### Math - Ratios Unit Organizer

**6th Grade Core Knowledge - Huey/Duroux/Canfield**

**Summary**

Students will understand that ratios provide the ability to show a relationship between two or more quantities. Students will be able to create equivalent ratios and complete missing quantities in charts and tables. In addition, students will use ratio concepts in real-life problems. Students will demonstrate their knowledge of ratios by completing various quizzes, homework assignments, and the unit assessment.

**The Big Idea**

In mathematics, ratios are used to compare two or more quantities. These ratios can then be used in a variety of real life applications such as cooking, investing, and saving.

**Colorado State Standards**

*(same as Common Core)*

**Common Core Standards**

**MA 6.1.1.a**: Apply the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.

**MA 6.1.1.b**: Apply 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.

**MA 6.1.1.c.i**: 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.\**

**MA 6.1.1.c.ii**: Use tables to compare ratios.

**MA 6.1.1.c.iii**: Solve unit rate problems including those involving unit pricing and *constant speed.\**

**MA 6.1.1.c.vii**: Express the comparison of two whole number quantities using differences

part-to-part ratios, and part-to-whole ratios in real contexts, including investing and saving.

**L.6.6** - Students will acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

**Core Knowledge Unit**

Ratio and Proportion

• Solve proportions, including word problems involving proportions with one unknown.

• Use ratios and proportions to interpret map scales and scale drawings.

• Set up and solve proportions from similar triangles.

• Understand the justification for solving proportions by cross-multiplication.

**Core Knowledge Language Arts**

• Participate civilly and productively in group discussions.

**Previous Unit:** Solid Figures

**Prior Knowledge**

**Grade 2**

• Recognize these fractions as part of a whole set or region and write the corresponding numerical symbols.

• Write and solve simple equations in the form of 4 x \_\_\_ = 8.

**Grade 3**

• Recognize equivalent fractions

• Know and write decimal equivalents to ¼, ½, 3/4

**Grade 5**

• Determine and express simple ratios.

• Use ratio to create a simple scale drawing.

• Determine the least common denominator (LCD) of fractions with unlike denominators.

**Next Unit:** Percentages

**What Students will Learn in Future Grades**

**Grade 7 and 8**

• Choose appropriate units of measure and use ratios to convert within and between measurement systems to solve problems.

• Know how perimeter, area, and volume are affected by changes of scale.

• Know that the shape of a triangle is determined by two (hence all three) of its angles (triangle similarity) and solve related problems.

• Know the similar triangles connection (AA Similarity) with slope and that this is the

tangent of the angle the line makes with the x-axis.

**Cross Curricular Links**

**Science**

Metric conversions.

**Additional Resources**

*For Teachers:*

* *6A Primary Mathematics Textbook: Standards Edition,* Marshall Cavendish Education
* *Extra Practice for Primary Mathematics*, Marshall Cavendish Education