

Grade 7 Blueprint and FAL Alignment

Reporting Category: Ratios and Proportions

Critical Areas of Focus

- 7.RP.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.
- 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, percent error.

Associated FALs

Increasing and Decreasing Quantities by a Percent

This lesson unit is intended to help you assess how well students are able to interpret percent increase and decrease and in particular, to identify and help students who have the following difficulties:

- Translating between percents, decimals, and fractions.
- Representing percent increase and decrease as multiplication.
- Recognizing the relationship between increases and decreases.

Representing: Road Race

This lesson unit is intended to help you assess how well students are able to model a real-world situation and compare and critique sample models. In particular this lesson aims to identify and help students who have difficulty recognizing and using proportional relationships.

Comparing Strategies for Proportion Problems

This lesson unit is intended to help you assess whether students recognize relationships of direct proportion and how well they solve problems that involve proportional reasoning. In particular, it is intended to help you identify those students who:

- Use inappropriate additive strategies in scaling problems, which have a multiplicative structure.
- Rely on piecemeal and inefficient strategies such as doubling, halving, and decomposition and have not developed a single multiplier strategy for solving proportionality problems.
- See multiplication as making numbers bigger and division as making numbers smaller.

Classifying Proportion and Non-Proportion Situations

This lesson unit is intended to help you assess whether students are able to:

- Identify when two quantities vary in direct proportion to each other.
- Distinguish between direct proportion and other functional relationships.
- Solve proportionality problems using efficient methods.

Source: map.mathshell.org

Reporting Category: The Number System

Critical Areas of Focus

- 7.NS.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.
- 7.NS.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.
- 7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers.
- 7.EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
- 7.EE.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.
- 7.EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.
- 7.EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.

Associated FAls

Using Positive and Negative Numbers in Context

This lesson unit is intended to help you assess how well students are able to understand and use directed numbers in context. It is intended to help identify and aid students who have difficulties in ordering, comparing, adding, and subtracting positive and negative integers.

Modeling: Hot and Cold

This lesson unit is intended to help students judge the accuracy of two different approximations to a particular linear relationship. Students will compare two linear functions as approximations to the relationship between Celsius and Fahrenheit temperature and consider under what circumstances each of the approximations may be reasonable.

Solving Linear Equations

This lesson unit is intended to help you assess how well students are able to:

- Form and solve linear equations involving factorizing and using the distributive law.
- In particular, this unit aims to help you identify and assist students who have difficulties in:
 - Using variables to represent quantities in a real-world or mathematical problem.
 - Solving word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$.

Source: map.mathshell.org