Grade Six Chapter 5 – Percents
Overview & Support

Standards:

Understand ratio concepts and use ratio reasoning to solve problems.

6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.

c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.

Suggested Routines:

- shade hundreds grid, write fraction, decimal, and percent equivalent
- focus on multiplying by powers of 10 and benchmark decimals
- use double number lines
- show relationships between benchmark fractions, benchmark decimals, and benchmark percents
- use percent bar models. See framework p. 13. (https://www.cde.ca.gov/Ci/ma/cf/documents/mathfwgrade6lmg2.pdf)
- Number Talks - partners, groups (especially on problem-solving lessons)

Suggested Resources:

- Read *Forecast: Sunny Skies!* from the Grab and Go Differentiated Centers Kit

(Students gather data and represent it as a fraction and as a percent.)

- *Number Talks: Fractions, Decimals, and Percents* pgs.114-119

https://players.brightcove.net/5387496875001/default_default/index.html?videoId=5441101677001
(video of the number talk)

- 3 Act Task - "Calvin's Clearance" (finding the percent of a number)

https://tapintoteenminds.com/3act-math/calvins-clearance/
http://threeacts.mrmeyer.com/neptune/
https://mrmeyer.com/threeacts/superbear/
(There are MANY 6RP.3 3 Act Tasks on Dan Meyer's site)

Manipulatives/Tools:

hundreds grids
double number line
tape diagrams/bar models
equivalent ratio tables

Vocabulary:

percent (per hundred)
ratio
equivalent fractions
equivalent ratios
simplify
percent bar
benchmark percentages/fractions/ decimals

Strategies for Chapter:

- hundreds grids
- double number lines
- connect percents to fractions and decimals.
- tape diagram/percent bar models

- ratio reasoning by decomposition

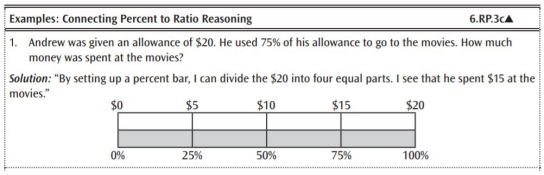
Color Coding:

Green (G)- The lesson accurately reflects the Framework standard(s).
Yellow (Y) - This lesson includes notes to refer to while planning the lesson.
Red (R) - This lesson does not accurately reflect the Framework standard(s). Skip the lesson.

Essential Question:

How can you use ratio reasoning and tools to solve percent problems?

Lesson-by-Lesson Overview:

Lesson #, Standard	Title	Materials	Vocab	Notes
5.0 G Show What You Know	Show What You Know	100s grid	Decimal Division Quotient Percent Rate Simplify Equivalent Ratios	Students will revisit decimal models, long division, and multiplying with decimals.
5.1 **G** 6.RP.3c	Model Percents	100s grid	Ratio Per 100 Percent Shade Model Models Comparison Equivalent ratio, fraction, decimal, percent	**Framework** states using tables, tape diagrams and double number lines to represent percent problems.  Examples: Connecting Percent to Ratio Reasoning 6.RP.3c 1. Andrew was given an allowance of $20. He used 75% of his allowance to go to the movies. How much money was spent at the movies? *Solution:* "By setting up a percent bar, I can divide the $20 into four equal parts. I see that he spent $15 at the movies." $0 $5 $10 $15 $20 0% 25% 50% 75% 100% Connect percents to the number of squares shaded out of 100 on the 100s grid. (lesson focus)
5.2 **G** 6.RP.3c	Write Percents as Fractions and Decimals	100s grid	Ratio Per 100 Percent Comparison Equivalent ratio, fraction, decimal, percent Simplify	It may be helpful to have students write the equivalent decimal and fraction each time to show how all three representations are connected.

5.3 **G** 6.RP.3c	Write Fractions and Decimals as Percents	100s grid	Ratio Per 100 Percent Equivalent ratio, fraction, decimal, percent Simplify	
Mid-Chapter Checkpoint				
5.4 **Y** 6.RP.3c	Percent of a Quantity	Double number line, Percent table	Percent Quantity Double number line Tape diagram Model/tool	Connect percents to ratio reasoning. (See framework) https://www.cde.ca.gov/Ci/ma/cf/documents/mathfwgrade6lmg2.pdf Focus on using the double number line and the tape diagram/bar model. Use ratio reasoning to decompose percents to find values. Students should use multiple methods to solve problems.
5.5 **G** 6.RP.3c	Problem Solving: Percents	Double number line, Percent table	Percent Quantity Double number line Tape diagram/bar model	Focus on using the tape diagram/bar model.
5.6 **G** 6.RP.3c	Find the Whole from a Percent	Double number line, Percent table	Percent Whole Double number line Tape diagram Model/tool	Continue to focus on using **double number, tape diagrams, bar models, part-part-whole** to support students' thinking in addition to equivalent ratios.
End of Chapter Assessment				
Reteach Options (1 day)	Reteach standards from this unit to help meet students' need. Some ideas for reteach activities are listed below: • Math centers or math games focused on unit standards • Small group instruction focused on a single standard			

	● Whole group instruction focused on a single standard ● My Favorite No – Rewrite student work with an error and work as a class to identify positives in the work and areas that need to be revised ● Select 1 – 3 problems to resolve in their groups and discuss whole class. We want new learning to occur on this day that helps students over misconceptions. ● Complete the "Performance Task" from Go Math! In the Assessment Book in small groups. Share strategies and discuss whole class. ● Use the Reteach activities based on standards that need intervention.