learning focus:

✓ add, subtract, multiply, and divide positive rational numbers (fractions and decimals)

✓ use patterns and reciprocals of fractions

✓ understand and apply positive rational number operations in real-world situations

POSITIVE RATIONAL NUMBERS UNIT

6th GRADE

15 DAY TEKS-ALIGNED UNIT

POSITIVE RATIONAL NUMBERS UNIT
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POSITIVE RATIONAL NUMBERS PACING GUIDE

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
Adding and Subtracting Decimals*	Multiplying Decimals	Dividing Whole Numbers*	Dividing Decimals	

Student Handout 1
Homework 1

DAY 6
Decimal Operations Quiz

Quiz 1

DAY 11
Dividing Fractions

Student Handout 1
Homework 10

*These topics are p...

...l NUMBERS

...Pd___

... They are given the challenge of ... code to open the treasure chest. ... e secret code!

TASK 1

...re challenged by needing to convert a ... decimal and a decimal to a percent. ... nge gives them a clue card. Use the ... fill in the empty boxes, showing the ... a percent and and a decimal. Then, ... al numbers from least to greatest.

□ → □
□ ← 0.19
□ → □
□ ← 0.333

A MANEUVERING THE MIDDLE ® RESOURCE

POSITIVE RATIONAL NUMBERS

6th GRADE

a 15 day TEKS-aligned unit
TEKS: 6.2E, 6.3A, 6.3B, 6.3E

ready-to-go, scaffolded student materials

POSITIVE RATIONAL NUMBERS UNIT
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A MANEUVERING THE MIDDLE® RESOURCE

POSITIVE RATIONAL NUMBERS 6th GRADE

a 15 day TEKS-aligned unit
TEKS: 6.2E, 6.3A, 6.3B, 6.3E

student friendly + real-world application

use of grade level modeling

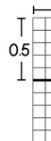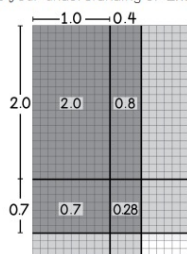Unit: Positive Rational Numbers
Student Handout 2

Name _____
Date _____ Pd _____

MULTIPLYING DECIMALS

The area models below represent two multiplication problems.

Example A: $2.7 \cdot 1.4 =$ _____   Example B: $0.5 \cdot 2.5 =$ _____

Use your understanding of Example A to complete the model for Example B.

	1.0	0.4
2.0	2.0	0.8
0.7	0.7	0.28

MULTIPLYING DECIMALS WITH AN ALGORITHM

1. Multiply the digits. There is no need to

2. The product will of (behind) the de

Determine how many digits will be behind

1.	2.
$46.7 \cdot 16$	$1.58 \cdot 0.23$

We can use estimation

Round each decimal to the nearest whole

5.		6.
1.9 X 6 → x 6		0. X
1 1.4		4.

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

8. 6.8 X 3	9. 1 5 X 0.7	10. 0.4 1 X 5

Solve questions 11-13 to show your u

11. $20.8 \cdot 9 =$ _____	12.

Apply your understanding of decimal

14. Amber walks her golden retriever ___ miles after work each day. If she work ___ a week, how many miles does Amber w ___ golden retriever in one week?

16. Sidney and Jorge solved the proble ___ correct solution be?

SIDNEY	JOR
$62.8 \cdot 3.7$	50.9
2323.60	244

Summarize today's lesson:

Unit: Positive Rational Numbers
Homework 2

Name _____
Date _____ Pd _____

MULTIPLYING DECIMALS

Each of the cards on the left has the same solution as one of the cards on the right. Find the cards with matching solutions to complete the sentences below.

A $12 \cdot 4.6 =$ _____

E Shelly is buying 13.4 pounds of chicken to make a large casserole. The chicken is on sale for $1.70 per pound at the grocery store. How much will it cost Sally to purchase the chicken?

B $(3.4)(6.7) =$ _____

F $1.93 \cdot 9 =$ _____

C On a Saturday morning, Alonso went to the farmer's market. He bought 3 eggplants for $5.79 each. What will be the total cost of the eggplants?

G Jordan jogs 6.9 miles each day. How many total miles does he jog in 8 days?

D Maryanne is making a bracelet at camp using beads that are 1.64 cm long. What will be the length of her bracelet if she uses 19 beads?

H $(7.6)(4.1) =$ _____

1. Card A and Card _____ have the same solution of _____.
2. Card B and Card _____ have the same solution of _____.
3. Card C and Card _____ have the same solution of _____.
4. Card D and Card _____ have the same solution of _____.

self-checking practice

POSITIVE RATIONAL NUMBERS

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streamline your planning process with unit overviews

✓ key vocabulary

✓ vertical alignment

sample pacing calendar

POSITIVE RATIONAL NUMBERS
OVERVIEW

READINESS STANDARDS

6.3E Multiply and divide positive rational numbers fluently.

