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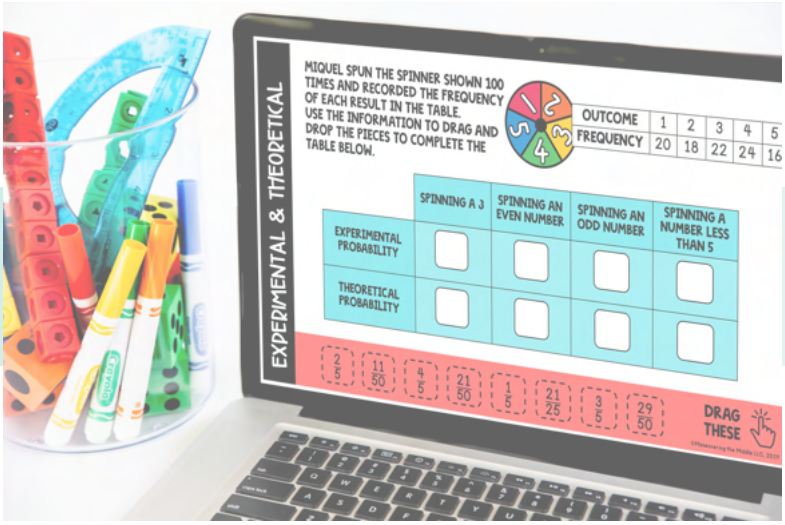

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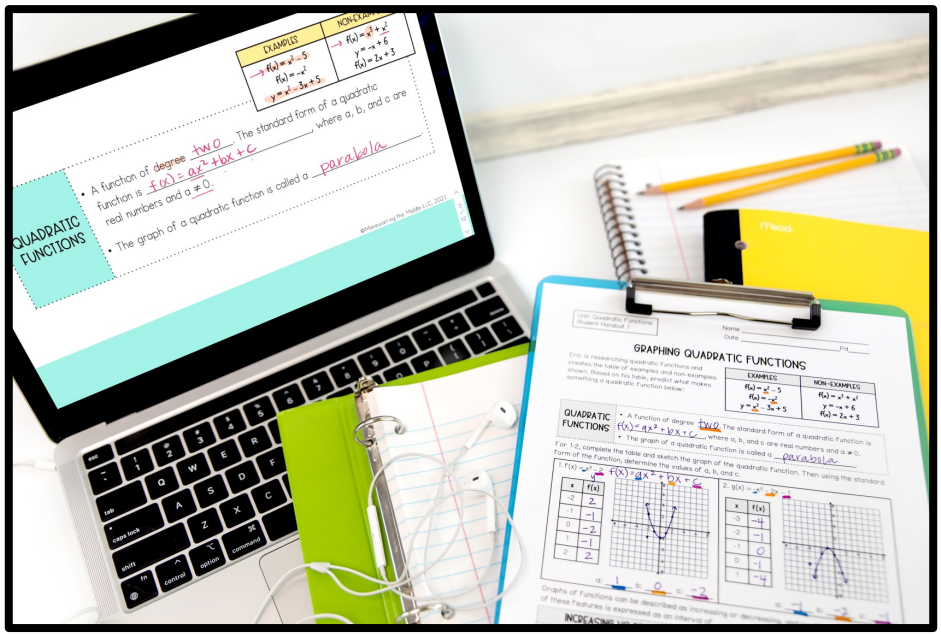
all access

standards-based math curriculum for grades 6-algebra 1



Math curriculum designed to meet students' needs and empower teachers.

- ✓ Grade Level Curriculum: student-friendly guided notes, hands-on activities, teaching slides (coming August 2023), and teacher planning resources
- ✓ Supplemental Digital Components: digital activities, teaching slides, Google Form™ assessments
- ✓ Student Video Library: professional quality videos aligned to student handouts

6th ccss planning guide

A MANEUVERING THE MIDDLE® RESOURCE

what is it?

This resource has been designed to model the process presented in the math training, "A Step-by-Step Plan for Unfinished Learning". Please use the information provided to jump start your planning for the school year.

how does it work?

