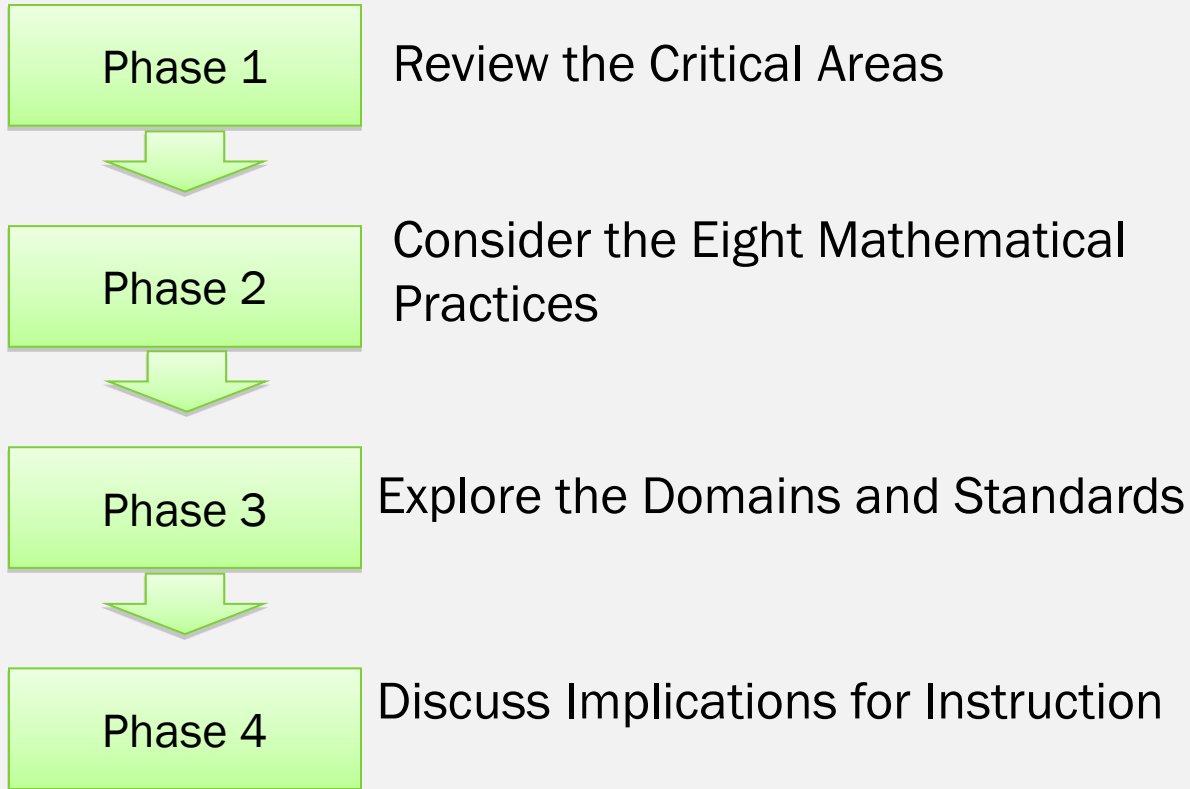




# Application of the Math Standards in the 21<sup>st</sup> Century Classroom Grades 6-8

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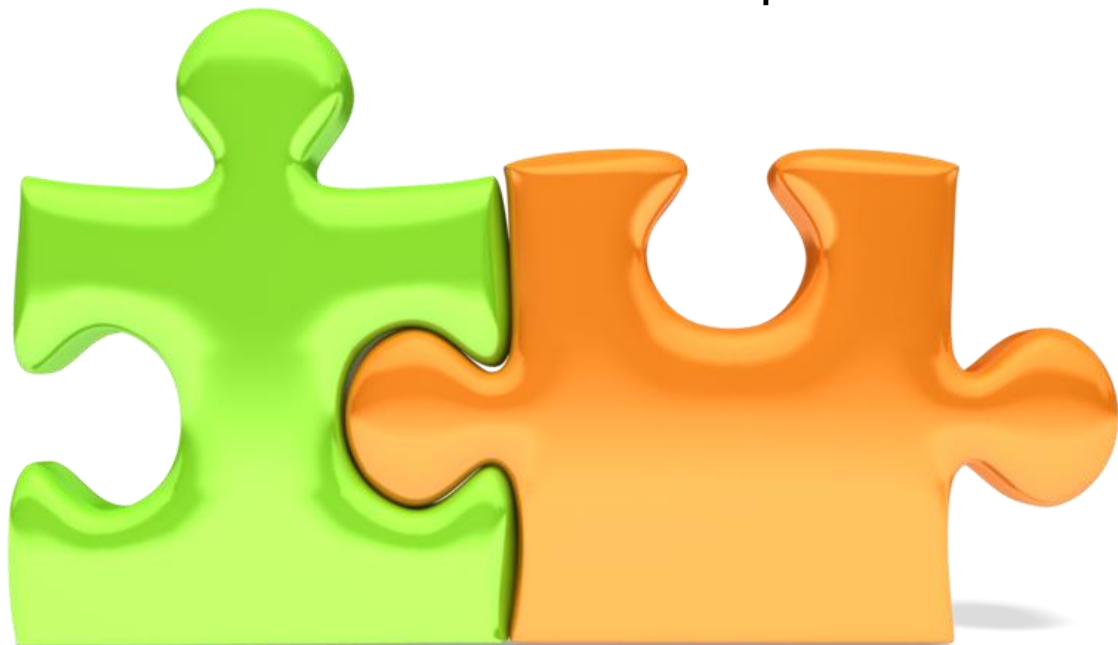
# Agenda



# Grades 6-7 Overview

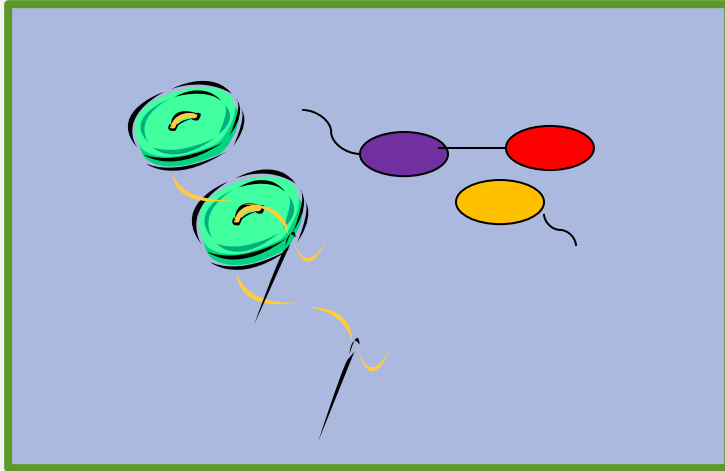
## Ratios and Proportional Relationships (RP)

- Understand ratio concepts and use ratio reasoning to solve problems.
- Analyze proportional relationships and use them to solve real-world and mathematical problems.



# Let's Apply the Standards!

## Admit Ticket - Ratio and Proportional Reasoning



**6.RP.1**  
**Buttons to Beads!**

# Example – Grade 6

## 6.RP.3

MP.1 Persevere, MP.2 –Reason, MP.4- Model, MP.5- Tools, MP.7 Seeing Structure

Examples:

- At Books Unlimited, 3 paperback books cost \$18. What would 7 books cost? How many books could be purchased with \$54? To find the price of 1 book, divide \$18 by 3. One book is \$6. To find the price of 7 books, multiply \$6, the cost of one book, times 7 to get \$42. To find the number of books that can be purchased with \$54, multiply \$6 times 9 to get \$54 and then multiply 1 book times 9 to get 9 books. Students use ratios, unit rates, and multiplicative reasoning to solve problems in various contexts, including measurement, prices, and geometry. Notice in the table below, a multiplicative relationship exists between the numbers both horizontally and vertically. Red numbers indicate solutions.

