8th Grade Math Textbook

BIG IDEAS MATH®
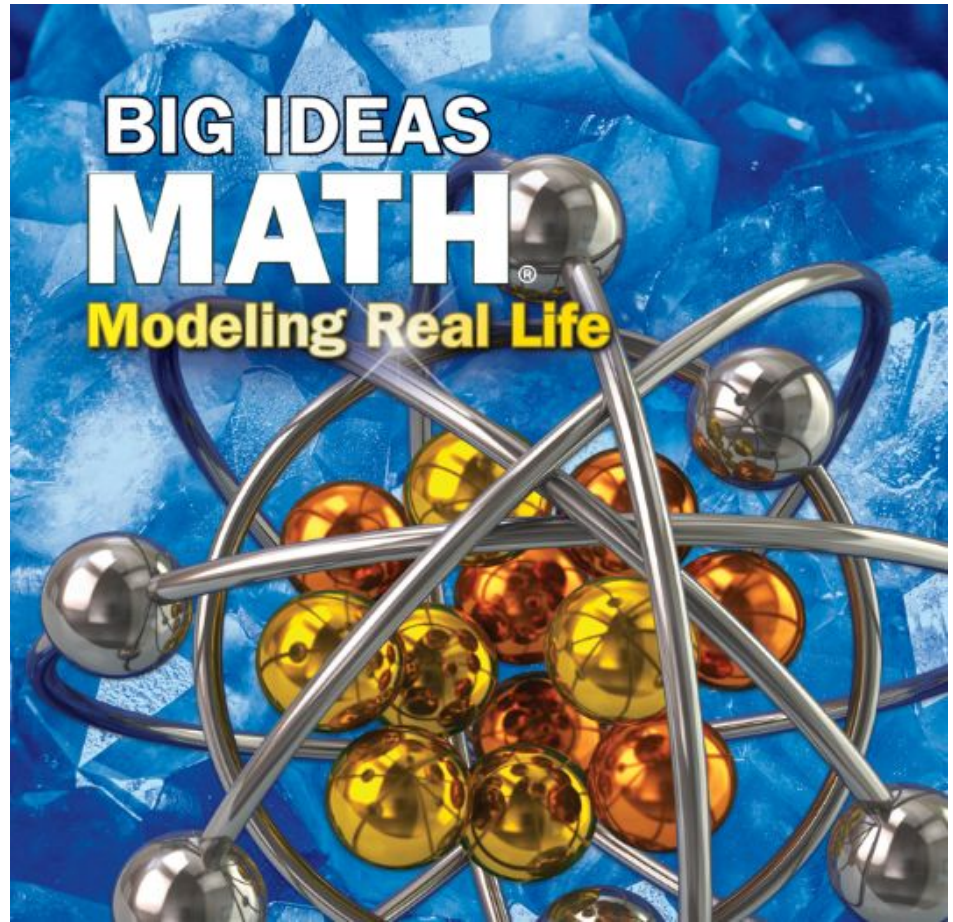**Modeling Real Life**

April 28, 2020

Textbook for 8th Grade Math

- Big Ideas Math, Modeling Real Life Common Core, Ron Larson and Laurie Boswell, Copyright 2019, Big Ideas Learning.

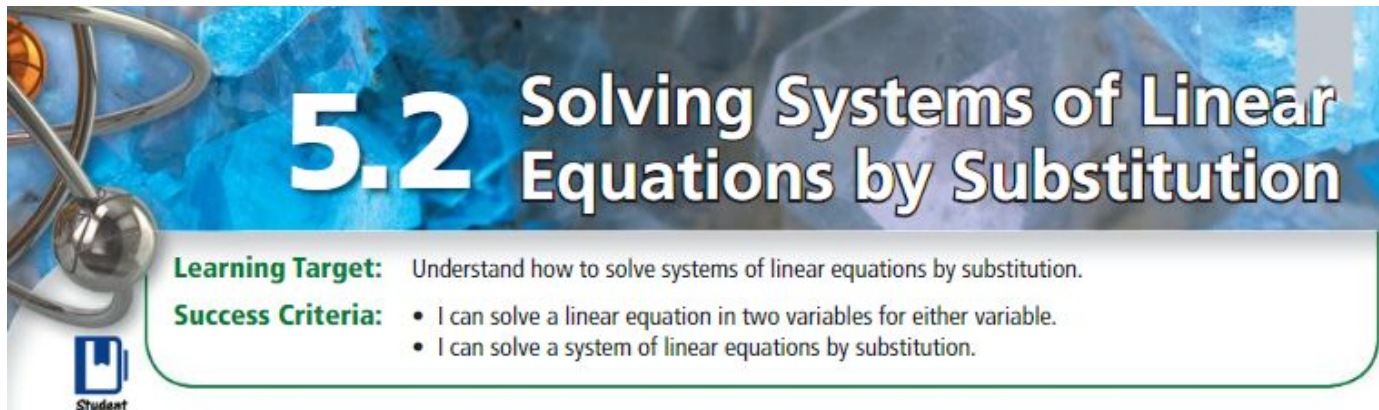# Why do we need a new text?

- Math Course 3 © 2007 is outdated, unaligned to Common Core, and overly supplemented by teachers with online materials.

- Logical continuation for 8th grade math since 6th and 7th grade have adopted Big Ideas over the past two years.

Why we like Big Ideas

- Challenge and rigor of problems.

