

| <b>Pushing the Envelope</b>               |              |                  |  |
|---|--------------|------------------|--|
| <b>2006 Mathematics</b>                   |              |                  |  |
| <b>Content Standards</b>                  |              |                  |  |
| <b>Idaho Mathematics</b>                  |              |                  |  |
| <b>Grade 5</b>                            |              |                  |  |
| <b>Activity/Lesson</b>                    | <b>State</b> | <b>Standards</b> |  |
| History of Aviation Propulsion (pgs. 5-9) | ID           | MA.5.5.M.2.1.2   | Understand and use U.S. customary and metric measurements. Estimate length, time, weight, temperature, and volume (capacity) in real-world problems using standard units.  |
| History of Aviation Propulsion (pgs. 5-9) | ID           | MA.5.5.M.2.1.4   | Understand and use U.S. customary and metric measurements. Solve real world problems related to elapsed time.  |
| Types of Engines ( pgs. 11-23)            | ID           | MA.5.5.M.2.1.8   | Understand and use U.S. customary and metric measurements. Recall length, volume (capacity), and mass equivalences involving millimeters, centimeters, meters, milliliters, liters, grams, and kilograms in the metric system. |
| Chemistry (pgs. 25-41)                    | ID           | MA.5.5.M.2.1.1   | Understand and use U.S. customary and metric measurements. Select and use appropriate units and tools to make formal measurements of length, temperature, weight, and volume (capacity) in both systems.                       |
| Chemistry (pgs. 25-41)                    | ID           | MA.5.5.M.2.1.2   | Understand and use U.S. customary and metric measurements. Estimate length, time, weight, temperature, and volume (capacity) in real-world problems using standard units.  |
| Chemistry (pgs. 25-41)                    | ID           | MA.5.5.M.2.1.8   | Understand and use U.S. customary and metric measurements. Recall length, volume (capacity), and mass equivalences involving millimeters, centimeters, meters, milliliters, liters, grams, and kilograms in the metric system. |
| Physics and Math (pgs. 43-63)             | ID           | MA.5.5.M.3.4.1   | Use algebraic symbolism as a tool to represent mathematical relationships. Identify the rule for a pattern using whole numbers and extend the pattern.   |
| <b>Pushing the Envelope</b>               |              |                  |  |
| <b>2006 Mathematics</b>                   |              |                  |  |
| <b>Content Standards</b>                  |              |                  |  |
| <b>Idaho Mathematics</b>                  |              |                  |  |
| <b>Grade 6</b>                            |              |                  |  |
| <b>Activity/Lesson</b>                    | <b>State</b> | <b>Standards</b> |  |
| History of Aviation Propulsion (pgs. 5-9) | ID           | MA.6.6.M.2.1.3   | Understand and use U.S. customary and metric measurements. Apply understanding of relationships to solve real-world problems related to elapsed time.  |
| Types of Engines ( pgs. 11-23)            | ID           | MA.6.6.M.3.2.2   | Use algebraic symbolism as a tool to represent mathematical relationships. Evaluate simple algebraic expressions using substitution.   |

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| Chemistry (pgs. 25-41)        | ID           | MA.6.6.M.3.2.2   | Use algebraic symbolism as a tool to represent mathematical relationships. Evaluate simple algebraic expressions using substitution.   |
| Physics and Math (pgs. 43-63) | ID           | MA.6.6.M.3.1.1   | Use algebraic symbolism as a tool to represent mathematical relationships. Discuss the meaning and use of variables in simple expressions and equations.   |
| Physics and Math (pgs. 43-63) | ID           | MA.6.6.M.3.2.2   | Use algebraic symbolism as a tool to represent mathematical relationships. Evaluate simple algebraic expressions using substitution.   |
| Physics and Math (pgs. 43-63) | ID           | MA.6.6.M.3.4.1   | Use algebraic symbolism as a tool to represent mathematical relationships. Extend simple patterns and state a rule (function) that generates the pattern using whole numbers, decimals, and fractions as inputs. |
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| <b>2006 Mathematics</b>       |              |                  |  |
| <b>Content Standards</b>      |              |                  |  |
| <b>Idaho Mathematics</b>      |              |                  |  |
| <b>Grade 7</b>                |              |                  |  |
| <b>Activity/Lesson</b>        | <b>State</b> | <b>Standards</b> |  |
| Types of Engines (pgs. 11-23) | ID           | MA.7.7.M.1.2.6   | Understand and use numbers. Use a variety of strategies including common mathematical formulas to compute problems drawn from real-life situations.  |
| Chemistry (pgs. 25-41)        | ID           | MA.7.7.M.1.2.6   | Understand and use numbers. Use a variety of strategies including common mathematical formulas to compute problems drawn from real-life situations.  |
| Chemistry (pgs. 25-41)        | ID           | MA.7.7.M.2.1.3   | Understand and use U.S. customary and metric measurements. Explain the differences between perimeter, area, and volume (capacity) and their measures within both systems.  |
| Chemistry (pgs. 25-41)        | ID           | MA.7.7.M.4.1.6   | Apply concepts of size, shape, and spatial relationships. Describe the concept of surface area and volume (capacity).  |
| Physics and Math (pgs. 43-63) | ID           | MA.7.7.M.1.1.2   | Understand and use numbers. Solve problems requiring the conversion between simple decimals, fractions, ratios, and percents.  |
| Physics and Math (pgs. 43-63) | ID           | MA.7.7.M.1.2.6   | Understand and use numbers. Use a variety of strategies including common mathematical formulas to compute problems drawn from real-life situations.  |
| Physics and Math (pgs. 43-63) | ID           | MA.7.7.M.2.2.1   | Understand and use U.S. customary and metric measurements. Explain rates and their relationship to ratios, and use proportions to solve problems represented with a diagram.                                     |
| Physics and Math (pgs. 43-63) | ID           | MA.7.7.M.3.1.1   | Use algebraic symbolism as a tool to represent mathematical relationships. Use variables in simple expressions and equations.  |

