Application of Proportional Relationships

Grade 7 Standards Parent Resource

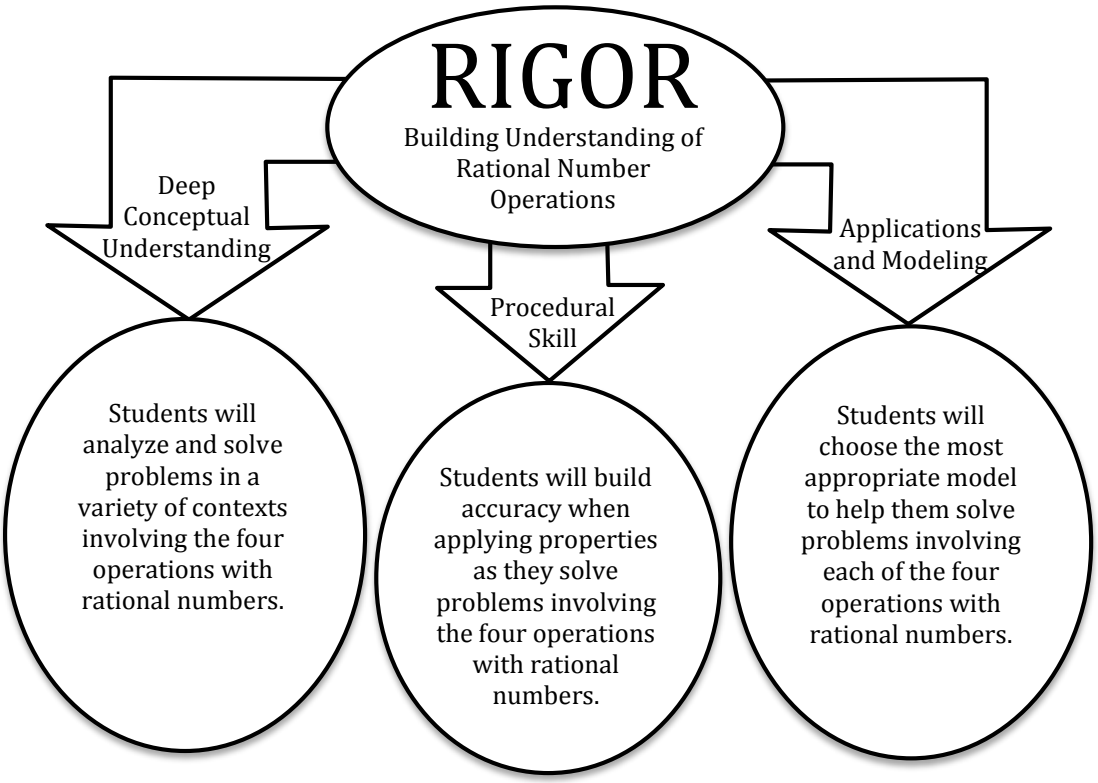
Unit 2: Rational Number Operations

Unit 2 includes 2 topics of study, listed below. This resource is for Topic 1.

Topic 1	*Topic 2*
Building Understanding of Rational Number Operations	*Integrating Rational Number Operations in Expressions & Equations*

Topic	**Learning Goals by Common Core State Standard** *Students will be able to...*
Building Understanding of Rational Number Operations	• 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. • Apply and extend previous understandings of multiplication and division of fractions to multiply and divide rational numbers. • Solve real-world and mathematical problems involving the four operations with rational numbers. • 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. *Instructional videos in the hyperlinks above are meant to support C2.0 content, but may use vocabulary or strategies not emphasized by MCPS.*

The Common Core State Standards require a balance of three fundamental components that result in rigorous mathematics acquisition: deep conceptual understanding, procedural skill, and mathematical applications and modeling.



Grade 7 Standards Parent Resource

Unit 1: Building Understanding of Rational Number Operations Topic 1: Building Understanding of Rational Number Operations

Learning Experiences by Common Core State Standard

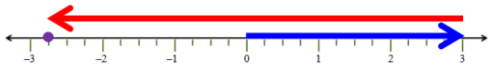
Topic 1: Understanding Proportional Relationships

In school, your child will…

- 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.

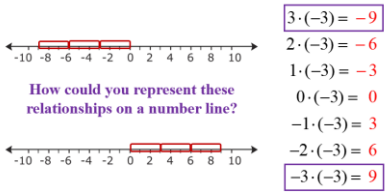
  Suppose your mom paid you $3 for emptying the dishwasher but charged you $5.75 to replace a broken glass. 3 + -5.75= ?

  How could the situation be modeled on a number line?



- Apply and extend previous understandings of multiplication and division of fractions to multiply and divide rational numbers.

  What does the pattern in the products mean?



$3 \cdot (-3) = -9$
$2 \cdot (-3) = -6$
$1 \cdot (-3) = -3$
$0 \cdot (-3) = 0$
$-1 \cdot (-3) = 3$
$-2 \cdot (-3) = 6$
$-3 \cdot (-3) = 9$

- Solve real-world and mathematical problems involving the four operations with rational numbers.

  Jackie left home on Saturday and hiked 3.25 miles north, kayaked 5.5 miles south, and then biked 1.75 miles north. How many miles from home is she now?

- 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.

$$5 + \left(-4\frac{4}{7}\right) - 2(3)$$

At home, your child can…

- Determine the amount of money in a checking account given a series of withdrawals and deposits.
- Determine the final price of a group of item after applying a given discount and sales tax.
- Follow a stock for a week and model the gains/losses on a number line. Determine the net value of the stock from the first day until the end of the week.

Additional Resources

- Multiply positive and negative integers using the distributive property (video tutorial)
- Multiply a negative by a negative using the distributive property (video tutorial)
- Solve real-world and mathematical problems involving the four operations with rational numbers. (video tutorials)
- Feeding Numbers (game)
- Number Line Bounce (game)
- Circle 0 (game)
- Brain Racer: Integers (game)
- Grade 7 Standards Unit 2 Topic 1 Building Understanding of Rational Number Operations (flexbook)

Additional Practice links support C2.0 content, but may use vocabulary or strategies not emphasized by MCPS.