- Squarely aligned to 8th grade standards.

- Architecture strong: Scope and sequence focused and coherent, "I Can" statements frame all lessons, focus on math practices, formative assessments, and spiral reviews.

- Familiarity with authors for students and teachers.

"I Can" Statements

5.2 Solving Systems of Linear Equations by Substitution

Learning Target: Understand how to solve systems of linear equations by substitution.

Success Criteria:
- I can solve a linear equation in two variables for either variable.
- I can solve a system of linear equations by substitution.

CHOOSING A SOLUTION METHOD Solve the system. Explain your choice of method.

19. $y - x = 4$
$x + y = 6$

20. $0.5x + y = 4$
$0.5x - y = -1$

21. $y = 2x + 5$
$y = -3x$

SOLVING A SYSTEM ALGEBRAICALLY Find the value of each symbol in the system.
(See Exploration 1, p. 205.)

5. $\mathcal{D} + 1 = \bigstar + \bigstar$ Equation 1
$\mathcal{D} = 3 + \bigstar$ Equation 2

6. $\phi - ❄ = -2$ Equation 1
$\phi - ❄ = 1 + ❄$ Equation 2

5

Summarizers

Summary

Representations of Functions

Words   The output is 2 more than the input.

Equation $y = x + 2$
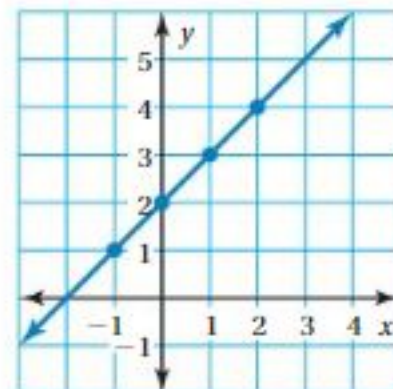
Input-Output Table

Input, x	Output, y
-1	1
0	2
1	3
2	4

Mapping Diagram

Input, x	Output, y
-1 →	1
0 →	2
1 →	3
2 →	4
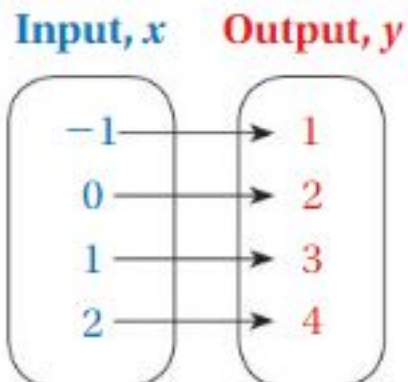
Graph

Standards of Mathematical Practice

Math Practice

Look for Structure
How can you use slopes and y-intercepts to determine the number of solutions of a system of linear equations?

Math Practice

Interpret Results
How can you determine whether a function is a linear function using a graph? an equation?

Math Practice

Label Axes
Did you use the same scale on the axes? How does the scale affect how you compare the falling objects?

Wealth of Real World Problems

24. **DIG DEEPER!** You can use a *supply and demand model* to understand how the price of a product changes in a market. The *supply curve* of a particular product represents the quantity suppliers will produce at various prices. The *demand curve* for the product represents the quantity consumers are willing to buy at various prices.
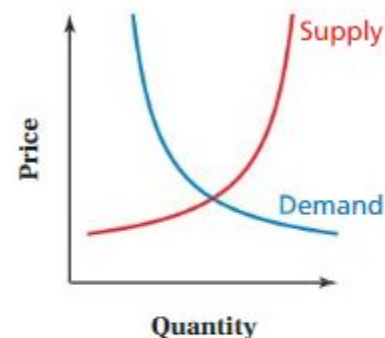
a. Describe and interpret each curve.

b. Which part of the graph represents a surplus? a shortage? Explain your reasoning.

c. The curves intersect at the *equilibrium point*, which is where the quantity produced equals the quantity demanded. Suppose that demand for a product suddenly increases, causing the entire demand curve to shift to the right. What happens to the equilibrium point?

13. **INTERPRETING A LINEAR FUNCTION** The table shows the percent y (in decimal form) of battery power remaining x hours after you turn on a laptop computer.

Hours, x	0	2	4
Power Remaining, y	1.0	0.6	0.2

a. Write and graph a linear function that relates y to x.

b. Interpret the slope, the x-intercept, and the y-intercept.

c. After how many hours is the battery power at 75%?

"Review and Refresh" Spiral Review

7.3 Practice

▶ *Review & Refresh*

Write a function rule for the statement. Then graph the function.

1. The output is ten less than the input.
2. The output is one-third of the input.

Solve the system.

3. $y = x + 5$
   $y = -3x + 1$

4. $x + y = -4$
   $6x + 2y = 4$

5. $-4x + 3y = 14$
   $y = 2x + 8$

7th Grade Math Feedback

- More rigorous curriculum…The students were pushed this year more than we ever have done in the past.

- The online resources are readily available, but no test generator.

- They have problems which have fraction and decimal units, not just whole numbers.

- Tight Alignment between Pre-Algebra and 7th grade Math. This year we have been teaching the same units to both 7th grade math and Pre-Algebra.

7th Grade Math Challenges...

- More rigorous problems than previous book.
- There is limited selection of problems to choose from.
- If you want easier problems or a number of easy problems, you have to create them.
- There is no review of previous material. We had to create our own materials to prepare students for the prerequisite knowledge that would be required for them to be successful with certain sections in the book.