| Concepts by Discipline: National Science Education Standards | | | | | | | | | | | | | | | |
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| Projects and Investigations | Full Speed Ahead | Right Face | Clap On, Clap Off | Follow the Guidelines | Obstacle Detection | Get in Gear | Wheels and Distance | Measured Turns | Frequency vs. Amplitude | Faster Line Tracking | Field of View | Gears and Speeds | Hello My Name Is… | Full Stop | Ramp It UP |
| **Standard A: Science as Inquiry** | | | | | | | | | | | | | | | |
| 1.0 Students develop abilities necessary to do scientific inquiry: | | | | | | | | | | | | | | | |
| 1.001 Identify questions to be answered | X | | X | X | X | X | X | X | X | X | X | X | X | X | X |
| 1.002 Design and conduct investigations | | | | | X | X | X | X | X | X | X | X | X | | X |
| 1.003 Use tools and techniques to gather, analyze and interpret data | | | | | X | X | X | X | X | X | X | X | X | | |
| 1.004 Develop descriptions, explanations and models using evidence | | X | X | X | X | X | X | X | X | X | X | X | X | | X |
| 1.005 Think critically and logically to make relationships between evidence and explanations | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| 1.006 Recognize and analyze alternative explanations and predictions | | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| 1.007 Communicate scientific procedures and explanations | | X | | X | | | X | X | X | X | X | X | | X | |

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| 2.0 Students develop understandings about scientific inquiry: | | | | | | | | | | | | | | | |
| 2.001 Different questions suggest different investigations | | | | X | X | X | X | X | X | X | X | X | X | | |
| 2.002 Current knowledge guides scientific investigations | | | | | X | | X | X | X | X | X | | | | |
| 2.003 Mathematics is important in scientific inquiry | | | | | | | X | X | X | | X | X | | | X |
| 2.004 Technology used to gather data enhances accuracy | | | | X | X | | | | X | | X | | | | |
| 2.005 Emphasizes evidence, logical arguments, scientific principles, models and theories | X | X | | X | | | X | X | X | X | X | X | | X | X |
| 2.006 Advances through asking questions | X | | | X | X | X | X | X | X | X | X | X | X | | X |
| 2.007 Inquiry sometimes results in new ideas, methods, procedures, or technology | | | X | | | X | X | X | | X | X | X | X | X | X |

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| **Standard B: Physical Science** | | | | | | | | | | | | | | | |
| 2.0 Students should have an understanding of motions and forces. | | | | | | | | | | | | | | | |
| 2.001 Motion of an object can be described by its position, direction of motion, and speed; it can be represented on a graph | X | X | X | X | X | X | X | X | | X | | X | | X | X |
| 2.002 An object continues at a constant speed in a straight line unless subjected to a force | | | | | X | X | | | | | | X | | X | |
| 2.003 Forces reinforce or cancel one another; unbalanced forces cause changes in speed or direction of an object's motion | | | | | | X | | X | | | | | | | X |

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| 3.0 Students should have an understanding of transfer of energy. | | | | | | | | | | | | | | | |
| 3.001 Energy is associated with heat, light, electricity, mechanical motion, sound…and is transferred in many ways. | X | X | X | X | X | X | X | X | X | X | X | X | | X | X |
| 3.003 Light interacts with matter by transmission, absorption, or scattering (including reflection) | | | | X | | | | | | X | | | | | |
| **Standard E: Science and Technology** | | | | | | | | | | | | | | | |
| 1.0 Students should develop abilities of technological design. | | | | | | | | | | | | | | | |
| 1.001 Identify appropriate problems | X | X | X | X | X | X | | X | | X | | | X | X | X |
| 1.002 Design a solution or product | X | X | X | X | X | X | | | | X | | | X | X | X |
| 1.003 Implement a proposed design | X | X | X | X | X | X | | | | X | | | X | X | X |
| 1.004 Evaluate completed designs or products | X | X | X | X | X | X | | | | X | | | X | X | X |
| 1.005 Communicate the process of technological design | X | | X | X | | | | | | | | | X | X | |

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| 2.0 Students should develop understandings about science and technology. | | | | | | | | | | | | | | | |
| 2.001 Differences between science and technology | | | X | X | X | | X | X | X | X | X | X | | X | |
| 2.003 Science drives technological development and technology provides tools for inquiry | | | X | X | X | | X | X | X | X | X | | X | | |
| 2.004 Technological solutions have trade-offs in safety, cost, efficiency, appearance | | X | X | X | X | X | | X | X | | | X | X | X | X |
| 2.005 Technological designs have constraints such as properties of materials, friction, safety and aesthetics | X | X | X | X | X | X | X | X | X | | X | X | | X | X |
| 2.006 Technological solutions have intended and unintended benefits and consequences | X | X | X | X | X | X | | | X | | X | X | X | X | X |

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| **Standard F: Science in Personal and Social Perspectives** | | | | | | | | | | | | | | | |
| 5.0 Students should develop an understanding of science and technology in society. | | | | | | | | | | | | | | | |
| 5.001 Science influences society, and is neither entirely beneficial nor entirely detrimental | | | X | X | X | | | | | | | | X | | |
| 5.003 Technology influences society, the quality of life, and the ways people interact; Social needs influence the direction of technological development | | | | X | X | | | | | | | X | X | X | |
| 5.005 Scientists and engineers work in different settings, including universities, businesses, research institutes, and government agencies | | | X | X | | | X | X | | | X | | | | |
| 5.007 Science cannot answer all questions & technology cannot solve all problems; students should understand the difference between scientific and other questions | | | X | X | X | X | X | X | X | X | X | X | | X | X |

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| **Standard G: History and Nature of Science** | | | | | | | | | | | | | | | |
| 2.0 Students should develop an understanding of the nature of science. | | | | | | | | | | | | | | | |
| 2.001 Scientists formulate and test their explanations using observation, experiments and theoretical and mathematical models. | | X | | X | X | X | X | X | X | X | X | X | X | | X |
| 2.003 During scientific inquiry, people evaluate results of investigations, experiments, observations; Interpretation of data can lead to disagreement. Open communication is critical to the scientific process. | | | | | X | X | X | X | X | X | X | X | X | | X |