# Grade 7 Standards Parent Resource

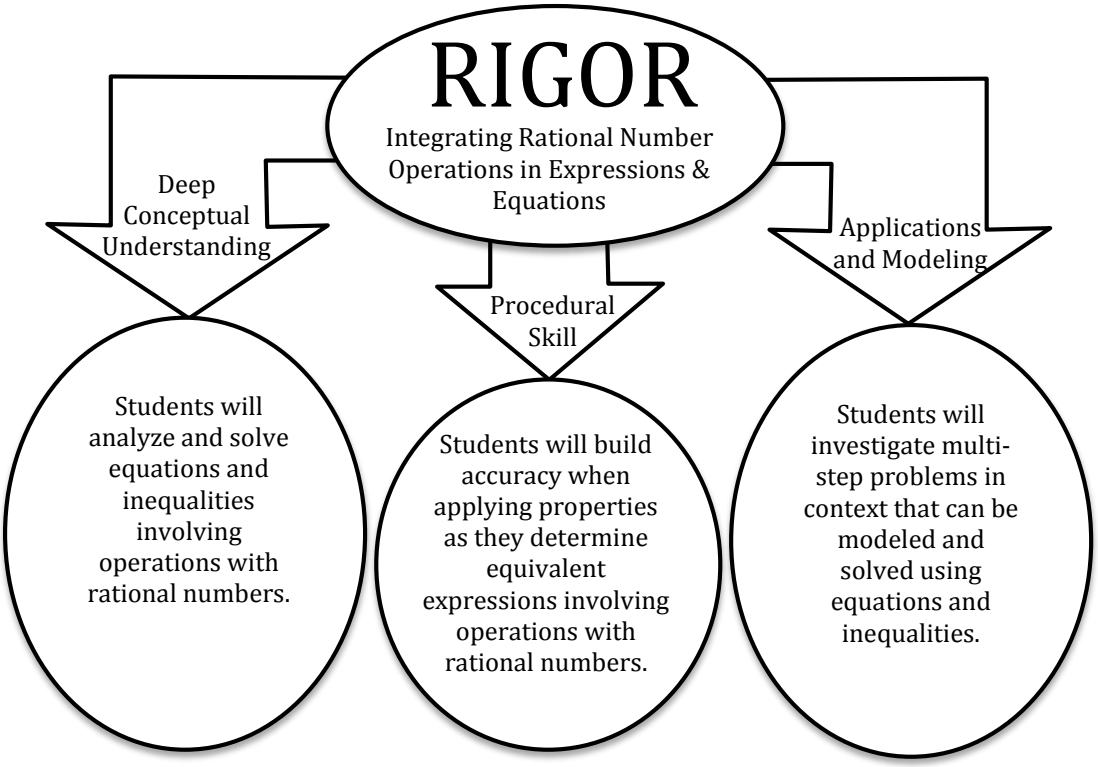
## *Unit 2: Rational Number Operations*

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

| *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**<br>*Students will be able to...* |
|---|---|
| **Integrating Rational Number Operations in Expressions & Equations** | • Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.<br>• 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.<br>• Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form, 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.<br>• 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.<br><br>*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: Rational Number Operations  Topic 2: Integrating Rational Number Operations in Expressions & Equations

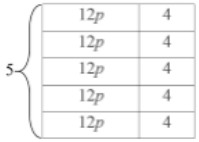
## Learning Experiences by Common Core State Standard

**Topic 2: Integrating Rational Number Operations in Expressions & Equations**

### In school, your child will…

- Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.

  Write three algebraic expressions that are equivalent to the model shown below:




- 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.

  A group of friends are going to see the same movie and purchase the same snack. If a ticket costs $8.25 each and snacks cost $2.25 each, what expressions model the scenario?

- Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form, 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.

  If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, where will you need to place the bar?

- 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.

  The perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?

### At home, your child can…

- Determine an equation or inequality that can describe a real world problem.

  *Find the number of tickets that can be purchased for an event, including the ticket surcharge. We have $100 to go to the ballgame. If tickets cost $26.50 each and we want to have $20 to buy snacks, how many tickets can we buy?*

- After a shopping trip, write and solve equation that can be used to determine the cost of the items.

  *For example, last week we bought three spiral notebooks and a pencil that costs $0.75. If we gave the cashier $10.00 and received $4.75 in change, how much did each notebook cost?*

*Additional Resources*

- Virtual Algebra Tiles (virtual manipulatives)
- Khan Academy: Equivalent expressions with distribution and negative numbers (video tutorials)
- LearnZillion: Factor the Expression (video tutorials)
- Khan Academy: Factoring algebraic expressions using the distributive property (video tutorials)
- Khan Academy: Factoring algebraic expressions using the distributive property (practice)
- Purplemath: Solving multi-step linear equations (tutorial)
- Math Games: Solve multi-step equations (online game)
- LearnZillion: Solve an inequality with a negative coefficient by using the multiplication property of inequality(video tutorials)
- Jeopardy Lab (online game)
- Grade 7 Standards Unit 2 Topic 2 Integrating Rational Number Operations in Expressions & Equations (flexbook)

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