

# Grades 6 & 7 Textbooks Professional Development


Session 1: January 6 and 7, 2015

Session 2: January 8 and 9, 2015

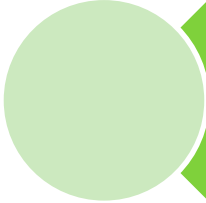
# PD Norms

- Be present
  - Silence cell phones
- Value each other's input
- Focus on what the data tells us
- Ask the hard questions
- Think outside of the box
- What is learned here leaves here
- Listen to understand
- Be open to sharing and collaborating
- Start on time, end on time


# Outcomes



Connect the curriculum map and identify the gaps in rigor in the textbook with the CCSS



Engage in backward planning to deepen students' mathematical knowledge



Plan differentiated supports for EL, SWD, GATE, and SEL




Engage in CCSS mathematical tasks

# Agenda



Backward Design



Exploring the  
Curriculum



Unit Planning utilizing  
Textbook Resources

# Survival Task

You were traveling by plane to Canada for your Winter Break.

Unfortunately, your plane didn't make it to your destination and you have been MAROONED!

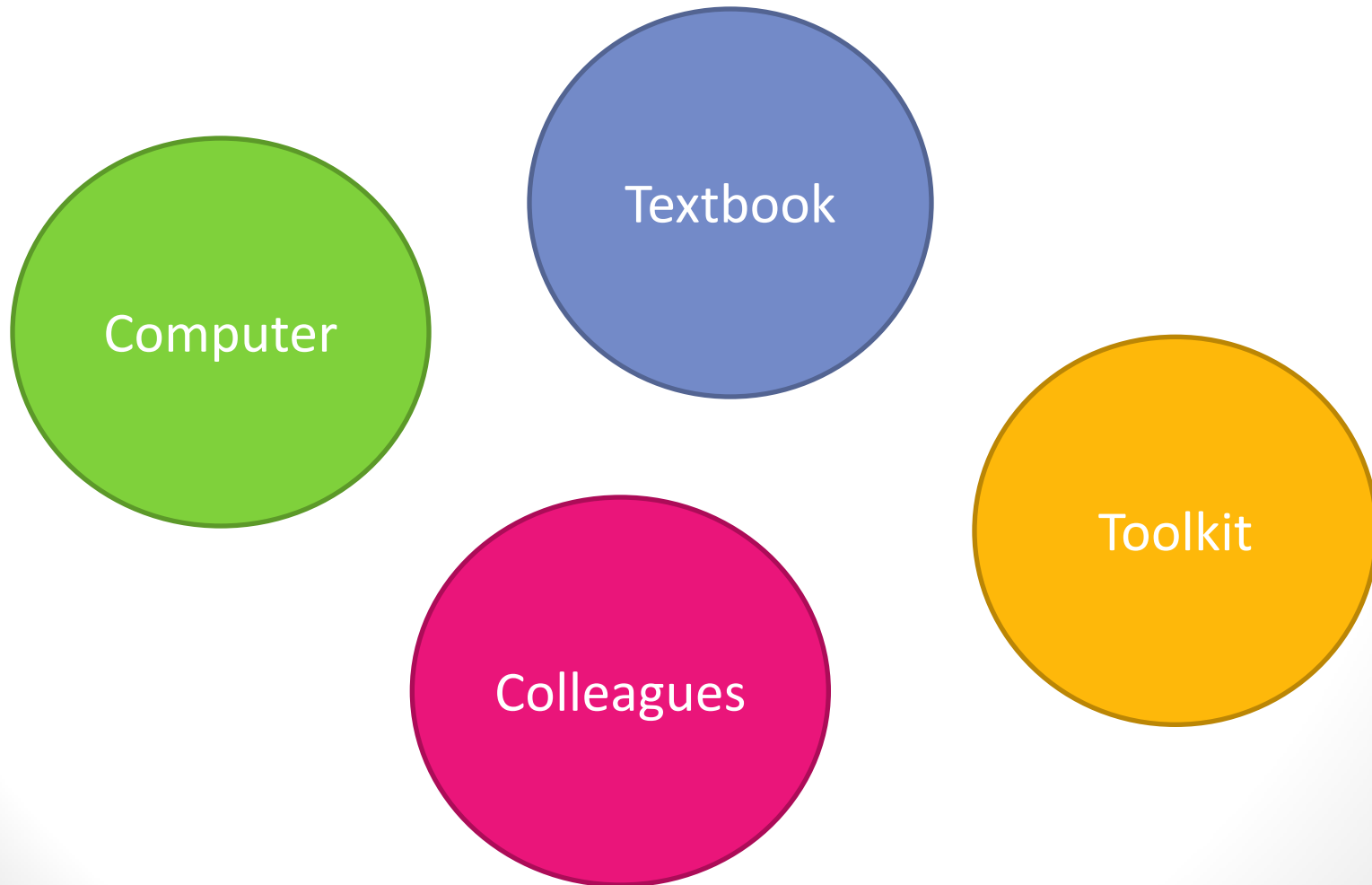
You only have 12 items left  
(See Handout)

