Pushing the Envelope			
2008 Science			
Grade and Course Level Expectations			
Missouri Science			
Grade 5			
Activity/Lesson	**State**	**Standards**	
History of Aviation Propulsion (pgs. 5-9)	MO	SCI.5.8.1.C.a	Identify how the effects of inventions or technological advances (e.g., complex machinery, technologies used in space exploration, satellite imagery, weather observation and prediction, communication, transportation, robotics, tracking devices) may be helpful, harmful, or both
History of Aviation Propulsion (pgs. 5-9)	MO	SCI.5.8.2.A.a	Research biographical information about various scientists and inventors from different gender and ethnic backgrounds, and describe how their work contributed to science and technology
Physics and Math (pgs. 43-63)	MO	SCI.5.2.2.A.a	Forces affect motion: Identify the forces acting on a load and use a spring scale to measure the weight (resistance force) of the load
Physics and Math (pgs. 43-63)	MO	SCI.5.2.2.D.a	Forces affect motion: Describe how friction affects the amount of force needed to do work over different surfaces or through different media
Physics and Math (pgs. 43-63)	MO	SCI.5.2.2.F.a	Forces affect motion: Explain how work can be done on an object (force applied and distance moved)
Rocket Activity (pgs. 69-75)	MO	SCI.5.2.2.A.a	Forces affect motion: Identify the forces acting on a load and use a spring scale to measure the weight (resistance force) of the load
Rocket Activity (pgs. 69-75)	MO	SCI.5.2.2.D.a	Forces affect motion: Describe how friction affects the amount of force needed to do work over different surfaces or through different media
Rocket Activity (pgs. 69-75)	MO	SCI.5.2.2.F.a	Forces affect motion: Explain how work can be done on an object (force applied and distance moved)
Pushing the Envelope			
2008 Science			
Grade and Course Level Expectations			
Missouri Science			
Grade 6			
Activity/Lesson	**State**	**Standards**	
History of Aviation Propulsion (pgs. 5-9)	MO	SCI.6.8.1.A.a	Explain how technological improvements, such as those developed for use in space exploration, the military, or medicine, have led to the invention of new products that may improve lives here on Earth (e.g., new materials, freeze-dried foods, infrared goggles, Velcro, satellite imagery, robotics, lasers)

History of Aviation Propulsion (pgs. 5-9)	MO	SCI.6.8.2.A.a	Describe how the contributions of scientists and inventors, representing different cultures, races, and gender, have contributed to science, technology and human activity (e.g., George Washington Carver, Thomas Edison, Thomas Jefferson, Isaac Newton, Marie Curie, Galileo, Albert Einstein, Mae Jemison, Edwin Hubble, Charles Darwin, Jonas Salk, Louis Pasteur, Jane Goodall, Tom Akers, John Wesley Powell, Rachel Carson)
Pushing the Envelope			
2008 Science			
Grade and Course Level Expectations			
Missouri Science			
Grade 7			
Activity/Lesson	**State**	**Standards**	
History of Aviation Propulsion (pgs. 5-9)	MO	SCI.7.8.1.A.a	Explain how technological improvements, such as those developed for use in space exploration, the military, or medicine, have led to the invention of new products that may improve lives here on Earth (e.g., new materials, freeze-dried foods, infrared goggles, Velcro, satellite imagery, robotics, lasers)
History of Aviation Propulsion (pgs. 5-9)	MO	SCI.7.8.2.A.a	Describe how the contributions of scientists and inventors, representing different cultures, races, and gender, have contributed to science, technology and human activity (e.g., George Washington Carver, Thomas Edison, Thomas Jefferson, Isaac Newton, Marie Curie, Galileo, Albert Einstein, Mae Jemison, Edwin Hubble, Charles Darwin, Jonas Salk, Louis Pasteur, Jane Goodall, Tom Akers, John Wesley Powell, Rachel Carson)
Chemistry (pgs. 25-41)	MO	SCI.7.1.2.A.b	Energy has a source, can be stored, and can be transferred but is conserved within a system. Use the kinetic molecular model to explain changes in the temperature of a material
Physics and Math (pgs. 43-63)	MO	SCI.7.2.2.D.a	Forces affect motion: Compare the effects of balanced and unbalanced forces (including magnetic, gravity, friction, push or pull) on an object's motion
Physics and Math (pgs. 43-63)	MO	SCI.7.2.2.D.c	Forces affect motion: Explain that a change in motion is the result of an unbalanced force acting upon an object
Physics and Math (pgs. 43-63)	MO	SCI.7.2.2.D.d	Forces affect motion: Explain how the acceleration of a moving object is affected by the amount of net force applied and the mass of the object

Physics and Math (pgs. 43-63)	MO	SCI.7.2.2.F.a	Forces affect motion: Recognize examples of work being done on an object (force applied and distance moved in the direction of the applied force) with and without the use of simple machines
Physics and Math (pgs. 43-63)	MO	SCI.7.2.2.F.b	Forces affect motion: Calculate the amount of work done when a force is applied to an object over a distance (W = F x d)
Rocket Activity (pgs. 69-75)	MO	SCI.7.2.2.A.a	Forces affect motion: Identify and describe the types of forces acting on an object in motion, at rest, floating/sinking (i.e., type of force, direction, amount of force in Newtons)
Rocket Activity (pgs. 69-75)	MO	SCI.7.2.2.D.c	Forces affect motion: Explain that a change in motion is the result of an unbalanced force acting upon an object
Rocket Activity (pgs. 69-75)	MO	SCI.7.2.2.D.d	Forces affect motion: Explain how the acceleration of a moving object is affected by the amount of net force applied and the mass of the object
Rocket Activity (pgs. 69-75)	MO	SCI.7.2.2.F.b	Forces affect motion: Calculate the amount of work done when a force is applied to an object over a distance (W = F x d)
Pushing the Envelope			
2008 Science			
Grade and Course Level Expectations			
Missouri Science			
Grade 8			
Activity/Lesson	**State**	**Standards**	
History of Aviation Propulsion (pgs. 5-9)	MO	SCI.8.8.1.A.a	Explain how technological improvements, such as those developed for use in space exploration, the military, or medicine, have led to the invention of new products that may improve lives here on Earth (e.g., new materials, freeze-dried foods, infrared goggles, Velcro, satellite imagery, robotics, lasers)
History of Aviation Propulsion (pgs. 5-9)	MO	SCI.8.8.2.A.a	Describe how the contributions of scientists and inventors, representing different cultures, races, and gender, have contributed to science, technology and human activity (e.g., George Washington Carver, Thomas Edison, Thomas Jefferson, Isaac Newton, Marie Curie, Galileo, Albert Einstein, Mae Jemison, Edwin Hubble, Charles Darwin, Jonas Salk, Louis Pasteur, Jane Goodall, Tom Akers, John Wesley Powell, Rachel Carson)
Chemistry (pgs. 25-41)	MO	SCI.8.1.1.D.a	Changes in properties and states of matter provide evidence of the atomic theory of matter. Using the Kinetic Theory model, illustrate and account for the physical properties (i.e., shape, volume, malleability, viscosity) of a solid, liquid, or gas in terms of the arrangement and motion of molecules in a substance

Chemistry (pgs. 25-41)	MO	SCI.8.1.2.A.a	Energy has a source, can be stored, and can be transferred but is conserved within a system. Recognize and describe how chemical energy is stored in chemical compounds (e.g., energy stored in and released from food molecules, batteries, nitrogen explosives, fireworks, organic fuels)