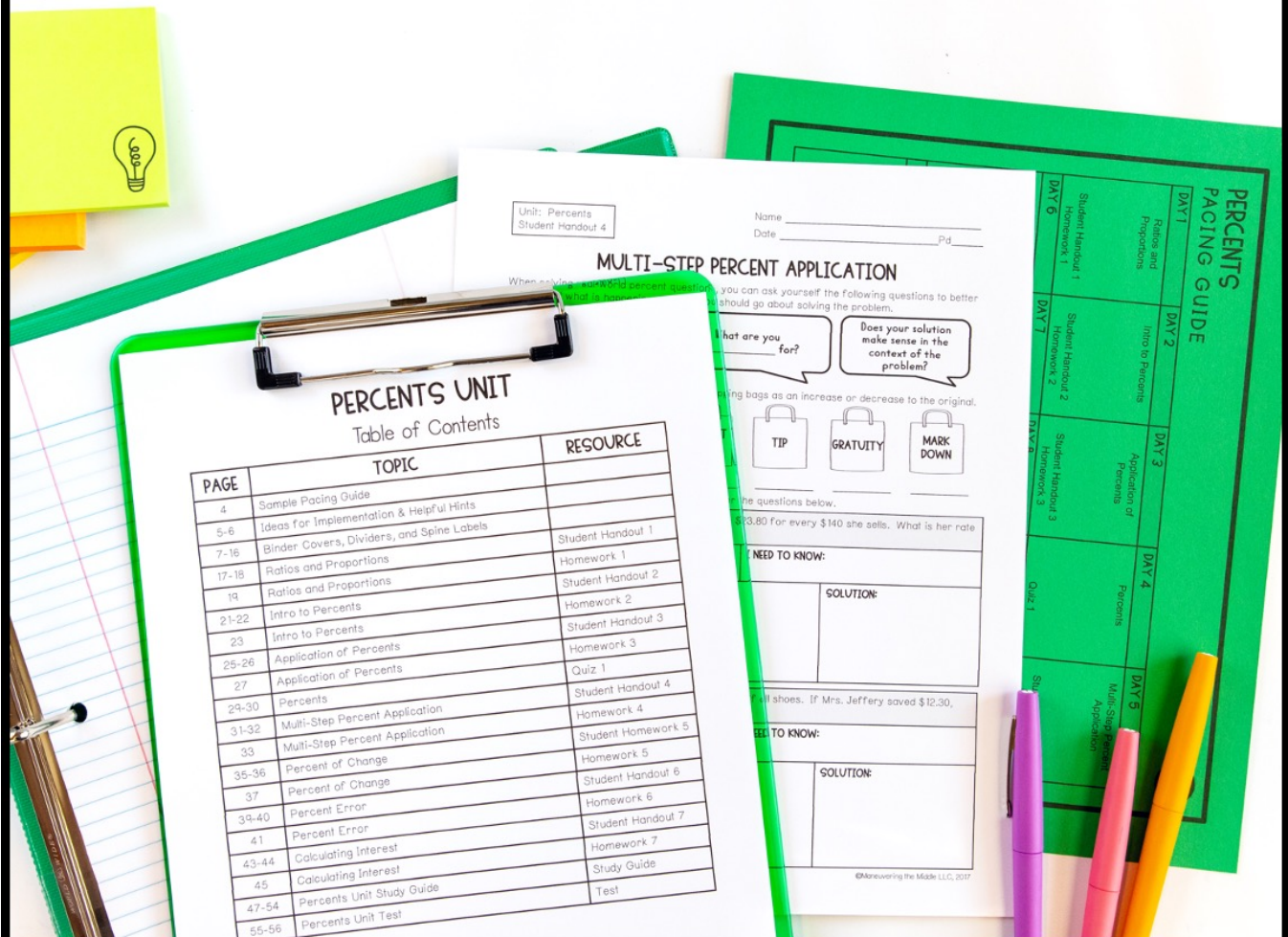# learning focus:

✓ use proportional relationships to solve multi-step ratio and percent problems

✓ solve problems involving simple interest

✓ apply percents to real-world situations, including percent of change and percent error

PERCENTS UNIT
10 DAY CCSS-ALIGNED UNIT

7th GRADE

Unit: Percents
Student Handout 4

Name _____
Date _____ Pd ___

MULTI-STEP PERCENT APPLICATION

When solving real-world percent questions, you can ask yourself the following questions to better _____ what is happening _____ should go about solving the problem.

