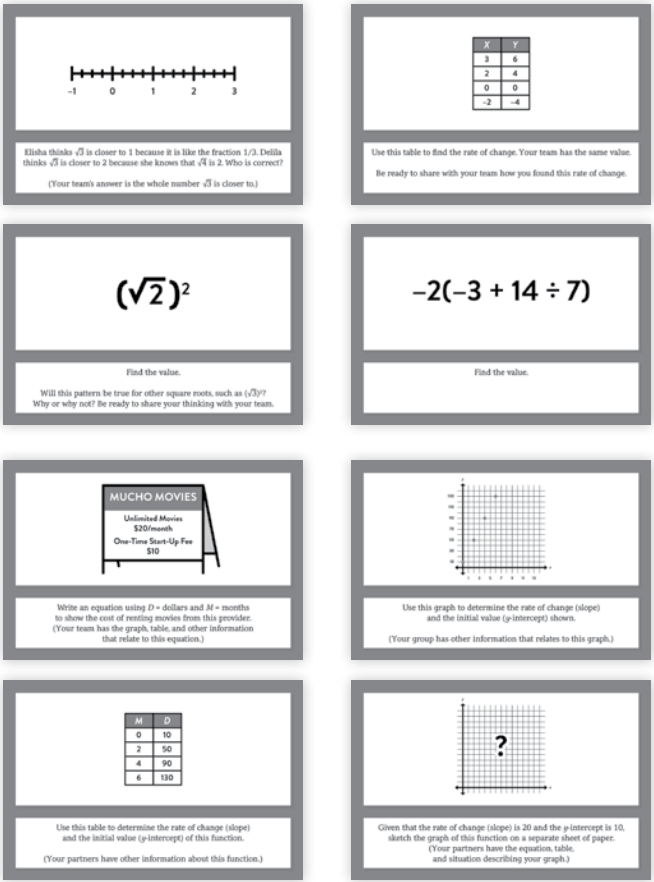
In this group of four cards, students determine distance on a number line, solve a number puzzle, and consider whether or not subtracting a quantity is the same as adding that quantity's inverse. Students also solve a problem involving absolute value. The first card in this group asks students to analyze the thinking presented to see if the conclusion makes sense. Making sense of the mathematics is a foundational practice of the Common Core State Standards.

Answers for the Grade 7 Number System deck are provided on pages 13–15 of this guide.

NUMBER SYSTEM: GRADE 8

The Grade 8 deck features two domains of the Common Core State Standards for Mathematics: The Number System and Functions. The Number System and Functions standards are laid out on pages 54 and 55, respectively, in the Common Core document. The Grade 8 deck focuses on extending students' understanding of number to include values that are not rational. When working with the Functions domain, the cards enable students to connect the table, graph, equation, and rate of change and y-intercept of a function given a specific context.

Here are two groups of four cards representing the two domains included in this deck:



These two groups of four cards prompt students to analyze, reflect, critique, and share their thinking. Students work with irrational numbers and make connections with the multiple representations used to describe functions. As students solve the question on their own card and then work with their team to establish that they all belong in the same group, students have opportunities to think beyond "finding the answer." They are verifying, discussing, and extending their thinking about these topics.

Answers for the Grade 8 Number System and Functions deck are provided on pages 16–18 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 at each grade level (once students have used the Common Core Collaborative Cards to form their groups)

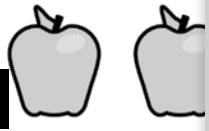
ADDITIONAL MEANINGFUL TASKS

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.)

GRADE 6 GROUPINGS

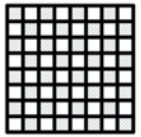
Correlation to the Common Core State Standards for each group of 4 cards can be found at didax.com/cccc.

ANSWER 4



How many pieces the size of 1/2 of an
can be made from 2 apples?

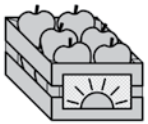
If the whole pizza is considered the w
how many pieces the size of 1/8
can be made from 1/2 of a whole piz



How many small squares represent 1/16 of this

Your mother has $16 in her purse.
She says that she will give you 1/4 of this money.
How many dollars will she give you?

