

<b>Pushing the Envelope</b>			
<b>2003 Science</b>			
<b>Content Standards</b>			
<b>New Mexico Science</b>			
<b>Grade 5</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
Types of Engines ( pgs. 11-23)	NM	SCI.5.II.1.III.1	Understand how the rate of change of position is the velocity of an object in motion.
Types of Engines ( pgs. 11-23)	NM	SCI.5.II.1.III.2	Recognize that acceleration is the change in velocity with time.
Types of Engines ( pgs. 11-23)	NM	SCI.5.II.1.III.4	Understand that when a force (e.g., gravity, friction) acts on an object, the object speeds up, slows down, or goes in a different direction.
Physics and Math (pgs. 43-63)	NM	SCI.5.II.1.III.4	Understand that when a force (e.g., gravity, friction) acts on an object, the object speeds up, slows down, or goes in a different direction.
Rocket Activity (pgs. 69-75)	NM	SCI.5.II.1.III.4	Understand that when a force (e.g., gravity, friction) acts on an object, the object speeds up, slows down, or goes in a different direction.
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<b>2003 Science</b>			
<b>Content Standards</b>			
<b>New Mexico Science</b>			
<b>Grade 6</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
Physics and Math (pgs. 43-63)	NM	SCI.6.II.1.III.1	Know that every object exerts gravitational force on every other object dependent on the masses and distance of separation (e.g., motions of celestial objects, tides).
Rocket Activity (pgs. 69-75)	NM	SCI.6.II.1.III.1	Know that every object exerts gravitational force on every other object dependent on the masses and distance of separation (e.g., motions of celestial objects, tides).
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<b>2003 Science</b>			
<b>Content Standards</b>			
<b>New Mexico Science</b>			
<b>Grade 7</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
Types of Engines ( pgs. 11-23)	NM	SCI.7.II.1.I.2	Know that the total amount of matter (mass) remains constant although its form, location, and properties may change (e.g., matter in the food web).
Chemistry (pgs. 25-41)	NM	SCI.7.II.1.I.4	Describe how substances react chemically in characteristic ways to form new substances (compounds) with different properties (e.g., carbon and oxygen combine to form carbon dioxide in respiration).
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<b>2003 Science</b>			

<b>Content Standards</b>			
<b>New Mexico Science</b>			
<b>Grade 8</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
Chemistry (pgs. 25-41)	NM	SCI.8.II.I.I.SM.6	Know that compounds are made of two or more elements, but not all sets of elements can combine to form compounds.
Physics and Math (pgs. 43-63)	NM	SCI.8.II.I.III.F.2	Know that a force has both magnitude and direction.
Physics and Math (pgs. 43-63)	NM	SCI.8.II.I.III.F.3	Analyze the separate forces acting on an object at rest or in motion (e.g., gravity, elastic forces, friction), including how multiple forces reinforce or cancel one another to result in a net force that acts on an object.
Physics and Math (pgs. 43-63)	NM	SCI.8.II.I.III.M.8. a	Objects in motion will continue in motion and objects at rest will remain at rest unless acted upon by an unbalanced force (inertia).
Physics and Math (pgs. 43-63)	NM	SCI.8.II.I.III.M.8. b	If a greater force is applied to an object a proportionally greater acceleration will occur.
Physics and Math (pgs. 43-63)	NM	SCI.8.II.I.III.M.8. c	If an object has more mass the effect of an applied force is proportionally less.
Rocket Activity (pgs. 69-75)	NM	SCI.8.II.I.III.F.2	Know that a force has both magnitude and direction.
Rocket Activity (pgs. 69-75)	NM	SCI.8.II.I.III.F.3	Analyze the separate forces acting on an object at rest or in motion (e.g., gravity, elastic forces, friction), including how multiple forces reinforce or cancel one another to result in a net force that acts on an object.
Rocket Activity (pgs. 69-75)	NM	SCI.8.II.I.III.M.8. a	Objects in motion will continue in motion and objects at rest will remain at rest unless acted upon by an unbalanced force (inertia).
Rocket Activity (pgs. 69-75)	NM	SCI.8.II.I.III.M.8. b	If a greater force is applied to an object a proportionally greater acceleration will occur.
Rocket Activity (pgs. 69-75)	NM	SCI.8.II.I.III.M.8. c	If an object has more mass the effect of an applied force is proportionally less.
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<b>2003 Science</b>			
<b>Content Standards</b>			
<b>New Mexico Science</b>			
<b>Grades 9-12</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
History of Aviation Propulsion (pgs. 5-9)	NM	SCI.9-12.III.I.I.ST.3	Evaluate the influences of technology on society (e.g., communications, petroleum, transportation, nuclear energy, computers, medicine, genetic engineering) including both desired and undesired effects, and including some historical examples (e.g., the wheel, the plow, the printing press, the lightning rod).

History of Aviation Propulsion (pgs. 5-9)	NM	SCI.9-12.III.I.I.SO.10	Describe major historical changes in scientific perspectives (e.g., atomic theory, germs, cosmology, relativity, plate tectonics, evolution) and the experimental observations that triggered them.
Chemistry (pgs. 25-41)	NM	SCI.9-12.II.I.II.ET.3	Understand that energy can change from one form to another (e.g., changes in kinetic and potential energy in a gravitational field, heats of reaction, hydroelectric dams) and know that energy is conserved in these changes.
Chemistry (pgs. 25-41)	NM	SCI.9-12.II.I.III.F.4	Understand the relationship between force and pressure, and how the pressure of a volume of gas depends on the temperature and the amount of gas.
Physics and Math (pgs. 43-63)	NM	SCI.9-12.II.I.III.F.4	Understand the relationship between force and pressure, and how the pressure of a volume of gas depends on the temperature and the amount of gas.
Physics and Math (pgs. 43-63)	NM	SCI.9-12.II.I.III.F.6	Represent the magnitude and direction of forces by vector diagrams.
Physics and Math (pgs. 43-63)	NM	SCI.9-12.II.I.III.F.7	Know that when one object exerts a force on a second object, the second object exerts a force of equal magnitude and in the opposite direction on the first object (i.e., Newton's Third Law).
Physics and Math (pgs. 43-63)	NM	SCI.9-12.II.I.III.M.8.b	Newton's Second Law, $F = ma$ (e.g., momentum and its conservation, the motion of an object falling under gravity, the independence of a falling object's motion on mass)
Rocket Activity (pgs. 69-75)	NM	SCI.9-12.II.I.III.F.4	Understand the relationship between force and pressure, and how the pressure of a volume of gas depends on the temperature and the amount of gas.
Rocket Activity (pgs. 69-75)	NM	SCI.9-12.II.I.III.F.6	Represent the magnitude and direction of forces by vector diagrams.
Rocket Activity (pgs. 69-75)	NM	SCI.9-12.II.I.III.F.7	Know that when one object exerts a force on a second object, the second object exerts a force of equal magnitude and in the opposite direction on the first object (i.e., Newton's Third Law).