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| Rocket Activity (pgs. 69-75)  | ID           | MA.7.7.M.1.2.6   | Understand and use numbers. Use a variety of strategies including common mathematical formulas to compute problems drawn from real-life situations.   |
| <b>Pushing the Envelope</b>   |              |                  |   |
| <b>2006 Mathematics</b>       |              |                  |   |
| <b>Content Standards</b>      |              |                  |   |
| <b>Idaho Mathematics</b>      |              |                  |   |
| <b>Grade 8</b>                |              |                  |   |
| <b>Activity/Lesson</b>        | <b>State</b> | <b>Standards</b> |   |
| Types of Engines (pgs. 11-23) | ID           | MA.8.8.M.1.2.6   | Understand and use numbers. Use a variety of strategies including common mathematical formulas to compute problems drawn from real life situations.   |
| Chemistry (pgs. 25-41)        | ID           | MA.8.8.M.1.2.6   | Understand and use numbers. Use a variety of strategies including common mathematical formulas to compute problems drawn from real life situations.   |
| Chemistry (pgs. 25-41)        | ID           | MA.8.8.M.2.1.3   | Understand and use U.S. customary and metric measurements. Compare the differences and relationships among measures of perimeter, area, and volume (capacity) within both systems.  |
| Chemistry (pgs. 25-41)        | ID           | MA.8.8.M.2.1.4   | Understand and use U.S. customary and metric measurements. Given the formulas, find the circumference, perimeter, or area of triangles, circles, and quadrilaterals, and the volume and surface area of rectangular prisms. |
| Chemistry (pgs. 25-41)        | ID           | MA.8.8.M.4.1.6   | Apply concepts of size, shape, and spatial relationships. Apply concepts of size, shape, and spatial relationships. Explain the concept of surface area and volume (capacity).  |
| Physics and Math (pgs. 43-63) | ID           | MA.8.8.M.1.1.2   | Understand and use numbers. Use rational numbers, including percents and ratios, and pi to solve problems.  |
| Physics and Math (pgs. 43-63) | ID           | MA.8.8.M.1.2.6   | Understand and use numbers. Use a variety of strategies including common mathematical formulas to compute problems drawn from real life situations.   |
| Physics and Math (pgs. 43-63) | ID           | MA.8.8.M.2.2.1   | Understand and use U.S. customary and metric measurements. Use rates, proportions, ratios, and map scales in problem-solving situations.  |
| Physics and Math (pgs. 43-63) | ID           | MA.8.8.M.3.1.1   | Use algebraic symbolism as a tool to represent mathematical relationships. Use variables in expressions, equations, and inequalities.   |
| Physics and Math (pgs. 43-63) | ID           | MA.8.8.M.3.4.1   | Use algebraic symbolism as a tool to represent mathematical relationships. Extend patterns and identify a rule (function) that generates the pattern using rational numbers.  |