As a team, discuss and put the items in order of importance to survive.

Be prepared to share your order and explain your rationale

# Now...

- This is what you have to survive a Common Core Classroom!



# 1

Section One

## BACKWARD DESIGN

“As we move to the second decade of the twenty-first century, one thing is clear: Our country needs highly trained workers who can wrestle with complex problems. Gone are the days when basic skills could be counted on to yield high-paying jobs and an acceptable standard of living. Especially needed are individuals who can think, reason, and engage effectively in quantitative problem solving”

Margaret Smith, 2009

## 21<sup>st</sup> Century Skills





# Stages of Backward Design

# SBAC Claims for Assessment (based on the CCSS)

| Blueprint Table Mathematics Grades 6–8                                    |                               |         |    |                  |    |                                   |
|---|-------------------------------|---------|----|------------------|----|-----------------------------------|
| Estimated Total Testing Time: 3:30 (with Classroom Activity) <sup>1</sup> |                               |         |    |                  |    |                                   |
| Claim/Score Reporting Category  | Content Category <sup>2</sup> | Stimuli |    | Items            |    | Total Items by Claim <sup>3</sup> |
|   |                               | CAT     | PT | CAT <sup>4</sup> | PT |                                   |
| 1. Concepts and Procedures  | Priority Cluster              | 0       | 0  | 14–15            | 0  | 14–15                             |
|   | Supporting Cluster            | 0       | 0  | 5                | 0  | 5                                 |
| 2. Problem Solving<br>4. Modeling and Data Analysis <sup>5</sup>          | Problem Solving               | 0       | 1  | 5                | 4  | 9                                 |
|   | Modeling and Data Analysis    | 0       |    |                  |    |                                   |
| 3. Communicating Reasoning  | Communicating Reasoning       | 0       |    |                  | 6  |                                   |

# SBAC Claims for the Summative Assessment

## Claim 1 - Concepts & Procedures

“Students can explain and apply mathematical concepts and interpret and carry out mathematical procedures with precision and fluency.”

(Targets broken down by grade level content clusters)



## Claim 2 – Problem Solving

“Students can solve a range of well posed problems in pure and applied mathematics, making productive use of knowledge and problem solving strategies.”

(Targets aligned with practice standards MP1, MP5, MP7, and MP8)



## Claim 3 – Communicating Reasoning

“Students can clearly and precisely construct viable arguments to support their own reasoning and critique the reasoning of others.”

(Targets aligned to practice standards MP3 & MP6)



## Claim 4 – Modeling and Data Analysis

“Students can analyze complex, real world scenarios and can construct and use mathematical models to interpret and solve problems.”

(Targets aligned to practice standards MP2, MP4 & MP5)

# SBAC Sample Questions by Claim

## Exploring the Claims

Using the Handout provided, look at some SBAC Sample Question for the grade you teach by Claim.

