

# Common Core State Standards for Mathematical Practice

## **Make sense of problems and persevere in solving them.**

- Multiple representations are presented to help students move from concrete to representative and into abstract thinking
- *Essential Questions* help students focus and analyze
- *In Your Own Words* provide opportunities for students to look for meaning and entry points to a problem

## **Reason abstractly and quantitatively.**

- Visual problem solving models help students create a coherent representation of the problem
- Opportunities for students to decontextualize and contextualize problems are presented in every lesson

## **Construct viable arguments and critique the reasoning of others.**

- *Error Analysis; Different Words, Same Question; and Which One Doesn't Belong* features provide students the opportunity to construct arguments and critique the reasoning of others
- *Inductive Reasoning* activities help students make conjectures and build a logical progression of statements to explore their conjecture

## **Model with mathematics.**

- Real-life situations are translated into diagrams, tables, equations, and graphs to help students analyze relations and to draw conclusions
- Real-life problems are provided to help students learn to apply the mathematics that they are learning to everyday life

## **Use appropriate tools strategically.**

- *Graphic Organizers* support the thought process of what, when, and how to solve problems
- A variety of tool papers, such as graph paper, number lines, and manipulatives, are available as students consider how to approach a problem
- Opportunities to use the web, graphing calculators, and spreadsheets support student learning

## **Attend to precision.**

- *On Your Own* questions encourage students to formulate consistent and appropriate reasoning
- Cooperative learning opportunities support precise communication

## **Look for and make use of structure.**

- *Inductive Reasoning* activities provide students the opportunity to see patterns and structure in mathematics
- Real-world problems help students use the structure of mathematics to break down and solve more difficult problems

## **Look for and express regularity in repeated reasoning.**

- Opportunities are provided to help students make generalizations
- Students are continually encouraged to check for reasonableness in their solutions

Go to [BigIdeasMath.com](http://BigIdeasMath.com) for more information on the Common Core State Standards for Mathematical Practice.

# Common Core State Standards for Mathematical Content for Grade 7 Advanced

## Chapter Coverage for Standards

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

### Domain The Number System

- Know that there are numbers that are not rational, and approximate them by rational numbers.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

### Domain Expressions and Equations

- Use properties of operations to generate equivalent expressions.
- Solve real-life and mathematical problems using numerical and algebraic expressions and equations.
- Work with radicals and integer exponents.
- Understand the connections between proportional relationships, lines, and linear equations.
- Analyze and solve linear equations and pairs of simultaneous equations.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

### Domain Functions

- Define, evaluate, and compare functions.
- Use functions to model relationships between quantities.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

### Domain Geometry

- Draw, construct, and describe geometrical figures and describe the relationships between them.
- Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.
- Understand congruence and similarity using physical models, transparencies, or geometry software.
- Understand and apply the Pythagorean Theorem.
- Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

### Domain Statistics and Probability

- Use random sampling to draw inferences about a population.
- Draw informal comparative inferences about two populations.
- Investigate chance processes and develop, use, and evaluate probability models.
- Investigate patterns of association in bivariate data.

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