Core Content

Cluster Title: Understand ratio concepts and use ratio reasoning to solve problems.
Standard 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. 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?
MASTERY Patterns of Reasoning:
Conceptual: Understand that tools such as tables of equivalent ratios, tape diagrams, double number line diagrams, and equations support the development of ratio and rate reasoning. Understand that rate problems compare two different units, such as miles to hours. Recognize that a unit occurs when at least one of the units is one. Understand that establishing connections between tools allow for extended reasoning and synthesis of the concept of ratios and rates (e.g., How do tape diagrams and double number lines show rate reasoning given the same context?). **Procedural:** Solve real-world problems using rate reasoning. **Representational:** Set up the unit rate correctly.

Supports for Teachers

Critical Background Knowledge
Conceptual: Understand ratio reasoning and relationships. Understand equivalent fractions.

Procedural:

Use the four basic operations (+, -, x, /).

Representational:

Represent equivalent ratios with ratio notation.

Academic Vocabulary and Notation

equivalent ratios notation ($\frac{a}{b} = \frac{c}{d}$) or a is to b as c is to d; ratio; unit rate

Instructional Strategies Used	Resources Used
1. Identify the question being asked based on the context, and determine a method for finding the unit rate (table of equivalent ratios, tape diagrams, double number line diagrams, and equations). 2. Complete the determined tool to find the unit rate (e.g., use tool to find the ratio in which one of the units is one).	Illuminations measuring up activity: http://illuminations.nctm.org/LessonDetail.aspx?ID=L511

Assessment Tasks Used

Skill-based Task:	Problem Task:
If 5 CDs cost $60, what is the price of each CD?	Joe's Gas and Go has drinks for the following prices: 12 fl. oz. for $ .89 16 fl. oz. for $ .99 20 fl. oz. for $1.09 32 fl. oz. for $1.19 Which drink costs the least per ounce? You may round to the nearest cent and use a calculator if you desire.