

<b>Pushing the Envelope</b>			
<b>2004 Science</b>			
<b>Performance Standards</b>			
<b>Georgia Science</b>			
<b>Grade 5</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
Types of Engines ( pgs. 11-23)	GA	SCI.5.S5P1.a	Students will verify that an object is the sum of its parts. Students will: Demonstrate that the mass of an object is equal to the sum of its parts by manipulating and measuring different objects made of various parts.
Chemistry ( pgs. 25-41)	GA	SCI.5.S5CS2.c	Students will have the computation and estimation skills necessary for analyzing data and following scientific explanations. Students will: Judge whether measurements and computations of quantities, such as length, area, volume, weight, or time, are reasonable answers to scientific problems by comparing them to typical values.
Chemistry ( pgs. 25-41)	GA	SCI.5.S5P2.c	Students will explain the difference between a physical change and a chemical change. Students will: Investigate the properties of a substance before, during, and after a chemical reaction to find evidence of change.
Rocket Activity ( pgs. 69-75)	GA	SCI.5.S5P2.c	Students will explain the difference between a physical change and a chemical change. Students will: Investigate the properties of a substance before, during, and after a chemical reaction to find evidence of change.
<b>Pushing the Envelope</b>			
<b>2004 Science</b>			
<b>Performance Standards</b>			
<b>Georgia Science</b>			
<b>Grade 6</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
Chemistry ( pgs. 25-41)	GA	SCI.6.S6CS4.c	Students will use tools and instruments for observing, measuring, and manipulating equipment and materials in scientific activities. Students will: Read analog and digital meters on instruments used to make direct measurements of length, volume, weight, elapsed time, rates, and temperature, and choose appropriate units for reporting various quantities.
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<b>2004 Science</b>			
<b>Performance Standards</b>			
<b>Georgia Science</b>			
<b>Grade 8</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	

Types of Engines ( pgs. 11-23)	GA	SCI.8.S8P3.a	Students will investigate relationship between force, mass, and the motion of objects. Students will: Determine the relationship between velocity and acceleration.
Chemistry ( pgs. 25-41)	GA	SCI.8.S8P1.b	Students will examine the scientific view of the nature of matter. Students will: Describe the difference between pure substances (elements and compounds) and mixtures.
Chemistry ( pgs. 25-41)	GA	SCI.8.S8P1.c	Students will examine the scientific view of the nature of matter. Students will: Describe the movement of particles in solids, liquids, gases, and plasmas states.
Chemistry ( pgs. 25-41)	GA	SCI.8.S8P1.d	Students will examine the scientific view of the nature of matter. Students will: Distinguish between physical and chemical properties of matter as physical (i.e., density, melting point, boiling point) or chemical (i.e., reactivity, combustibility).
Physics and Math ( pgs. 43-63)	GA	SCI.8.S8CS3.f	Students will have the computation and estimation skills necessary for analyzing data and following scientific explanations. Students will: Use ratios and proportions, including constant rates, in appropriate problems.
Physics and Math ( pgs. 43-63)	GA	SCI.8.S8P3.b	Students will investigate relationship between force, mass, and the motion of objects. Students will: Demonstrate the effect of balanced and unbalanced forces on an object in terms of gravity, inertia, and friction.
Rocket Activity ( pgs. 69-75)	GA	SCI.8.S8P3.b	Students will investigate relationship between force, mass, and the motion of objects. Students will: Demonstrate the effect of balanced and unbalanced forces on an object in terms of gravity, inertia, and friction.
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<b>2004 Science</b>			
<b>Performance Standards</b>			
<b>Georgia Science</b>			
<b>Grades 9-12 (Physical Science)</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
Types of Engines ( pgs. 11-23)	GA	SCI.9-12.PS.SPS8.b.2	Students will determine relationships among force, mass, and motion. Students will: Apply Newton's three laws to everyday situations by explaining the following (Relationship between force, mass and acceleration)
Chemistry ( pgs. 25-41)	GA	SCI.9-12.PS.SPS2.d	Students will explore the nature of matter, its classifications, and its system for naming types of matter. Students will: Demonstrate the Law of Conservation of Matter in a chemical reaction.

Chemistry (pgs. 25-41)	GA	SCI.9-12.PS.SPS5.b	Students will compare and contrast the phases of matter as they relate to atomic and molecular motion. Students will: Relate temperature, pressure, and volume of gases to the behavior of gases.
Physics and Math (pgs. 43-63)	GA	SCI.9-12.PS.SPS2.a	Students will explore the nature of matter, its classifications, and its system for naming types of matter. Students will: Calculate density when given a means to determine a substance's mass and volume.
Physics and Math (pgs. 43-63)	GA	SCI.9-12.PS.SPS8.b.1	Students will determine relationships among force, mass, and motion. Students will: Apply Newton's three laws to everyday situations by explaining the following (Inertia)
Physics and Math (pgs. 43-63)	GA	SCI.9-12.PS.SPS8.b.2	Students will determine relationships among force, mass, and motion. Students will: Apply Newton's three laws to everyday situations by explaining the following (Relationship between force, mass and acceleration)
Physics and Math (pgs. 43-63)	GA	SCI.9-12.PS.SPS8.b.3	Students will determine relationships among force, mass, and motion. Students will: Apply Newton's three laws to everyday situations by explaining the following (Equal and opposite forces)
Rocket Activity (pgs. 69-75)	GA	SCI.9-12.PS.SPS2.d	Students will explore the nature of matter, its classifications, and its system for naming types of matter. Students will: Demonstrate the Law of Conservation of Matter in a chemical reaction.
Rocket Activity (pgs. 69-75)	GA	SCI.9-12.PS.SPS8.b.2	Students will determine relationships among force, mass, and motion. Students will: Apply Newton's three laws to everyday situations by explaining the following (Relationship between force, mass and acceleration)
Rocket Activity (pgs. 69-75)	GA	SCI.9-12.PS.SPS8.b.3	Students will determine relationships among force, mass, and motion. Students will: Apply Newton's three laws to everyday situations by explaining the following (Equal and opposite forces)
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<b>2004 Science</b>			
<b>Performance Standards</b>			
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<b>Grades 9-12 (Physics)</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
Types of Engines (pgs. 11-23)	GA	SCI.9-12.P.SP1.a	Students will analyze the relationships between force, mass, gravity, and the motion of objects. Students will: Calculate average velocity, instantaneous velocity, and acceleration in a given frame of reference.

Types of Engines ( pgs. 11-23)	GA	SCI.9-12.P.SP1.c	Students will analyze the relationships between force, mass, gravity, and the motion of objects. Students will: Compare graphically and algebraically the relationships among position, velocity, acceleration, and time.
Physics and Math (pgs. 43-63)	GA	SCI.9-12.P.SP1.d	Students will analyze the relationships between force, mass, gravity, and the motion of objects. Students will: Measure and calculate the magnitude of frictional forces and Newton's three Laws of Motion.
Rocket Activity (pgs. 69-75)	GA	SCI.9-12.P.SP1.d	Students will analyze the relationships between force, mass, gravity, and the motion of objects. Students will: Measure and calculate the magnitude of frictional forces and Newton's three Laws of Motion.