SEVENTH 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
    - 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.
    - Communicate precisely to others
    - Use clear definitions, state the meaning of symbols and are careful about specifying units of measure and labeling axes
    - Calculate accurately and efficiently
- Look for and make use of structure.
    - Discern patterns and structures
    - Can step back for an overview and shift perspective
    - See complicated things as single objects or as being composed of several objects
- Look for and identify ways to create shortcuts when doing problems.
    - When calculations are repeated, look for general methods, patterns and shortcuts
    - Be able to evaluate whether an answer makes sense

Grade 7 Overview | Mathematics

Seventh grade students deepen their understanding of proportional relationships to solve complicated problems. They extend their understanding of rational numbers to include computation (add, subtract, multiply, and divide). Irrational numbers are introduced in seventh

grade. Algebraic foundations are practiced and extended. Students continue to extend their understanding of probability and statistics by describing populations based on sampling, and investigate chance to develop, use, and evaluate probability models.

- Use proportional relationships to solve multi-step operation and percent problems
  - If a person walks ½ mile in each ¼ hour, what is her speed per hour?
- Compute unit rates
- Add, subtract, multiply, and divide rational numbers
- Know irrational numbers (numbers that are not rational) and approximate them with rational numbers
  - The decimal of $\sqrt{2}$ (an irrational number) is 1.4142435623. Understand that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations
- Use properties of operations to solve algebraic equations
- Use square root and cube root symbols to represent solutions to equations
- Evaluate square root and cube roots (of small perfect square roots and cube roots)
- Know that $\sqrt{2}$ is irrational
- Use numbers multiplied by a power of ten to estimate very large or very small quantities (the population of the United States is $3 \times 10_8$)
- Add, subtract, factor, and expand linear expressions
- Construct simple equations and inequalities to solve problems
- Draw, construct, and describe geometrical figures and describe the relationships between them
- Solve problems involving angle measure, area, surface area, and volume (cylinders, cones, and spheres)
- Know formulas for volumes of cones, cylinders, and spheres
- Know the formulas for area and circumference of a circle
- Use random sampling to describe and compare populations
- Find, calculate, and explain the probability of a chance event
  - For example, if a student is selected from a class, find the probability that Jane will be selected and the probability that a girl will be selected.
  - Or if 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?

Grade 7 Overview | English Language Arts

Seventh grade students read and understand grade-level fiction and nonfiction literature. They compare and contrast fictional and historical accounts. Students write a variety of pieces, creating organized arguments to support claims. When writing research projects, students collect additional questions for further research. They use eye contact, appropriate volume, and clear pronunciation when presenting.

Reading
- Explain what the text says and draw conclusions
- Determine the main ideas of a text and how they develop
- Analyze how the elements or setting of a story shape the plot
- Analyze how an author develops and contrasts his or her own point of view with those of characters or the narrator
- Analyze the structure of text
    o Graphics, headers, and captions
- Compare and contrast fictional and historical accounts
- Assess the extent to which the reasoning and evidence in a text support the author's claims
- 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 research projects and demonstrate an understanding of the subject under investigation
- Use technology to produce and publish writing; include references and links to sources

Speaking and Listening
- Participate in discussions, both one-on-one and with a group
- Evaluate the reasoning and relevance of evidence made in a speaker's argument
- Plan and present an argument
- Use eye contact, appropriate volume, and clear pronunciation 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
- Use relationships between words to better understand words
    o Synonym: a word that means the same
    o Antonym: a word that means the opposite