ANSWER 15



Freddy Farmer is packing apples in crates to be mac
He places 32 apples in each crate, and he has
How many crates does Freddy need to ship all

$$\begin{array}{r} 17 \\ 38\overline{)570} \\ \underline{38} \\ 290 \\ \underline{256} \\ 34 \end{array}$$

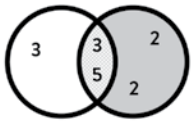
Marcia calculated 570 divided by 38. Find Mar
(Your partners have the correct answ

Show the mistake to your team. Do they agree that

$$10 \times 0.15 \times 100$$

Find the value.

With your team, decide whether or not these
can be done in any order. Why or why



Sally used a Venn Diagram to determine the Greatest Common Factor
for 45 and 60. What is the Greatest Common Factor?

Explain your reasoning to your partners.

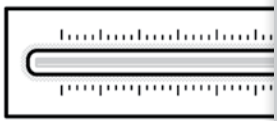
ANSWER 10

The answers are easy to calculate if you see the pattern.

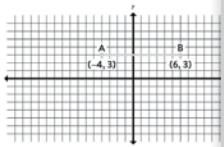
9(8) + 9(2) = 90 8(3
7(6) + 7(4) = 70 2(

In each equation, what value is the nu
before the parentheses being multiplie

Be ready to explain why this pattern w



Pedro kept track of the temperature. It rose 2 degr
rose 7 degrees, rose 2 degrees, and rose 5 m
How many degrees did the temperatur
during the time Pedro kept track of



What is the distance between A and

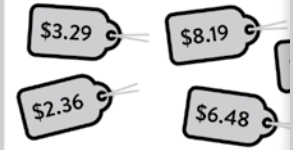
$$50 \times 20 \div 10^2$$

Find the value.

Be ready to share your thinking with your partners.

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

GRADE 6 GROUPINGS

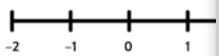


Henry has $20. Use your estimating skills to
the amount Henry will have left after paying fo
If you think he has enough money, your group's ar
think he does not have enough money, your team

$$-\frac{3}{4} \times \frac{4}{3}$$

Find the value.

Discuss with your team the relationship between t



Kerry is thinking of a number.
If she doubles the number and adds two, the r
What is her number?

How many degrees has the temperature changed
if it rose 3 degrees and then dropped 4 degrees?
Answer with a negative number if the temperature dropped
and a positive number if it rose.

ANSWER
−1

$$9.4 \times 10 \div 0.$$

A) 940 B) 94 C) 9.4

Find the correct solution.

(Your partners have the same lette
as the correct response to this proble

$$-(-5) =$$

A) +5 B) Is locate
zero on t
C) Means the opposite of 5 D) −5

What statement is the best match for this ex

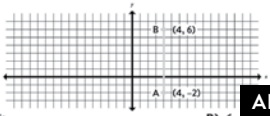
(Your partners have the same lette
as the correct response to this proble

$$15 \div 2.4 =$$

A) 6.25 B) 7 C) 6

Solve this equation.

(Your partners have the same lette
as the correct response to this proble



A) 8 units B) 6
C) Cannot determine that value D) 4

How far is it from A to B?

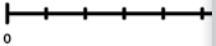
(Your partners have the same letter
as the correct response to this problem.)

ANSWER
A

X	Y
2	6
3	9
5	15

What is the relationship between *X* and *Y* in

Express the relationship as a fraction:



What is 2 times 1/6?

Express your answer as a unit fracti

$$\frac{27}{81}$$

Express as a unit fraction.

$$\frac{2}{2} \times \frac{1}{3} \times \frac{4}{4} \times \frac{8}{}$$

Express as a unit fraction.

ANSWER
1/3

GRADE 6 GROUPINGS

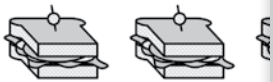
Correlation to the Common Core State Standards for each group of 4 cards can be found at didax.com/cccc.

ANSWER
3/4

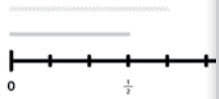
$\frac{1}{4} + \frac{1}{8}$

Find the value.

(Your group has the same answer expressed as an e



Four friends want to share three sandwiche
How much of a sandwich will each perso



How much of the 2/3 bar can fit into the bar m

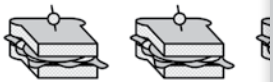
Look at 1/2 in the diagram. How much of 4/6 can fit into 1/2?

