Grade: 6 Unit: 1	Ratios and Proportional Relationships	6 Weeks

Progression	
5th Grade	Students multiplied and divided numbers fluently, including decimals to the hundredths place. Work with fractions focused on addition and subtraction with unlike denominators, multiplication of fractions by fractions, and division of fractions by whole numbers. Students were expected to work with and understand equivalent fractions, but were not required to reduce fractions to simplest form.
6th Grade	**Students will learn to: understand the concept of a ratio and apply proportional relationships to solve real-world problems. This will include work with unit rates, percentages, and measurement.**
7th Grade	Students will extend their work by: solving multi-step word problems with ratios, using equations to represent rations, and applying ratios in problems with complex fractions.

STUDENT LEARNING GOALS

Mathematics Standards *(Appendices A & B)*

6.RP.1: Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."*

6.RP.2: Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 0, and use rate language in the context of a ratio relationship. *For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger."* **(limited to non-complex fractions)**

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.*

A: Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.

B: Solve unit rate problems including those involving unit pricing and constant speed.*For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?*

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.

D: Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

MP1: Make sense of problems and persevere in solving them.

MP6: Attend to precision

Technology Integration *(Appendix C)*	21st Century Skills *(Appendix D)*	Key Vocabulary	
IS1. Information Strategies IS2. Information Use	TCS1. Use of Information TCS5. Problem Solving	**Equivalent Ratios** **Percent** **Rate**	**Ratio** **Unit Price** **Unit Rate**

Enduring Understandings

- I can write a ratio to describe the relationship between two quantities
- I can find the rate and unit rate associated with a given ratio
- I can compare ratios and find equivalent ratios
- I can solve unit rate problems
- I can solve percent problems

Essential Questions

- How can I use a ratio to describe the relationship between two quantities?
- What are some types of ratios, and how can they be used to solve problems?

Assessment Plan

Summative Assessment(s)/Performance Based Assessments including 21st Century Learning	Formative and Diagnostic Assessment(s)
RCC Interim Assessment, Student p.48-49 RCC Performance Task, Student p.50	STAR Math Assessment (Fall) RCC Embedded Tasks and Assessments

Learning Plan Components

Text	**Ready Common Core Mathematics Instruction 6**, 2014, Curriculum Associates, ISBN: 978-0-7609-8641-7
Print	**Ready Common Core Mathematics Teacher Resource Book 6**, 2014, Curriculum Associates, ISBN: 978-0-7609-8648-6
Electronic	www.teacher-toolbox.com www.stratfordmath.wikispaces.com www.xtramath.org
Week 1	Students will: • Understand the concept of a ratio as a way of expression relationships between quantities • Write a ratio to describe the relationships between two quantities • Write a ratio using three different formats: *a* to *b*, $\frac{a}{b}$, *a:b* • Use ratio language *(for every, for each)*

Lessons	Tasks / Activities	Worksheets	Technology
RCC Lesson 1: Ratios	Hands-On (p.8) Visual (p.4) Differentiation (p.10)	CC Practice (p.9)	Teacher-Toolbox (1 Tutorial, 1 Tool for Instruction)
Week 2	Students will: • Understand the concept of a unit rate • Use rate and unit rate language • Find rates and unit rate		
Lessons	**Tasks / Activities**	**Worksheets**	**Technology**
RCC Lesson 2: *Understand* Unit Rate	Hands-On (p.12) Visual (p.14) Performance (p.17) Differentiation (p.18)		Teacher-Toolbox (1 Tutorial, 2 Tools for Instruction)

Week 3	Students will: • Use a table to find equivalent ratios • Find missing values in equivalent ratio tables • Plot pairs of values in a table on a coordinate plane • Use a table and graph to reason about equivalent ratios • Use a table and graph to compare ratios		
Lessons	**Tasks / Activities**	**Worksheets**	**Technology**
RCC Lesson 3: Equivalent Ratios	Hands-On (p.21, 28) Visual (p.22) Differentiation (p.28)	CC Practice (p.27)	Teacher-Toolbox (2 Tutorials, 2 Tools for Instruction)
Week 4	Students will: • Solve unit rate problems about unit pricing • Solve unit rate problems involving constant speed • Use ratio reasoning to convert measurement units within the same system and between different systems		
Lessons	**Tasks / Activities**	**Worksheets**	**Technology**
RCC Lesson 4: Solve Problems with Unit Rate	Hands-On (p.30, 40) Visual (p.36) Differentiation (p.40)	CC Practice (p.39)	Teacher-Toolbox (1 Tutorial, 2 Tools for Instruction)
Week 5	Students will: • Understand percent as a rate per hundred • Find a percent of a quantity as a rate per hundred • Solve percent problems involving finding the whole		
Lessons	**Tasks / Activities**	**Worksheets**	**Technology**
RCC Lesson 5: Solve Problems with Percent	Hands-On (p.47, 50) Visual (p.43) Differentiation (p.50)	CC Practice (p.49)	Teacher-Toolbox (2 Tutorials, 2 Tools for Instruction)
Week 6	Students will: • Demonstrate mastery of the unit objectives		
Summative Assessment		**Performance Task**	
RCC Unit 1 Interim Assessment -Student p. 48-49 -Scoring Guide (p. 51)		RCC Unit 1 Performance Task -Student p. 50 -Rubric (p. 52-53)	