A planning guide has been included for each of the key topics in Unit 1: Decimal Operations. Each guide will help you prepare for formative assessment opportunities, common student misconceptions, instructional strategies you can use to reach your students and suggestions for utilizing activities to best support your students' needs.

learn more about All Access

The hands-on activities included are a brief sample of one element of our All Access membership. All Access is math curriculum designed to meet students' needs and empower teachers. You can find out more by clicking the link below.

maneuveringthemiddle.com/math-curriculum

adding and subtracting decimals

goal

Students should be able to fluently add and subtract multi-digit decimals using the standard algorithm.

prior skills

In previous grades, students added and subtracted decimals to the hundredths.

related materials

- Unit 1, Student Handout 1

	adding decimals	subtracting decimals
formative assessments	98.7 + 5.19 student handout 1 104 + 11.07 student handout 1	56 – 24.6 student handout 1 67.8 – 4.55 student handout 1
common misconceptions	Students may forget to add/subtract like place values (ex. 1) or may add from left to right starting with the highest place value digits (ex. 2). example 1 0.2 5 + 1 5.3 1 7.8 example 2 5 2.9 + 1 8.3 6 0.1 3	Students may forget to add/subtract like place values (ex. 1) or may subtract the lower value from the higher values rather than regrouping when necessary (ex. 2). example 1 3.8 6 – 2 3.8 4 example 2 6.7 2 – .9 8 6.2 6

adding and subtracting decimals

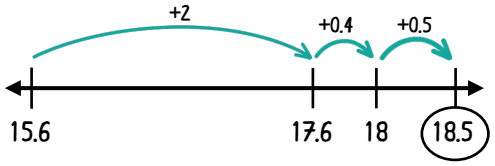
instructional strategies

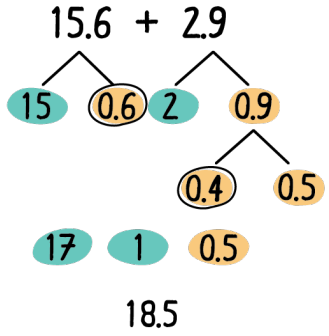
adding decimals

picture it: use an open number line to provide a flexible visual that will help students make sense of their solutions and apply reasonableness

simplify it: consider allowing students to perform the addition in "chunks" in order to strategically get to numbers that are easier to work with

15.6 + 2.9

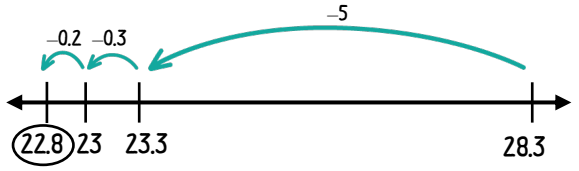




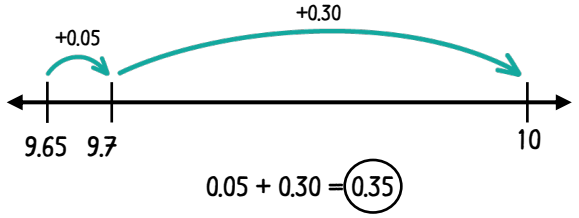
subtracting decimals

simplify it: consider allowing students to subtract in "chunks" on an open number line in order to strategically get to numbers that are easier to work with

28.3 – 5.5



10 – 9.65



The second example is a case where it may be easier for students to "add up" from the number being subtracted in order to find the difference between the two values.

extra practice and resources

Adding and Subtracting Decimals Task Cards*

The task cards included in this activity cover many skills and assess students' understanding by posing questions in various formats. Consider pulling a small group based on the skills they need to practice and using cards with related skills shown below:

- Adding or subtracting decimals (#21-28)
- Adding or subtracting decimals in real-world situations (#1-12, 14-18, 20)
- Adding and subtracting decimals in real-world situations (#13, 19)

Adding and Subtracting Decimals Scavenger Hunt**

Consider using the scavenger hunt in two different ways. First, as a traditional scavenger hunt to promote movement and collaboration. Secondly, as a set of cards that can be scaffolded in a small group setting. The skills practiced on each card are listed below:

- Adding decimals in real-world situations (Cards A, D, G, H)
- Subtracting decimals in real-world situations (Cards B, C, F, J)
- Both adding and subtracting decimals in real-world situations (Cards E, I)