ANSWER
0.6

$0.2 \times 3 = 0.0$

What mistake did Sandra make in her calc

(Your group has the correct answer to this



Five friends are sharing 3 large sandw
How much of a sandwich will each friend h
Express your answer as a decimal

$1 \div 0.1 = 10$
$2 \div 0.2 = 10$
$3 \div 0.3 = 10$
$6 \div \square = 10$

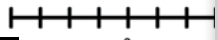
Use this pattern to determine the value that go

Why do you think this pattern is tru
Be ready to discuss this with your te

$10 \times 42 \div 7 \div 10^2$

Determine the value.

ANSWER
C



B) $|-3| = -3$ C) $-2 < -1$

Which of the above statements is tru

(Your partners have the same letter as the cor

$1.02 + 12 + 1.$

A) 126 B) 234 C) 14.22

Which is the correct response? Be ready to explai

(Your partners have the same letter as the cor

$9.4 \times 100 =$

A) 9400 B) 94 C) 940

Which is the correct answer?

(Your partners have the same letter as the cor

$2.3 \times 0.04 =$

A) 92 B) 0.92 C) 0.092 D) 9.2

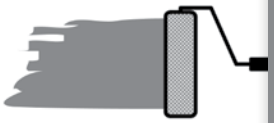
Find the correct answer. Be ready to share your thinking.

(Your partners have the same letter as the correct choice.)

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

GRADE 7 GROUPINGS

Peter ate 1/2 of a candy bar. Now, three friends wa
left of the candy bar. How much of the entire
of the three friends get if they share the remaini



Andre was practicing using a paint roller. He painte
red paint. Then he covered 1/3 of the red paint
How much of the wall was painted with bo

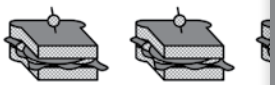
Marianne had 5/12 of a yard of fabric. From this pie
a yard to make a dress for her doll. How much fab

(Your team's answer is this value stated as a u

$$\frac{1}{6} \times \frac{4}{4} + \frac{3}{4}\left(\frac{2}{4} - \frac{1}{}\right)$$

Find the value.

ANSWER
1/6

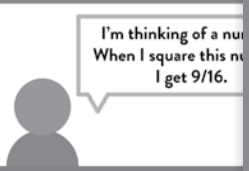


Four friends want to share 3 sandwic
How of a sandwich much will each friend

$$\frac{3}{4} = \frac{-3}{-4} \qquad \frac{-3}{4} = -$$

One of these statements is true.

Find the value of the true statemer



What is Katie's number?

$$-\left[\frac{9}{12} - \frac{1}{4}\right] + \frac{5}{4}$$

Paula says, "This problem looks tricky."
Rick says, "Let's solve it one step at a time."
Help them solve this problem.
(Your group has this answer expressed as an equivalent fraction.)

ANSWER
3/4

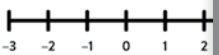
Find the sum of *P* and *Q*.

Be ready to explain your thinking

$$(-3 - 5)(-4 +$$

Find the value for this expression

Be ready to explain your thinking



Alvin says, "I know that |–3| is 3 and |3| is 3."

Be ready to explain your thinking

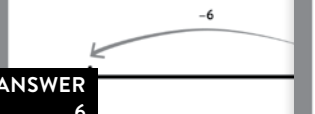
Harriet received money for her birthday. She got $10 from her uncle, $5 from her brother, and $35 from her mother. The next day she received two bills in the mail. The first one asked her to pay $20, and the second asked her to pay $30. How many dollars does she have left?

ANSWER
0

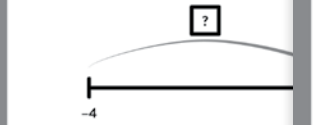
GRADE 7 GROUPINGS

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

ANSWER
6



Jenny says that 12 + (−6) is the same as
She uses number lines to explain her th
If you think Jenny is right, your team's ans
If you think she is wrong, your team's answ

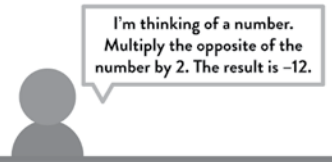


What number goes in the box?

$|-4| + |-2|$

Name the value.

(Ask your team: Would you get the same
if the expression was |4| + |2|? Expla



What number did Ms. Pascal begin with?

Be ready to share your thinking with your team.

ANSWER
1

$-3 + 4$ $\quad 4 -$

Do these two expressions have the same value? I

Use two number lines, one for each exa
on a separate sheet of paper, to verify your

Tatiana is hungry.
She looks in her refrigerator and sees half of
How many servings will this make if a serving size

$$\frac{6 + (-4)(2)}{-4 + 2}$$

Find the value.