SUPPORTING STANDARDS

6.2E Extend representations for division to include fraction notation such as *a/b* represents the same number as *a ÷ b* where *b ≠ 0*.

6.3A Recognize that dividing by a rational number and multiplying by its reciprocal results in equivalent values.

6.3B Determine with and without computation, whether a quantity is increased or decreased when multiplied by a fraction, including values greater than or less than one.

BIG IDEAS
- Numbers can be represente
- Rational numbers can be u

ESSENTIAL QUESTION
- What is the relationship bet
- What pattern do you notice
- How do I know which math

POSITIVE RATIONAL NUMBERS
PACING GUIDE

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
Adding and Subtracting Decimals*	Multiplying Decimals	Dividing Whole Numbers*	Dividing Decimals	Dividing by a Decimal
Student Handout 1 Homework 1	Student Handout 2 Homework 2	Student Handout 3	Student Handout 4	Student Handout 5

DAY 6	DAY 7
Decimal Operations Quiz	Adding and Subtracting Fractions*
Quiz 1	Student Handout 6 Homework 6

DAY 11	DAY 12
Dividing Fractions II	Dividing Fractions Application
Student Handout 10 Homework 10	Student Handout 11 Homework 11

*These topics are not part of the 6th grade TEKS, but included for revie

POSITIVE RATIONAL NUMBERS
OVERVIEW

TOPIC	TEACHING TIPS
Adding and Subtracting Decimals	• This topic should be a review from fifth grade. Feel free to exclude the lesson or replace it with an activity. • Consider bringing a few envelopes (or boxes) and marking a dollar amount on the front, including a variety of coins inside. Tell students that the value on the outside is what should be in the envelope. Then, ask students to find the missing amount. Tables or groups can switch envelopes and try again. • When discussing the steps for adding and subtracting decimals, some students may say line up the decimal, but try to encourage the concept of place value. • For additional practice, consider incorporating the Desmos activity, "The Decimal Challenge."
Multiplying Decimals	• Because multiplying decimals is so similar to multiplying whole numbers, there are often small errors regarding the decimal placement. Have students practice checking for reasonableness by rounding to the nearest whole number and determining if their solution makes sense. • Students who are struggling with the algorithm can continue to use an area model to break down the process.
Dividing Decimals	• A great tip for dividing decimals is to have students use graph paper as their scratch paper. This keeps every number in the appropriate place value as they do long division. • Consider bringing in a dollar and discussing making change, as it pertains to taking a whole and dividing it into smaller pieces. Students are almost always most familiar with examples involving money.

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teaching ideas

POSITIVE RATIONAL NUMBERS

6th GRADE

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TEKS: 6.2E, 6.3A, 6.3B, 6.3E

unit study guide + assessments

✓ quizzes

✓ editable unit test

Unit: Positive Rational Numbers
Quiz 1

Name _____
Date _____ Pd _____

QUIZ: DECIMAL OPERATIONS

Answer the questions below. Be sure to show work.

1. Ms. Sloan asked her students to multiply 15.4 by 7.2. In the solution, how many digits will be behind the decimal?

a. 0
b. 1
c. 2
d. 3

Answers
1. _____
2. _____
3. _____

2. Which of the students below correctly

a. Gayle only
b. Ian only
c. Both Gayle and Ian
d. Neither Gayle nor Ian

165.

Answer the questions below. Be sure to

3. Oscar is building a fence and purchase 2.91 meters long. How many meters of fe

4. The average mail carrier walks 5.3 kilo walk in a 6-day week?

5. A pitcher of lemonade holds 147 ounce servings are in one pitcher?

Unit: Positive Rational Numbers
Review

Name _____
Date _____ Pd _____

POSITIVE RATIONAL NUMBERS UNIT STUDY GUIDE

Solve each of the problems below. These represent the types of questions on your test. Be sure to ask questions if you need more help with a topic.

I CAN FLUENTLY ADD AND SUBTRACT MULTI-DIGIT DECIMALS.

1. $284.78 + 468.43 =$ _____	2.	3. Michael is purchasing
4. $863.35 - 127.69 =$ _____	5.	

I CAN FLUENTLY MULTIPLY MUL

7. $6.34 \cdot 3.4 =$ _____
8.

SIXTH GRADE CURRICULUM

POSITIVE RATIONAL NUMBERS

UNIT TWO: ANSWER KEYS

answer keys included