*Adding and Subtracting Decimals Task Cards is included in this PDF on pages 11-22.
**Adding and Subtracting Decimals Scavenger Hunt is included as a part of 6th Grade All Access Membership.

multiplying decimals

goal

Students should be able to fluently multiply multi-digit decimals using the standard algorithm.

prior skills

In previous grades, students multiplied decimals to the hundredths.

related materials

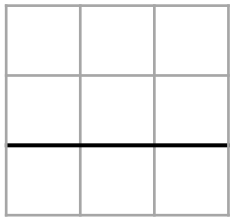
- Unit 1, Student Handout 2

multiplying decimals

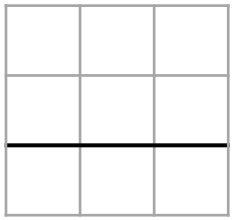
formative assessments

Practice multiplying using the algorithm. Use the grid to keep your work organized.

$$\begin{array}{r} 6.8 \\ \times \quad 3 \\ \hline \end{array}$$



$$\begin{array}{r} 1\ 5 \\ \times\ 0.7 \\ \hline \end{array}$$



student handout 2

common misconceptions

Students may line up the decimals when multiplying (ex. 1) or not move the decimal over the correct number of places in the answer (ex. 2).

example 1

$$\begin{array}{r} 1.5\ 3 \\ \times\ \ .0\ 4 \\ \hline 6.1\ 2 \end{array}$$

example 2

$$\begin{array}{r} 2.4\ 5 \\ \times\ \ 0.3 \\ \hline 7.3\ 5 \end{array}$$

multiplying decimals

multiplying decimals

instructional strategies

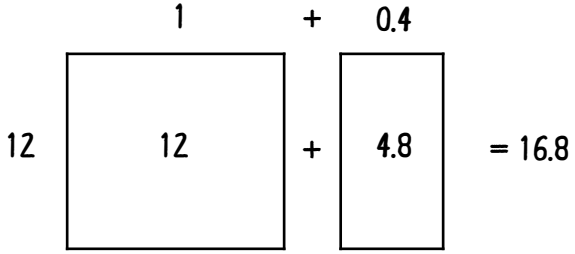
organize it: students can show their work on graph paper in order to keep their work organized if needed

simplify it: allow students to reason through certain problems using their knowledge of doubling and halving as modeled below

"I know that 4.8(5) must be 24, because 4.8(10) = 48. Since 5 is half of 10, the product of 4.8(5) must also be half of 48, which is 24."

model it: students may benefit from viewing values as a sum of their parts and breaking the multiplication into pieces; an area model may also be a helpful visual for students

$$12 \cdot 1.4$$
$$12 \cdot (1 + 0.4)$$
$$(12 \cdot 1) + (12 \cdot 0.4)$$
$$12 + 4.8$$
$$16.8$$



check it: encourage students to build a habit of rounding their values to the nearest whole number to check for reasonableness and avoid errors with decimal placement in the product

extra practice and resources

Multiplying Decimals Mazes*

Consider the differences in the maze activities to differentiate and choose the maze that best meets the needs of your students:

- **Maze #1:** majority of problems are a whole number multiplied by a decimal
- **Maze #2:** majority of problems are decimals multiplied by a decimal

*Multiplying Decimals Mazes are included as a part of 6th Grade All Access Membership.

dividing decimals

goal

Students should be able to fluently divide multi-digit decimals using the standard algorithm.

prior skills

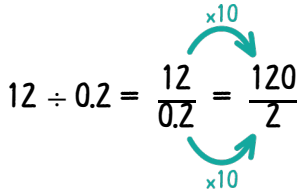
In previous grades, students found whole-number quotients of whole numbers.