What are you _____ for?

Does your solution make sense in the context of the problem?

_____ing bags as an increase or decrease to the original.

| TIP | GRATUITY | MARK DOWN |

_____ the questions below.

_____ $23.80 for every $140 she sells. What is her rate

NEED TO KNOW:

SOLUTION:

_____ shoes. If Mrs. Jeffery saved $12.30,

NEED TO KNOW:

SOLUTION:

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PERCENTS UNIT
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A MANEUVERING THE MIDDLE ® RESOURCE

PERCENTS

7th GRADE

a 10 day CCSS-aligned unit
CCSS: 7.RP.2, 7.RP.3

ready-to-go, scaffolded student materials

PERCENTS UNIT
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PERCENTS

a 10 day CCSS-aligned unit
CCSS: 7.RP.2, 7.RP.3

7th GRADE

student friendly + real-world application

use of grade level modeling

Unit: Percents
Student Handout 2

Name _____
Date _____ Pd _____

INTRO TO PERCENTS

Leona and Paris were looking at a model in Mrs. Henry's class. Leona says that the model represents 12% because 12 squares were shaded. Paris says that isn't true. How could Paris explain her reasoning to Leona?

PERCENTAGES
- Percent is a pa
- Percents can b

Ex: 78% =
Ex: $\frac{3}{5}$ →

Write the fraction, decimal, and percent

1.

fraction: _____
decimal: _____
percent: _____

2.

SOLVING PERCENT PROBLEMS
- Percent proble
- Set up a _____ solve like a pro
- Plug the given for the missing

$\frac{\%}{100} = \frac{part}{whole}$

rotate 90°

1   5
x   100%

PART = % · WHOLE
(AS A DECIMAL)
← (DECIMAL)
← (PERCENT)

Use your understanding of proportions

4. Use the tape diagram below to set u
proportion and/or equation.

x   40
20   100%

Use your understanding of percent pr

6. What number is 12% of 315?

7. 60

9. Kai knows that 50% of a number is
150% of the number is?

_____

10. Five proportions are given below.
solve the problem, "What is 36% of 15

$\frac{x}{150} = \frac{36}{100}$ $\frac{150}{x} = \frac{36}{100}$

Summarize today's lesson:

Unit: Percents
Homework 2

Name _____
Date _____ Pd _____

INTRO TO PERCENTS

1. Which of the following proportions could be used to find, "42 is 35% of what number?"

a. $\frac{35}{100} = \frac{x}{42}$ c. $\frac{x}{35} = \frac{42}{100}$

b. $\frac{35}{x} = \frac{42}{100}$ d. $\frac{35}{100} = \frac{42}{x}$

2. What does the shaded portion represent?

fraction: _____
decimal: _____
percent: _____

Use your understanding of percent proportions and percent equations to solve the questions below.

3. 36 is 30% of what number?

4. What percent of 88 is 33?

5. What number is 65% of 840?

6. What is 125% of 64?

7. 120% of what number is 54?

8. 19 is what percent of 95?

9. Mr. Glover wrote the problem, "Find 16% of 50" on the whiteboard and asked students to create a proportion or equation to solve the problem. Circle the name of anyone who made a true statement.

MAXINE
I can use the proportion $\frac{x}{50} = \frac{16}{100}$ to solve.

THEO
I can find 16% because I can divide 50 by 16.

BRYAN
I know that 16% of 50 is going to be less than 10, because 10% is 5 and 20% is 10.