Be ready to show your work to your t

$$\frac{P \times Q}{Q \times P}$$

Find the value of this expression.

Be ready to explain your thinking.

ANSWER
1/8

$\frac{3}{\quad}$ $\quad -\frac{1}{8}$ $\quad \frac{0}{8}$

Julie owns a share of XYZ stock. The price of her
by these fractional amounts over four days. Find t
change in the price of the stock. State your answer

$$\frac{-12 - (-11)}{-2^3}$$

Find this value.

Be ready to show your work to your t

Brian wants to share three-fourths of a pizza with 5
should each slice of pizza be for all 6 boys to have

Express your answer as a unit fracti

$8 \times \square = 1$

Mary Ellen wants to know what the term *reciprocal* means. Instead of telling her, her friend Roberto says, "Find the number that goes in the box. That's the reciprocal." (Your group has the same value.) Share the meaning of *reciprocal* with your group.

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

GRADE 7 GROUPINGS

$\frac{-6}{-12} = \frac{1}{2}$ $\frac{-2}{4}$

One of these statements is true. Find the value of t

(Your group has the same answer as the t
expressed as a unit fraction.)

$\frac{-5(4 + (-2))}{-12 - 8}$

What is this value? Use the order of operatio

Express your answer as a unit fracti

Nicki borrowed $100 from her brother. She gave hi
week to pay him back. How much of the total amoun
paid back after five weeks? State your answer as a
your team, write an equation for this situation using

$\frac{\frac{1}{2}}{\frac{1}{2}} \div 2 = ?$

Jeremy looked puzzled. His friend Ein Stein gave Jeremy a hint.
He said, "Look at the first part of this problem.
What is any number divided by itself equal to?"

ANSWER
1/2

Find the value of $Q - P$.

Be ready to explain your thinking to you

+10°, −8°, −6°, +14

Bernie recorded the changes in temperature over a
how many degrees did the temperature ri

$-[-5(4 - 3)$

Find the value.

With your team, look for several ways to solve

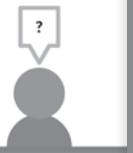
Milan is thinking of a number.
If he doubles the number and then subtracts 12, the result is −2.
What is Milan's number?

ANSWER
5

$\frac{2}{5}$ $\frac{7}{10}$ $\frac{1}{3}$

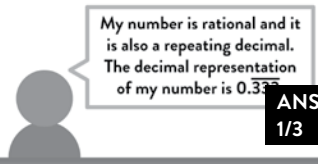
Delilah says, "A terminating decimal is a
that ends when the fraction is stated as a
Which of these fractions does not term
when written as a decimal?

With your team, determine what this value



Betty is thinking of a number. When
multiplies her number by 2 and then subtracts 9,

(Your team has the reciprocal of Betty's n



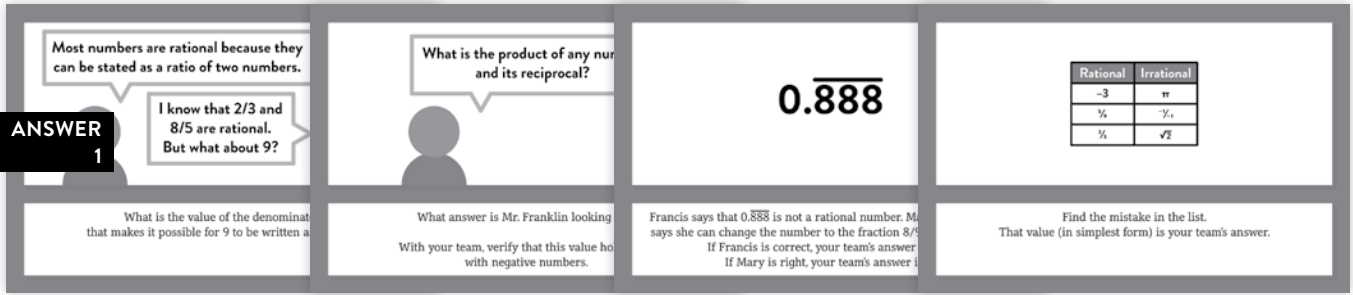
What is Joe's number?