related materials

- Unit 1, Student Handout 4
- Unit 1, Student Handout 5

	dividing a decimal by a whole number	dividing by a decimal
formative assessments	$195.3 \div 93 =$ _____ student handout 4 $45.88 \div 62 =$ _____ student handout 4	$210 \div 3.5 =$ _____ student handout 5 $58.42 \div 0.92 =$ _____ student handout 5
common misconceptions	Students may assume the greater number is always the dividend (ex. 1) or may not organize their place values correctly (ex. 2). example 1 $2.5 \div 200$ $\downarrow$ $2.5\overline{)200}$ example 2 $7\overline{)7.35}$ $-7 \downarrow \downarrow$ 035 $-\ 35$ 0	Students may struggle to differentiate the dividend from the divisor in a real-world problem (ex. 1) or may not organize their place values correctly (ex. 2). example 1 $10\overline{)8}$ *Alex bought eight candy bars at the store for $10.00. How much did each candy bar cost?* example 2 $0.5\overline{)0.85}$

dividing decimals

	dividing decimals
instructional strategies	**organize it:** have students use graph paper as their scratch paper to help keep numbers in their appropriate place value as students work through long division examples **organize it:** when students are dividing decimals, consider rewriting the division as a fraction and then scale up by a power of 10 in order to remove the decimal and make sense of "moving the decimal over" the same number of places in the divisor and dividend  **rephrase it:** to help students grasp the meaning of division and check for reasonableness, consider describing division the two ways shown 15.8 ÷ 2 "How many times can 2 go into 15.8?" "If I divide 15.8 into two equal groups, how much will be in each group?"
extra practice and resources	Multiplying and Dividing Decimals He Said, She Said* Consider using the activity cards as an opportunity for error analysis discussion in groups, as a whole class or in a small group setting. The skills practiced on each card are outlined below: • Multiplying Decimals (Cards 2, 3, 6, 9) • Dividing Decimals (Cards 1, 4, 7, 8, 10) • Multiplying and Dividing Decimals (Card 5) Dividing Decimals Solve and Color** Consider working through one example of each type of problem on the page outlined below before allowing students to continue independently. Additionally, consider pulling a small group of students based on the skills to be practiced and using the relevant examples needed. • Dividing a whole number by a whole number (#4, 7, 12) • Dividing a decimal by a whole number (#3, 5, 8) • Dividing a whole number by a decimal (#11) • Dividing a decimal by a decimal (#1, 2, 6, 9, 10) • Real-world application of division (#13, 14, 15, 16)

*Multiplying and Dividing Decimals He Said, She Said is included as a part of 6th Grade All Access Membership.
**Dividing Decimals Solve and Color is included in this PDF on pages 23-26.

Adding & Subtracting decimals

TASK CARDS

Students will be able to apply addition and subtraction of decimals to real world problems.

6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

5.3K Add and subtract positive rational numbers fluently.

7.3B Apply and extend previous understandings of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers.

Ideas for Implementation: Task cards are excellent for classroom practice. Students get hands-on practice and there are many activities to play with task cards.

Teacher Tips: Print on cardstock or laminate to keep cards lasting. You can store them in plastic baggies or on binder rings.

Lead has an atomic mass of 207.19 grams. Mercury has an atomic mass of 200.6 grams. How much greater is the atomic mass of Lead than Mercury?

1

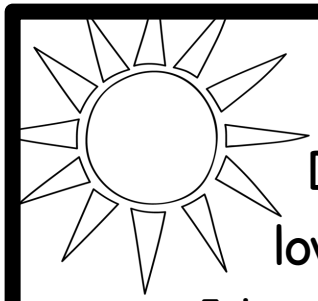
During the 2006 Olympics, a gymnast received the following scores:
8.9, 9.2, 9.15, 9.05

What is the sum of the gymnast's scores?

2

At the end of a very close 400m race, the second-place runner was 1.04 seconds behind the leader, while the third-place runner was 1.5 seconds behind the leader. What is the difference in time between the second and third place runners?

3



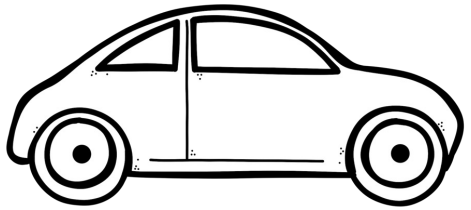
Dallas, Texas has a record low of 56° in the month of July. Today's temperature was 37.2° above the record low. What is today's low temperature?

