



Learner Objectives:

Students will:

- Understand working definitions of various science and math concepts (physics, algebra, geometry, measurement, number and operations).
- Recognize examples of various science and math concepts and how they apply to the real world.
- Collect data through measurements
- Record observations, make speculations, and draw conclusions from data
- Work cooperatively with other students to develop problem-solving strategies and compete a team project
- Apply visualization, measurement, and estimation to construct various structures according to the requirements of the project.
- Apply and adapt a variety of appropriate strategies to solve problems.
- Monitor and reflect on the process of mathematical and scientific problem solving.

Show-Me Standards:

Knowledge Standards:

In Mathematics, students in Missouri public schools will acquire a solid foundation which includes knowledge of

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| Math 1 | addition, subtraction, multiplication and division; other number sense, including numeration and estimation; and the application of these operations and concepts in the workplace and other situations |
| Math 2 | geometric and spatial sense involving measurement (including length, area, volume), trigonometry, and similarity and transformations of shapes |
| Math 3 | data analysis, probability and statistics |
| Math 4 | patterns and relationships within and among functions and algebraic, geometric and trigonometric concepts |
| Math 5 | mathematical systems (including real numbers, whole numbers, integers, fractions), geometry, and number theory (including primes, factors, multiples) |
| Math 6 | discrete mathematics (such as graph theory, counting techniques, matrices) |

In Science, students in Missouri public schools will acquire a solid foundation which includes knowledge of

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| Science 1 | properties and principles of matter and energy |
| Science 2 | properties and principles of force and motion |
| Science 7 | processes of scientific inquiry (such as formulating and testing hypotheses) |

Performance Goals:

Students will demonstrate within and integrate across all content areas the ability to

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| Goal 1.1 | develop questions and ideas to initiate and refine research |
| Goal 1.6 | discover and evaluate patterns and relationships in information, ideas and structures |
| Goal 1.8 | organize data, information and ideas into useful forms (including charts, graphs, outlines) for analysis or presentation |
| Goal 1.10 | apply acquired information, ideas and skills to different contexts as students, workers, citizens and consumers |
| Goal 2.3 | exchange information, questions and ideas while recognizing the perspectives of others |
| Goal 3.1 | identify problems and define their scope and elements |
| Goal 3.2 | develop and apply strategies based on ways others have prevented or solved problems |
| Goal 3.3 | develop and apply strategies based on one's own experience in preventing or solving problems |
| Goal 3.4 | evaluate the processes used in recognizing and solving problems |
| Goal 3.5 | reason inductively from a set of specific facts and deductively from general premises |
| Goal 3.6 | examine problems and proposed solutions from multiple perspectives |
| Goal 3.7 | evaluate the extent to which a strategy addresses the problem |
| Goal 3.8 | assess costs, benefits and other consequences of proposed solutions |
| Goal 4.1 | explain reasoning and identify information used to support decisions |
| Goal 4.5 | develop, monitor and revise plans of action to meet deadlines and accomplish goals |
| Goal 4.6 | identify tasks that require a coordinated effort and work with others to complete those tasks |