ELAINE
I can change 16% to 1.6 and multiply it by 50.

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higher level analysis

PERCENTS

7th GRADE

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streamline your planning process with unit overviews

✓ **key vocabulary**

✓ **vertical alignment**

sample pacing calendar

teaching ideas

PERCENTS OVERVIEW

CCSS

STANDARDS

7.RP.2 Recognize and represent proportional relationships between quantities.

7.RP.3 Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, and percent error.

BIG IDEAS

- Percents exist in everyday li[...]
- A percent is a ratio out of 10[...]

ESSENTIAL QUESTION[...]

- How do proportions explain [...]
- What information and strate[...]
- When would estimation be a[...]
- How do I know that a relatio[...]

PERCENTS PACING GUIDE

CCSS

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
Ratios and Proportions	Intro to Percents	Application of Percents	Percents	Multi-Step Percent Application
Student Handout 1 Homework 1	Student Handout 2 Homework 2			

DAY 6	DAY 7
Percent of Change	Percent Error
Student Handout 5 Homework 5	Student Handout 6 Homework 6

PERCENTS OVERVIEW

CCSS

TOPIC	TEACHING TIPS
Proportions	• A great engagement video: Brainpop.com – Math – Proportions (this one is free)
Percent Estimation	• A great engagement video: www.flocabulary.com – search Percents
Percent Proportions and Equations	• Bring a king size Hershey bar to class. Discuss what size it is and then draw the connection to a percent bar. Ask students to describe how many rectangles would be one-half, one-fourth, etc.
Percent in Real Life	• The key to this lesson is that students understand the vocabulary and the implications of the math. The process for solving a percent problem remains the same, but it is easy to not answer the question completely.
Percent of Change	• Use the census for your local town to describe the historic population of your area. Discuss how the area has changed and how that can be represented mathematically.
Percent Error	• This topic revolves around students' firm understanding of the various terms associated with percent error (i.e. measured value, approximate value, exact value, calculated value). Consider using the vocabulary interchangeably.
Simple Interest	• Because this formula uses so many variables and the various specifications (in years, percent as a decimal, etc), consider creating a large anchor chart with the formula. • Try using whiteboards and just having students set up the formula correctly to ensure that they are understanding the most complicated portion.

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a 10 day CCSS-aligned unit
CCSS: 7.RP.2, 7.RP.3

unit study guide + assessments

✓ **quizzes**

✓ **editable unit test**

Unit: Percents
Quiz 1

Name _____
Date _____ Pd _____

QUIZ: PERCENTS

Answer the questions below. Be sure to show work and justify your thinking.

Answers
1. _____
2. _____
3. _____

1. A 12,000-gallon pool is being filled at a rate of 40 gallons per minute. At this rate, how many minutes will it take to fill this pool $\frac{3}{4}$ full?

2. The scale on a map is 2 cm = 25 miles next town at 5 cm. How many miles away

3. Which set of numbers is equivalent to

A. 0.75, $\frac{3}{5}$ B.

C. $\frac{3}{4}$, 0.075   D.

4. What is 25% of 80?

Unit: Percents
Review

Name _____
Date _____ Pd _____

PERCENTS 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 USE PROPORTIONS TO SOLVE PROBLEMS.

1. At the neighborhood Fourth of July party Mrs. O'Conner plans to serve banan She plans to make 2 batches for eve people attending. If 72 people will at Fourth of July party, how many batc Mrs. O'Conner need to make?

2. Find the missing value

3. A gear rotates 8 times every 15 s Based on this information, put a chec next to any true statement below.

The gear rotates 48 times in 90 seconds.

The gear 16 times secon

The gear rotates 32 times in one minute.

The gear 24 times secon

5. A dolphin jumps 54 times in a 6-h At this rate, how many jumps would b expected in a 2-hour period?

SEVENTH GRADE CURRICULUM

PERCENTS

UNIT FIVE: ANSWER KEYS

answer keys included

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