4

At the summer baseball game, Annie bought two candies for $0.78 each and a bag of popcorn for $2.35. How much did Annie spend at the baseball game?

5

Mrs. Johnson was out running errands. She left her house and traveled 9.8 miles to the grocery store, 6.5 miles to the post office, and 4.12 miles back home. How many miles did Mrs. Johnson travel?



6

The Jackson Jaguars scored an average of 36.8 points per game. Their rivals, the Hometown Heroes, have an average of 44.9 points per game. What is the difference in their averages?

7

Marco's little brother weighs 28.5 kg. If Marco weighs 10.7 kg more than his brother, how much does Marco weigh?

8

In 1997, the cost of mailing a 2 lb package from Miami to Denver was $3.87. In 2012, the same package cost $7.96 to mail the same distance. What is the price increase from 1997 to 2012?

9

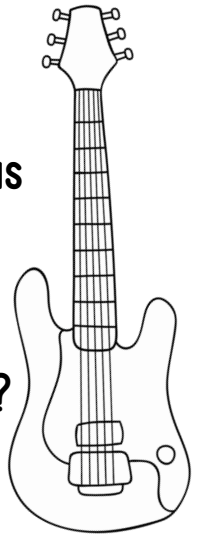
At Super Save Groceries, a 16 oz jar of honey costs $6.29. The same jar of honey costs $8.97 at Corner Mart. How much less is honey at Super Save Groceries?

10

A fence is installed around a rectangular school play yard. The dimensions of the play yard are 26.3 meters by 18.8 meters. How many meters of fencing is needed?

11

Taylor is saving for a new guitar. The guitar costs $225.89. If he currently has $172.95 in his savings account, how much more money does he need to save?



12

Paisley is training for a half marathon. In week 4 of her training, she ran 4.6 miles on Monday, 6.15 miles on Wednesday, and 5.23 miles on Friday. If she needs to run a total of 18 miles this week, how long should she run on Sunday?

13

During a science experiment, the mass of two items is found. Item 1 has a mass of 35.67 kg, while item 2 has a mass of 67.8 kg. What is the difference in the two masses?

14

To get ready for a race, Margo biked 13.6 miles on Monday, 25.48 miles on Tuesday, and 9.24 miles on Wednesday. Describe the procedure Margo can use to find the total number of miles she ran on these three days.

15

The difference between 18.9 and 16.34 can be found between which two numbers below?

A. 1.5 and 2.0
B. 2.0 and 2.5
C. 2.5 and 3.0
D. 3.0 and 3.5

16

The sum of 19.43 and 7.81 can be found between which two numbers?

A. 26.25 and 26.75
B. 26.75 and 27.25
C. 27.25 and 27.75
D. 27.75 and 28.25

17

Hayley's little sister weighs 18.7 kg. If Hayley weighs 17.83 kg more than her sister, how much does Hayley weigh?

18

At the summer baseball game, Annie bought three candies for $0.87 each and a bag of popcorn for $3.17. She pays with a $10.00 bill. How much change should Annie receive?

19

It costs Mrs. Richardson $13.67 to arrange a flower bouquet for a wedding. She charges the bride $35.00 for the arrangement. How much money does Mrs. Richardson profit from each arrangement?

20

Solve.

$4.78 + 9.3$

21

Solve.

$100.7 - 62.9$

22

Solve.

$38.75 + 19.6$

23

Solve.

$57.03 - 11.6$

24

Solve.

$154.7 + 4.39$

25

Solve.

$238 - 89.3$

26

Solve.

$94 + 58.46$

27

Solve.

$95.9 - 27.88$

28

Unit: Decimals
Task Cards

Name_____

Date _____ Pd ____

Adding & Subtracting Decimals Task Cards

Show your work for each problem in the correct box.

1	2	3	4
5	6	7	8
9	10	11	12

13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28

Unit: Decimals
Task Cards

Name KEY
Date _____ Pd ____

Adding & Subtracting Decimals Task Cards

Show your work for each problem in the correct box.