Note what Math Practice Standards are needed to support student success

Compare and Contrast the different SBAC Claims

**HANDOUT # 1**

# Matching Game

Step 1

- Using the problems provided, discuss as a school team and match them to the correct SBAC Claim.

Step 2

- Based on the identified Claim, discuss the appropriate Math Practices associated with that Claim.

Step 3

- Discuss how you would use the Math Practices to teach the standard associated with the problem.

# 2

Section Two

**EXPLORING THE CURRICULUM**

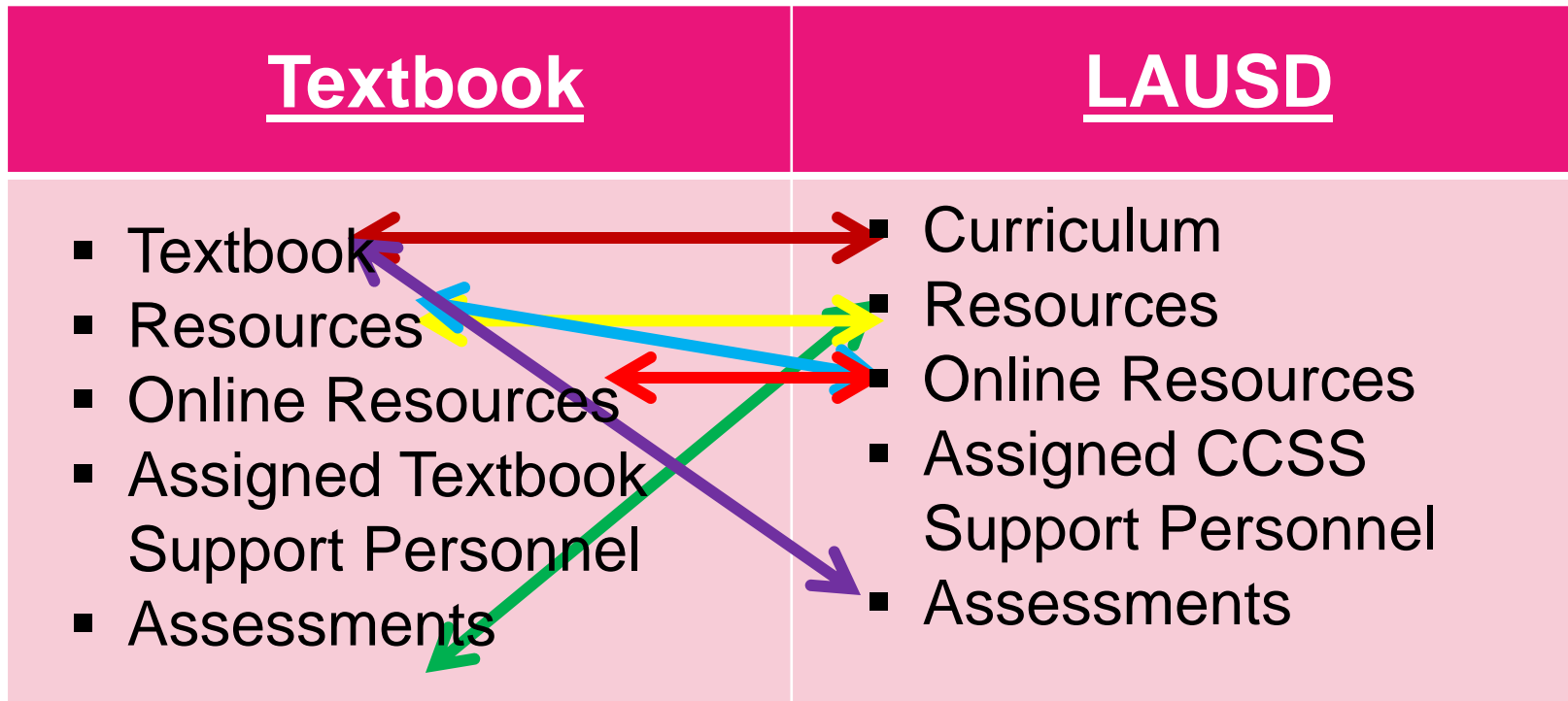
EXPLORING THE CURRICULUM

# Making Connections

## Textbook Publisher

vs.

