# SIXTH GRADE

COMMON CORE

MATH

AND

ENGLISH LANGUAGE ARTS

OVERVIEW

FOR PARENTS

# Mathematics | Standards for Mathematical Practice for All Grades

The Standards for Mathematical Practice describe behaviors that all students will develop in the Common Core Standards. These practices rest on important "processes and proficiencies" including problem solving, reasoning and proof, communication, representation, and making connections.   These practices will allow students to understand and apply mathematics with confidence.

- Make sense of problems and persevere in solving them.
    - Find meaning in problems
    - Analyze, predict and plan solution pathways
    - Verify answers
    - Ask themselves the question:  "Does this make sense?"

- Reason abstractly and quantitatively.
    - Make sense of quantities and their relationships in problems
    - Create coherent representations of problems

- Construct viable arguments and critique the reasoning of others.
    - Understand and use information to construct arguments
    - Make and explore the truth of conjectures
    - Justify conclusions and respond to arguments of others

- Model with mathematics.
    - Apply mathematics to problems in everyday life
    - Identify quantities in a practical situation
    - Interpret results in the context of the situation and reflect on whether the results make sense

- Use appropriate tools strategically.
    - Consider the available tools when solving problems

- o Are familiar with tools appropriate for their grade or course ( pencil and paper, concrete models, ruler, protractor, calculator, spreadsheet, computer programs, digital content located on a website, and other technological tools.
- Be precise.
  - o Communicate precisely to others
  - o Use clear definitions, state the meaning of symbols and are careful about specifying units of measure and labeling axes
  - o Calculate accurately and efficiently

- Look for and make use of structure.
  - o Discern patterns and structures
  - o Can step back for an overview and shift perspective
  - o See complicated things as single objects or as being composed of several objects

- Look for and identify ways to create shortcuts when doing problems.
  - o When calculations are repeated, look for general methods, patterns and shortcuts
  - o Be able to evaluate whether an answer makes sense

# Grade 6 Overview | Mathematics

Sixth grade students use their knowledge of multiplication and division to solve ratio and rate problems.  They finalize their understanding of division of fractions and begin the study of negative integers.  They understand the use of variables in mathematical expressions, write expressions and equations that correspond to situations, and use expressions and equations to solve problems.  Students begin the study of probability and statistics and use their geometrical foundations to solve problems involving area, surface area, and volume.

- Understand ratio concepts and use ratio reasoning to solve problems

- Understand unit rate

- Find a percent of a quantity

- Divide fractions by fractions

- Fluently compute with multi-digit numbers and multi-digit decimals

- Find common factors and multiples of numbers

- Find the greatest common factor and least common multiple of two whole numbers

- Use understanding of positive numbers to understand rational numbers

- Understand positive and negative integers and be able to locate on a four-quadrant coordinate plane

- Order rational numbers

- Understand absolute value

- Add and subtract integers

- Apply properties of operations to add and subtract rational numbers

- Use understanding of arithmetic to solve one variable equations and inequalities

- Write expressions and equations to describe real world situations using variables

- Write and solve equations with whole number exponents

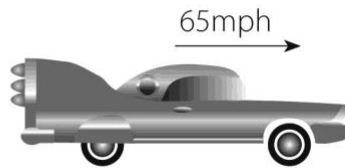- Write an inequality to describe a real world or mathematical problem

(continued)

- Represent and explain relationships between dependent and independent variables

  For example, a car travels at a constant speed of 65 mph. List and graph ordered pairs of distances and times. Write the equation $d = 65t$ to show distance travelled (d) depends on the constant speed (65) multiplied by the time travelled.

  $$d = 65t$$

  | t=hours | distance |
  |---------|----------|
  | 1 | 65 |
  | 2 | 130 |
  | 1/2 | 32.5 |

  65mph →

- Solve real world problems involving area, surface area, and volume
- Draw (freehand, with ruler and protractor and with technology) geometric shapes when given specific conditions
- Know the formulas for area and circumference of a circle
- Ask a statistical question (How old are the students in my school?), collect and organize the data on a line plot, graph, histogram, dot plot, box plot, etc.
- Describe and summarize data by noticing the center, spread, and overall shape
- Display numerical data on a number line including dot plots, histograms, and box plots

# Grade 6 Overview | English Language Arts

Sixth grade students provide a summary of reading without personal opinions or judgments. They write a variety of pieces, including research projects, and use technology to publish the work. When presenting, students place descriptions, facts, and details in a logical order.

Reading
- Determine main idea and supporting details
- Provide a summary without personal opinions or judgments
- Determine how the structure of a text contributes to the main idea
- Determine an author's point of view
- Explain how the point of view of the narrator or speaker is developed
- Distinguish among fact, opinion, reasoned judgment, and speculation in a text
- Read and understand grade-level literary and nonfiction texts

Writing
- Write arguments to support claims with clear reasons and relevant evidence
- Write informative texts that examine a topic and convey ideas
- Write narratives that include relevant descriptive details and well-structured event sequences
- Conduct short research projects and refocus the inquiry as needed
- Use technology to produce and publish writing; type three pages in a single sitting

Speaking and Listening
- Participate in discussions, both one-on-one and with a group
- Find claims supported by reasons and evidence in a speaker's argument
- Plan and deliver an informative presentation
- Place descriptions, facts, and details in a logical order when presenting

Language
- Use correct grammar and language
- Use correct capitalization, punctuation, and spelling
- Use a variety of methods to determine the meaning of unknown words
- Distinguish among words with similar meanings
  - Stingy, economical, thrifty