1 6.59 grams	2 36.3	3 0.46 seconds	4 93.2°
5 $3.91	6 20.42 miles	7 8.1 points per game	8 39.2 kg
9 $4.09	10 $2.68	11 90.2 m	12 $52.94

13 2.02 miles	14 32.13 kg	15 line up the decimals, fill in placeholders, add, bring decimal down	16 C
17 B	18 36.53 kg	19 $4.22	20 $21.33
21 14.08	22 37.8	23 58.35	24 45.43
25 159.09	26 148.7	27 152.46	28 68.02

DIVIDING DECIMALS
SOLVE AND COLOR

Students will be able to divide decimals using the standard algorithm.

6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

5.3G Solve for quotients of decimals to the hundredths, up to four-digit dividends and two-digit whole number divisors, using strategies and algorithms, including the standard algorithm.

6.3E multiply and divide positive rational numbers fluently

7.3B Apply and extend previous understandings of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers.

Ideas for Implementation: Even middle school students love to color! This is an easy-prep way to keep students practicing math while having fun. This is also a great activity for a substitute or for when you are pulling small groups.

Directions: Students will work each problem in the appropriate box. Then, they will find the answer and color that problem number the corresponding color. For example: Solve problem 4, and find the solution to be green. Then, on the coloring sheet, color all of the 4s green.

Unit: Decimals
Solve and Color

Name _____

Date _____ Pd_____

dividing decimals Solve And Color

Solve each problem. Then find the answer and color it the corresponding color.

1 74.1 ÷ 5.7	**2** 20.64 ÷ 2.4	**3** 16.2 ÷ 20	**4** 1,215 ÷ 9
5 316.8 ÷ 44	**6** 21.39 ÷ 3.1	**7** 506 ÷ 92	**8** 48.6 ÷ 9
9 29.1 ÷ .97	**10** 239.76 ÷ 14.8	**11** 168 ÷ 3.5	**12** 20 ÷ 16
13 A piece of fabric measures 36 yards long. If each curtain panel requires 2.4 yards of fabric. How many curtain panels can be sewn?	**14** Mrs. Mitchell is making bread. Each loaf of bread requires 1.5 cups of flour. If she has 12 cups of flour, how many loaves of bread can she make?	**15** A motorcycles gas tank holds 4.5 gallons. If the motorcycle can travel 225 miles. How many miles per gallon does the motorcycle average?	**16** A pitcher of lemonade holds 64.8 ounces. If each serving is 7.2 ounces, how many servings are there in a pitcher?

Red	yellow	Pink	Blue	Light green	orange	dark green	Purple
48	13	9	0.81	1.25	50	5.5	6.9
8.6	5.4	8	7.2	30	135	15	16.2

Unit: Decimals
Solve and Color

Name KEY

Date _____ Pd_____

dividing decimals Solve And Color

Solve each problem. Then find the answer and color it the corresponding color.

1 74.1 ÷ 5.7 13	**2** 20.64 ÷ 2.4 8.6	**3** 16.2 ÷ 20 0.81	**4** 1,215 ÷ 9 135
5 316.8 ÷ 44 7.2	**6** 21.39 ÷ 3.1 6.9	**7** 506 ÷ 92 5.5	**8** 48.6 ÷ 9 5.4
9 29.1 ÷ .97 30	**10** 239.76 ÷ 14.8 16.2	**11** 168 ÷ 3.5 48	**12** 20 ÷ 16 1.25
13 A piece of fabric measures 36 yards long. If each curtain panel requires 2.4 yards of fabric. How many curtain panels can be sewn? 15	**14** Mrs. Mitchell is making bread. Each loaf of bread requires 1.5 cups of flour. If she has 12 cups of flour, how many loaves of bread can she make? 8	**15** A motorcycles gas tank holds 4.5 gallons. If the motorcycle can travel 225 miles. How many miles per gallon does the motorcycle average? 50	**16** A pitcher of lemonade holds 64.8 ounces. If each serving is 7.2 ounces, how many servings are there in a pitcher? 9

Red	yellow	Pink	Blue	Light green	orange	dark green	Purple
48	13	9	0.81	1.25	50	5.5	6.9
8.6	5.4	8	7.2	30	135	15	16.2

Unit: Decimals
Solve and Color

Name _____

Date _____ Pd_____

deciMALS SoLve ANd COLOR

Solve each problem, then color the corresponding number.