## LAUSD



# LAUSD Curriculum Maps

- Where is it located?
- What's new?
- How is it connected to the textbook?
- What order do I follow?
  - Curriculum map
  - Textbook

**HANDOUT # 2**

California Math Textbook to Curriculum Map Alignment for CC Grade 6  
GRADE 6 – UNIT 1  
Understand the Concept of Ratio and Reason with Rate

**Critical Area:** Students use reasoning about multiplication and division to solve ratio and rate problems about quantities. By viewing equivalent ratios and rates as deriving from, and extending, pairs of rows (or columns) in the multiplication table, and by analyzing simple drawings that indicate the relative size of quantities, students connect their understanding of multiplication and division with ratios and rates. Thus students expand the scope of problems for which they can use multiplication and division to solve problems, and they connect ratios and fractions. Students solve a wide variety of problems involving ratios and rates.

| CLUSTERS  | COMMON CORE STATE STANDARDS   | CA Math Section   |
|---|---|---|
| (6U) Understand ratio concepts and use ratio reasoning to solve problems.                 | <p><b>6.RP.1</b> Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. <i>For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every 35 minutes of recess, you can earn 3 consecutive C's on your math test."</i></p> <p><b>6.RP.2</b> Understand and the concept of a unit rate <math>a</math> associated with a ratio <math>a:b</math> with <math>b \neq 0</math>, and use rate language in the context of a ratio relationship. <i>For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is <math>\frac{3}{4}</math> cup of flour for each cup of sugar." "We paid \$15 for 3 hamburgers, which is a rate of \$5 per hamburger."</i></p> <p><b>6.RP.3</b> 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.</p> <p>a. Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. Solve unit rate problems including those involving unit pricing and constant speed. <i>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?</i></p> <p>b. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.</p> <p>c. The ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.</p> | <p>6.RP.1-CL.12-132</p> <p>6.RP.2-CL.13-133</p> <p>6.RP.3a-CL.12-14-135</p> <p>6.RP.3b-CL.13-133-134-136</p> <p>1-6-CL.12-137</p> <p>6.RP.3c-CL.13-138-139</p> <p>6.RP.3d-CL.13-139</p> <p>6.RP.3e-CL.13-139</p> <p>6.RP.3f-CL.13-139</p> |
| (6M) Solve real-world and mathematical problems involving area, surface area, and volume. | <p><b>6.G.A.1</b> Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.</p>   | <p>6.G.1-CL.9-11-142-149</p> <p>2-9-2-95-9-5-9-4-Ch.3</p> <p>PSI-9-4-9-5-10-4-9-6</p>   |

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# Why use multiple resources?

*A textbook is a resource not the source. The standards are the source. Therefore, you can use many resources to build your curriculum that addresses the standards.*



LAUSD Curriculum Map



Online Resources



Teacher Toolkit



Textbook



And more!



# LAUSD Resources

Supporting the Curriculum

# Why use the LAUSD Resources?



- 1) Concept Lessons
- 2) Performance Tasks
- 3) Inquiry & Investigation
- 4) Sample Problems
- 5) Best for Students

- 1) Planning & prep time to utilize the resources
- 2) May have to swap for textbook resources

**The Pros outweigh the Cons**

# LAUSD Curriculum Maps



Using your computer, obtain the curriculum map for your grade

Step 1: [achieve.lausd.net/math](http://achieve.lausd.net/math)

