You Be the Judge

National Standards Alignment

NGSS • COMMON CORE MATH • COMMON CORE ELA

NGSS Science and Engineering Practices

SEP1: Asking Questions and Defining Problems
SEP2: Developing and Using Models
SEP3: Planning and Carrying out Investigations
SEP4: Analyzing and Interpreting Data
SEP5: Using Mathematics and Computational Thinking
SEP6: Constructing Explanations and Designing Solutions
SEP7: Engaging in Argument from Evidence
SEP8: Obtaining, Evaluating, and Communicating Information

Next Generation Science Standards

Performance Expectations

4-PS3-2: Make observations to provide evidence that energy can be transferred from place to place by sounds, light, heat, and electrical currents.
5-PS1-1: Develop a model to describe that matter is made of particles too small to be seen.
5-PS1-3: Make observations and measurements to identify materials based on their properties.
5-PS1-4: Conduct an investigation to determine whether the mixing of two or more substances results in new substances.
3-5-ETS1-1: Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
3-5-ETS1-2: Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
3-5-ETS1-3: Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.
MS-PS1-1: Develop models to describe the atomic composition of simple molecules and extended structures.
MS-PS1-2: Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.
MS-PS1-3: Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.
MS-ETS1-1: Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
MS-ETS1-2: Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
MS-ETS1-3: Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.

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Common Core State Standards Mathematical Practices

MP4: Model with mathematics.
MP5: Use appropriate tools strategically.
MP6: Attend to precision.
MP7: Look for and make use of structure.

Common Core State Standards Mathematics

5.MD.5.B: Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real-world and mathematical problems.

6.EE.7: Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.

8.G.C.9: Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.

Common Core State Standards English Language Arts

RI.5.4: Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.

RI.5.10: By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 4–5 text complexity band independently and proficiently.

W.5.10: Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

W.6.1: Write arguments to support claims with clear reasons and relevant evidence.

SL.5.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.

RST.6-8.3: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

RST.6-8.7: Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).