Number of Books	Cost
1	6
3	18
7	42
9	54

- Students use tables to compare ratios. Another bookstore offers paperback books at the prices below. Which bookstore has the best buy? Explain how you determined your answer.

Number of Books	Cost
4	20
8	40

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# Let's Apply the Standards!

## Ratios and Proportional Relationships (RP)

### Kellie's Trail Mix

Number of Books	Cost
1	6
3	18
7	42
9	54

Ratio Tables, Graphs and  
Equations Matching  
Activity 6.RP.3

### Extension Activity

# Example – Grade 7 (EE)

## 7.EE.4

MP.1 Persevere, MP.2 –Reason, MP.3 Critique, MP.4- Model, MP.5- Tools, MP.6 Precision, MP.7 Seeing Structure, MP.8 Repeated Reasoning

Amie had \$26 dollars to spend on school supplies. After buying 10 pens, she had \$14.30 left. How much did each pen cost?

The sum of three consecutive even numbers is 48. What is the smallest of these numbers?

Florencia has at most \$60 to spend on clothes. She wants to buy a pair of jeans for \$22 dollars and spend the rest on t-shirts. Each t-shirt costs \$8. Write an inequality for the number of t-shirts she can purchase.

# Let's Explore the Standards!

## Expressions and Equations (EE)



**Beat the Clock!**  
**7.EE.4**

### **Extension Activity**



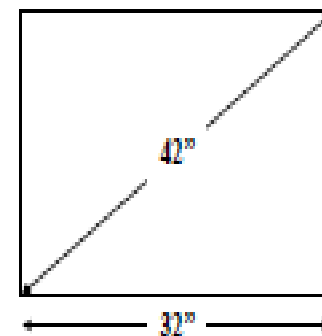
# Example – Grade 8 (G)

## 8.G.7

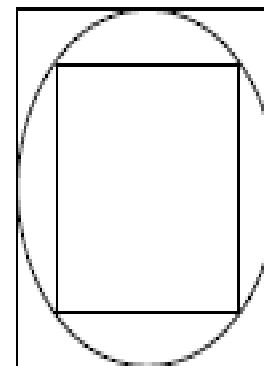
MP.1 Persevere, MP.2 – Reason, MP.4- Model, MP.5- Tools, MP.6 Precision, MP.7 Seeing Structure

Examples:

- Jane is hoping to buy a large new television for her den, but she is not sure what size screen will be suitable for her wall. This is because television screens are measured by their diagonal line. The following 42-inch screen measures 32 inches along the base.
  - What is the height of the screen? Show how you know.
  - What is the area of the screen in square inches?
  - Jane would like to have a screen 40-inches wide and 32-inches high. What screen size, in inches, will she need to buy? Show your work.



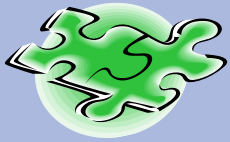
- The following diagram shows a circle with one square inside and one square outside.
  - What is the ratio of the areas of the two squares? Show your work.
  - If a second circle is inscribed inside the smaller square, what is the ratio of the areas of the two circles? Explain your reasoning.



Delaware's Common Core State Standards for Grade 8 Mathematics

# Let's Apply the Standards!

## Geometry



$$a^2 + b^2 = c^2$$

Pythagorean Theorem  
Puzzles  
8.G.6 & 8.G.7

**Extension Activity**

# Connection To Assessment

Analyze current sample assessment questions.  
Identify these elements:

- **Content** standard being measured.
- **Mathematical Practice** standard(s) being measured.
- **Model or Methods** from the content standard that are evident in the question.

# LET'S REFLECT...

**What new instructional strategies need to be implemented to meet the rigor of the standards?**



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