Step 2: Click on Middle School

Step 3: Click on Curriculum Maps

Step 4: Click on Curriculum Maps for your grade

Step 5: Click on the Grade Curriculum Map Icon that you teach

# Let's Explore



**Scavenger Hunt Activity**

**Visit [achieve.lausd.net/math](http://achieve.lausd.net/math)**

**Explore the Curriculum  
Maps and the Resources  
Provided.**

**HANDOUT # 3**

# 3

Section Three

**UNIT PLANNING**  
UNIT PLANNING



# Time to Perform

Moving from Theory to Practice

# Putting it into Practice

## Microteaching Assignment



Illustrations by Jay Carlton

**HANDOUT # 4**



# Setting the Stage

Choose one of the Cluster(s) provided

Activity based (*Students need to be engaged*)

Differentiated (*Specific to EL and SWD students*)

Must include at least one online resource from the publisher

Work with your school teams



# The Review

## Active Listening & Feedback



Each Audience Member will be given an Index Card to write down their review



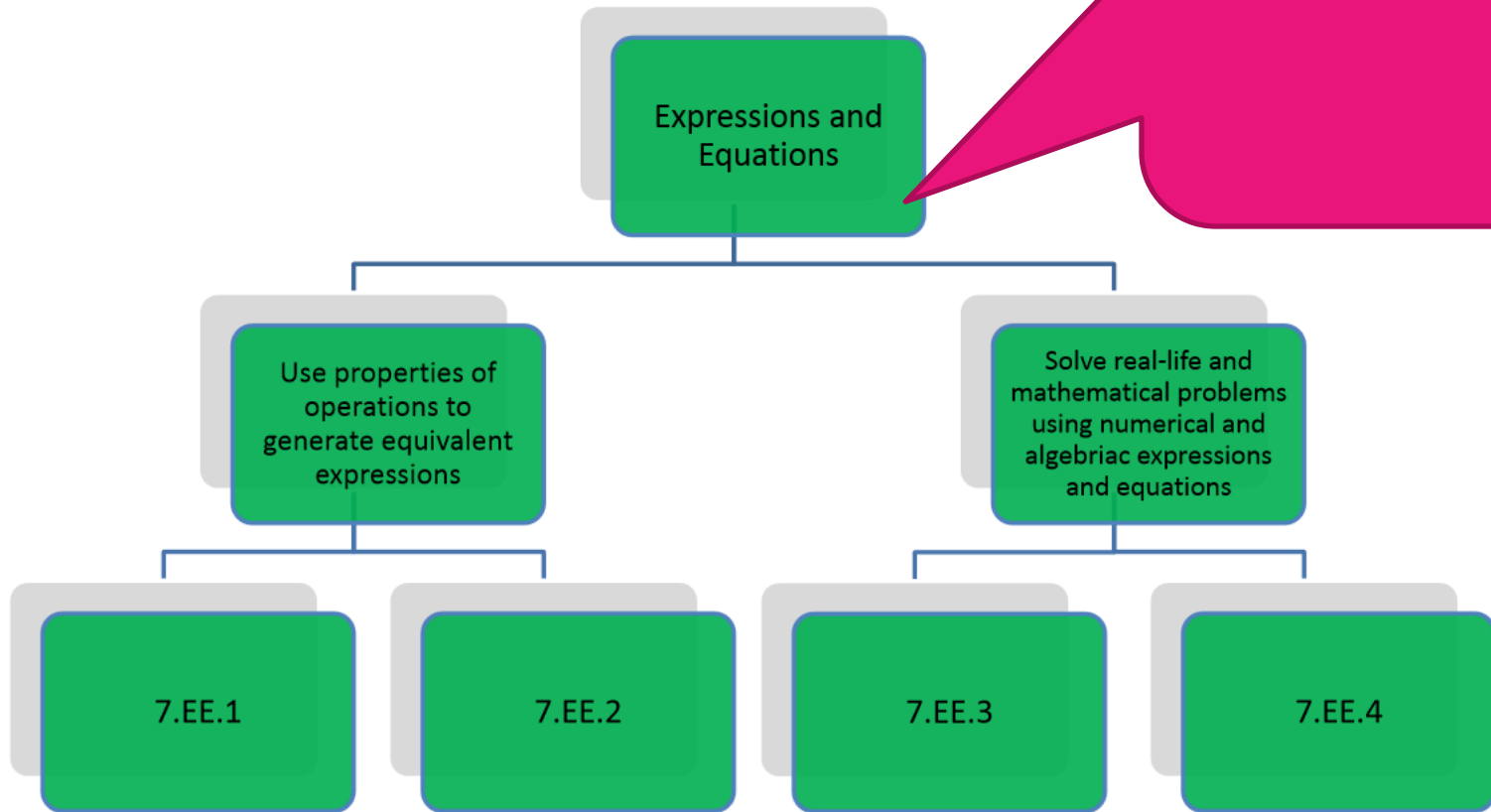
Write down one thing from the Micro Lesson you liked