ANSWER
1/3

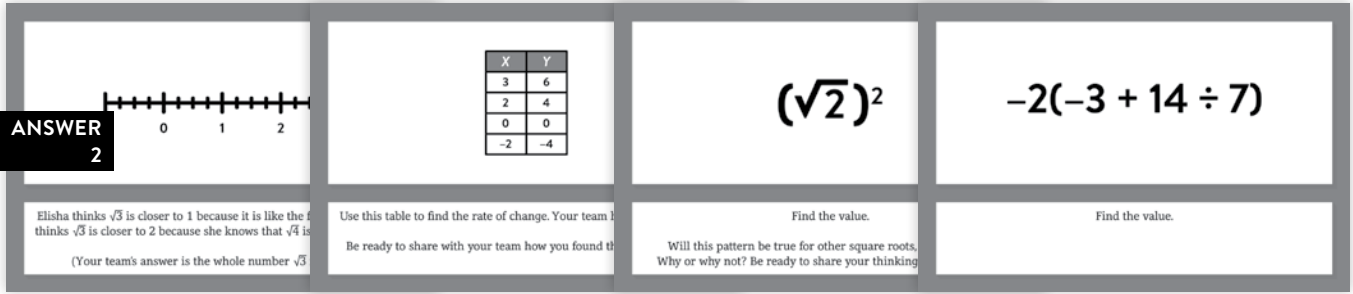
GRADE 8 GROUPINGS

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

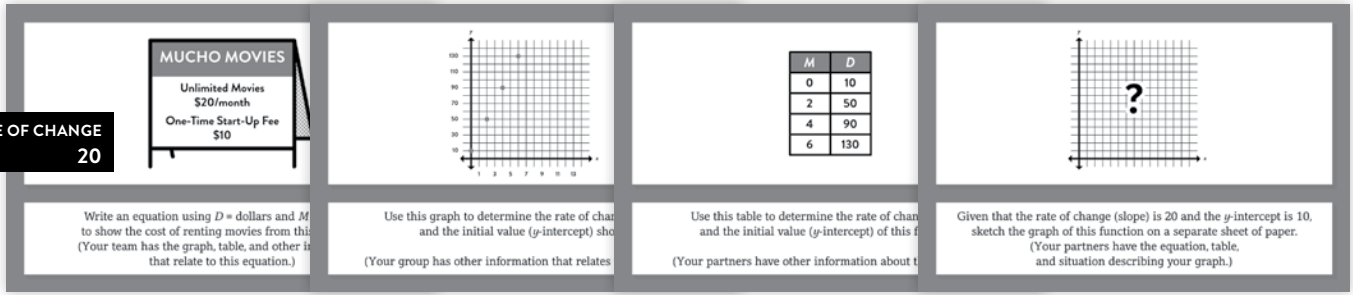
ANSWER 1



ANSWER 2



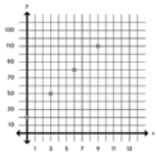
RATE OF CHANGE 20



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

GRADE 8 GROUPINGS

Write an equation using D = dollars and M
to show the cost of renting movies from this
(Your team has the graph, table, slope, and
that relate to this equation.)

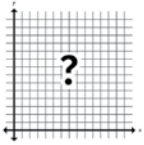


Use this graph to determine the rate of chan
and the initial value (y-intercept) of this
(Your group has the equation, tabl
and information that relate to this gra

M	D
0	20
3	50
6	80
9	110

Use this table to determine the rate of chan
and the initial value (y-intercept) of this f

(Your partners have other information about t

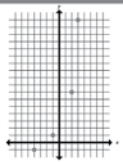


Given that the rate of change (slope) is 10 and the initial value is 20, sketch the graph of this function on a separate sheet of paper.
(Your partners have the table, equation, and situation describing this graph.)

RATE OF CHANGE
10

S	A
2	4
3	9
4	16

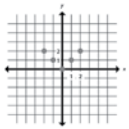
Is this function linear or nonlinear
If this function is linear, your partners also have
If this function is not linear, your partners have no
too. Be ready to justify your thinking with y



Is this function linear or nonlinear
If this function is linear, your partners also have
If this function is not linear, your partners have no
too. Be ready to justify your thinking with y

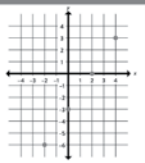
X	Y
−2	−8
−1	−1
0	0
1	1
2	8

Determine whether or not this function i
If this function is linear, your partners also have
If this function is not linear, your partners have no
too. Be ready to justify your thinking with y



Determine whether or not this function is linear.
If this function is linear, your partners also have linear functions.
If this function is not linear, your partners have nonlinear functions, too. Be ready to justify your thinking with your team.