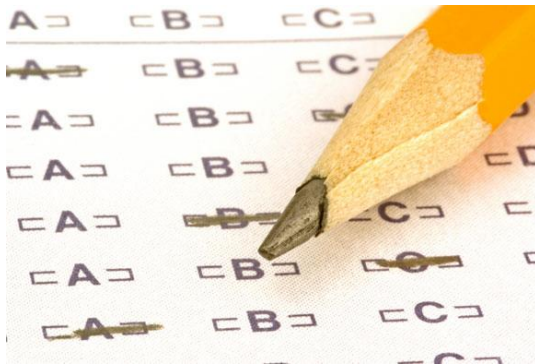
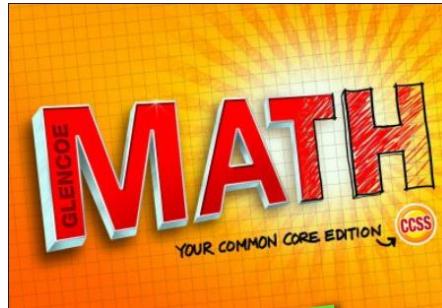
Write down one thing from the Micro Lesson you wish you would have seen

# Sign up for Micro Lesson

Common Core Math 7  
Unit 3  
Understand Expressions and Equations



# What do you need to create an Effective Calendar?

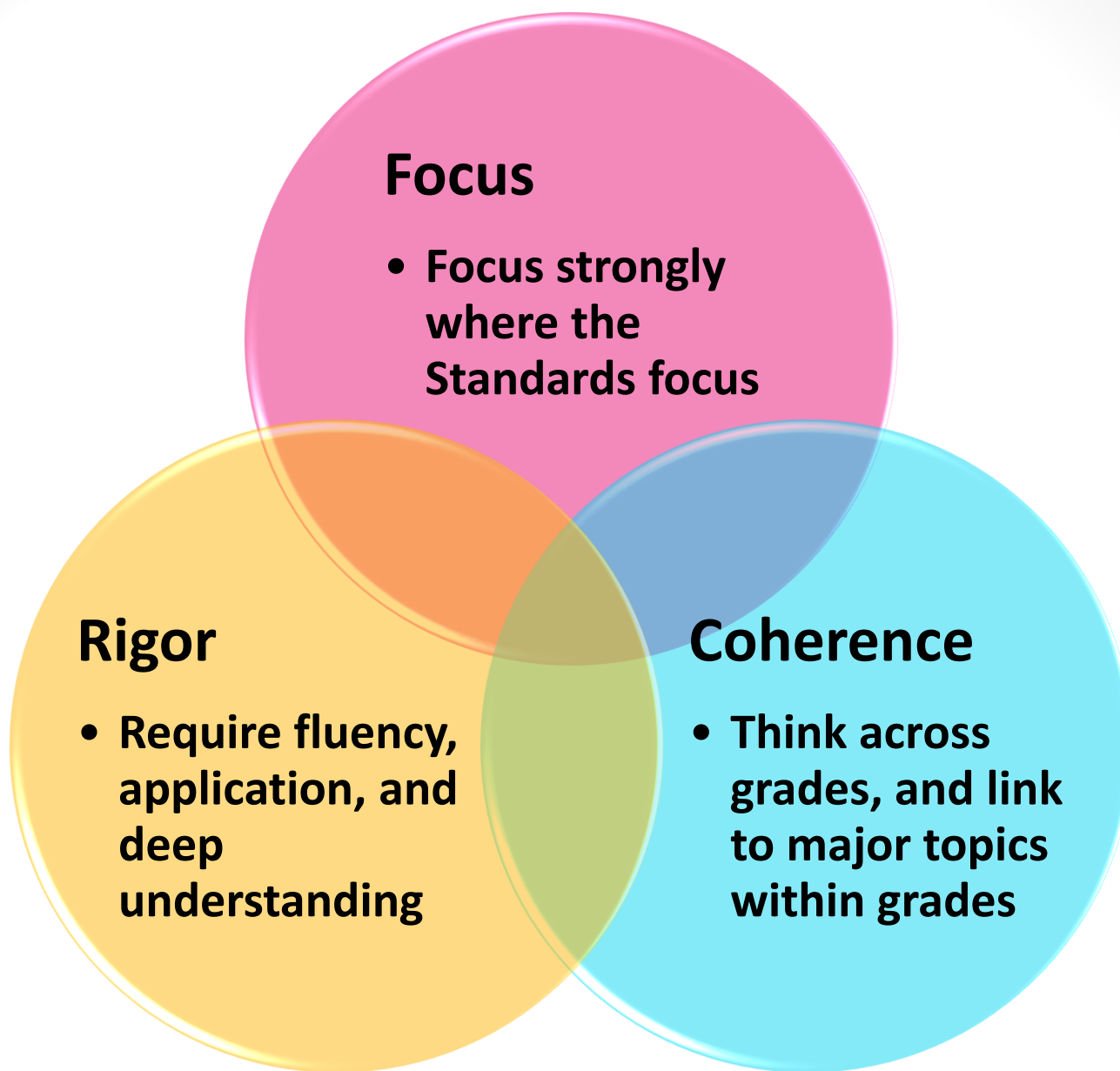


GRADE 8 - 8.EE.1  
Using Rational Numbers to Tackle the Distance Between Two Points and Properties of Integer Exponents and Square Root in Equivalent Radicals to Equations

Content Area: Students will understand/rationalize the rational and irrational numbers and use rational numbers approximation of irrational numbers. Students will use rational numbers to determine an unknown side or angles. They apply the Pythagorean Theorem to find distances between points on the coordinate plane, to find lengths, and to analyze polygons. Students use radicals and integers when they apply the Pythagorean Theorem to find area.

|   |  |
|---|--|
| Understand and apply the Pythagorean Theorem.   | 8.EE.1 Explain a proof of the Pythagorean Theorem and its converse.  |
| Use rational numbers that are not rational, and approximate them by rational numbers. | 8.EE.1 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in the real world and rational problems to formalize their reasoning.  |
|   | 8.EE.1 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.   |
|   | 8.EE.1 Know that numbers that are not rational are well-approximated, and understand that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.  |
|   | 8.EE.1 Use the rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line; recognize and approximate the value of expressions like $\sqrt{2}$ . For example, by viewing the decimal expansion of $\sqrt{2}$ show that $\sqrt{2}$ is between 1 and 2, between 1.4 and 1.5, and explain how to continue to get a greater approximation. |
| Work with radicals and integer exponents.   | 8.EE.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, $(3^2)^3 = 3^{2 \cdot 3} = 3^6$ or $(3^6)^{1/2} = 3^{6 \cdot 1/2} = 3^3$ .  |
|   | 8.EE.1 Use operations with rational numbers to solve real-world and mathematical problems involving rational numbers. For example, solve $x + 3 = 5$ and $x - 3 = 5$ , where $x$ is a positive rational number. Find rational solutions of simple radical equations and solve word problems of simple radical equations. Know that $\sqrt{2}$ is irrational.   |
|   | 8.EE.1 Use the numbers expressed in the form $a + bi$ to solve real-world problems.  |

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# Balanced Curriculum

Balanced Curriculum

# Let's Plan



# PD Evaluation