ANSWER
nonlinear



Is this function linear or nonlinear
If this function is linear, your partners also have
If this function is not linear, your partners have fu
nonlinear, too. Be ready to justify your thinking

X	Y
−4	0
−2	1
0	2
2	3
4	4

Given this table, determine whether or not the res
be linear. If this function is linear, your partners
functions. If this function is not linear, your partne
functions, too. Be ready to justify your thinking

(−2, 5), (−1, 3)
(0, 1), (2, −3)

The points on a graph have these coord
If this function is linear, your partners also have
If this function is not linear, your partners have fu
nonlinear, too. Be ready to justify your thinking

X	Y
3	2
4	2
−1	2
−3	2
−1/2	2

Is this function linear or nonlinear?
If this function is linear, your partners also have linear functions. If this function is not linear, your partners have functions that are non-linear, too. Be ready to justify your thinking with your team.

ANSWER
linear

GRADE 8 GROUPINGS

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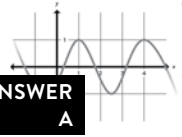
ANSWER A



A) Not linear, and and then decre
B) Linear, and it i decreases and
C) Not linear, and faster than it c
D) Linear, and it i faster than it c

Select the best description of what is hap between the *x* values 0 and 4 on the gr

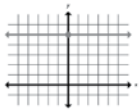
(Your partners have the same letter answer

$y + 2x = 4$

A) –2 B) 4 C) 2

Given $y + 2x = 4$, the rate of change (slope) is on
(Your partners have the same letter answer

Be ready to share your thinking with you



A) $y = 5$ B) $y = -5$ C) $x = 0$

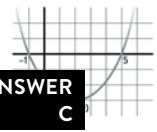
Select the equation that describes this

(Your partners have the same letter answer

A) $\sqrt{2}$ B) –0.99999
C) 0.454545 D) $\sqrt{36}$

A value that cannot be represented as a ratio is called irrational.
Which of these values is irrational?
(Your partners have the same letter answer as you do.)
Be ready to share your thinking with your partners.

ANSWER C



A) Linear, and th
B) Linear, and th on the graph it
C) Not linear, and begins to incre
D) Not linear, and change is cons

Select the best description of what is hap between the *x*-values –1 and 5 on the g

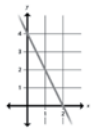
(Your partners have the same letter answer

X	Y
–4	3
–2	2
0	1
2	0

A) $y = 2x$
B) $y = 2x +$
C) $y = -1/2$
D) $y = 1/2x$

Select the equation that describes the t

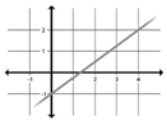
(Your partners have the same letter answer



A) (0, 4), (1, 1
B) (0, 4), (1, 2
C) (0, 4), (1, 2
D) (–1, 6), (0,

Which set of points will fall on the line of t

(Your partners have the same letter answer



A) The slope is 3/4 and the *y*-intercept is (1, 0).
B) The equation is $y = 3/4x$.
C) The equation is $y = 3/4x - 1$.
D) The slope is 3/4 and there is no *y*-intercept.

Which answer choice accurately describes this graph?

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

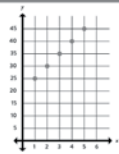
RATE OF CHANGE 5

Write the equation that describes the cost of r for members at Movie Mart. (Use *D* to repres and *M* to represent Movies.) (Your team has th and other information that relate to this e

M	D
2	30
4	40
8	60

M = number of movies *D* = dolla

This table represents the cost of renting movi month of membership. (Your partners have oth that relates to this chart.) Answer the following How many movies must you rent for the cost



Determine the rate of change for this graph. Determ

(Your partners have the situation this grap and the table of values.)

Which is the better deal: $15 per movie with a start-up fee of $10, or $5 per movie with a start-up fee of $20?
(Your team has the equation, graph, and table that represent the better deal.)

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Created using the standards in the Number System and Functions domains, 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 set includes 40 durable, two-color cards per grade level for a total of 120 cards. (Each grade-level deck includes four blank cards for teachers to create their own content.) Teacher's Guide includes suggestions for classroom use, activities, and access to website with additional tasks and resources.

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