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| Rocket Activity (pgs. 69-75)              | ID           | MA.8.8.M.1.2.6   | Understand and use numbers. Use a variety of strategies including common mathematical formulas to compute problems drawn from real life situations.   |
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| <b>2006 Mathematics</b>                   |              |                  |   |
| <b>Content Standards</b>                  |              |                  |   |
| <b>Idaho Mathematics</b>                  |              |                  |   |
| <b>Grade 9</b>                            |              |                  |   |
| <b>Activity/Lesson</b>                    | <b>State</b> | <b>Standards</b> |   |
| History of Aviation Propulsion (pgs. 5-9) | ID           | MA.9.9.M.2.3.1   | Understand and use U.S. customary and metric measurements. Use customary and metric units and their relationship to one another and to real world applications involving length, area, capacity, weight, time, and temperature.           |
| Chemistry (pgs. 25-41)                    | ID           | MA.9.9.M.2.1.1   | Understand and use U.S. customary and metric measurements. Given the formulas, find the circumference, perimeter, or area of triangles, circles, and quadrilaterals, and the volume and surface area of rectangular prisms and cylinders. |
| Chemistry (pgs. 25-41)                    | ID           | MA.9.9.M.2.3.1   | Understand and use U.S. customary and metric measurements. Use customary and metric units and their relationship to one another and to real world applications involving length, area, capacity, weight, time, and temperature.           |
| Physics and Math (pgs. 43-63)             | ID           | MA.9.9.M.2.2.1   | Understand and use U.S. customary and metric measurements. Use rates, ratios, proportions, and map scales in problem-solving situations.  |
| Physics and Math (pgs. 43-63)             | ID           | MA.9.9.M.3.1.1   | Use algebraic symbolism as a tool to represent mathematical relationships. Represent mathematical relationships using variables, expressions, linear equations and inequalities.  |
| Physics and Math (pgs. 43-63)             | ID           | MA.9.9.M.3.2.1   | Use algebraic symbolism as a tool to represent mathematical relationships. Use appropriate procedures for manipulating and simplifying algebraic expressions involving variables, integers, and rational numbers.                         |
| Physics and Math (pgs. 43-63)             | ID           | MA.9.9.M.3.5.1   | Use algebraic symbolism as a tool to represent mathematical relationships. Given graphs, charts, ordered pairs, mappings, or equations, determine whether a relation is a function.   |
| Physics and Math (pgs. 43-63)             | ID           | MA.9.9.M.4.4.3   | Apply concepts of size, shape, and spatial relationships. Interpret attributes of linear relationships such as slope, rate of change, and intercepts.   |
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| <b>2006 Mathematics</b>                   |              |                  |   |
| <b>Content Standards</b>                  |              |                  |   |
| <b>Idaho Mathematics</b>                  |              |                  |   |
| <b>Grade 10</b>                           |              |                  |   |

| Activity/Lesson                           | State | Standards        |   |
|---|-------|------------------|---|
| History of Aviation Propulsion (pgs. 5-9) | ID    | MA.10.10.M.2.3.1 | Understand and use U.S. customary and metric measurements. Use customary and metric units and their relationship to one another and to real world applications involving length, area, capacity, weight, time, and temperature.   |
| Chemistry (pgs. 25-41)                    | ID    | MA.10.10.M.2.1.1 | Understand and use U.S. customary and metric measurements. Understand and use U.S. customary and metric measurements. Given the formulas, find the circumference, perimeter, or area of triangles, circles, and quadrilaterals, the volume of spheres, non-oblique prisms, cylinders, and cones, and the surface area of spheres, non-oblique prisms, cylinders, and right square-based pyramids. |
| Chemistry (pgs. 25-41)                    | ID    | MA.10.10.M.2.3.1 | Understand and use U.S. customary and metric measurements. Use customary and metric units and their relationship to one another and to real world applications involving length, area, capacity, weight, time, and temperature.   |
| Physics and Math (pgs. 43-63)             | ID    | MA.10.10.M.2.2.1 | Understand and use U.S. customary and metric measurements. Use rates, ratios, proportions, map scales, and scale factors (one- and two-dimensional) in problem-solving situations.  |
| Physics and Math (pgs. 43-63)             | ID    | MA.10.10.M.3.1.1 | Use algebraic symbolism as a tool to represent mathematical relationships. Represent mathematical relationships using variables, expressions, linear equations and inequalities.  |
| Physics and Math (pgs. 43-63)             | ID    | MA.10.10.M.3.2.1 | Use algebraic symbolism as a tool to represent mathematical relationships. Use appropriate procedures for manipulating and simplifying algebraic expressions involving variables, integers, and rational numbers.   |
| Physics and Math (pgs. 43-63)             | ID    | MA.10.10.M.3.5.1 | Use algebraic symbolism as a tool to represent mathematical relationships. Given graphs, charts, ordered pairs, mappings, or equations, determine whether a relation is a function.   |
| Physics and Math (pgs. 43-63)             | ID    | MA.10.10.M.4.4.3 | Apply concepts of size, shape, and spatial relationships. Interpret attributes of linear relationships such as slope, rate of change, and intercepts.   |
| <b>Pushing the Envelope</b>               |       |                  |   |
| <b>2006 Mathematics</b>                   |       |                  |   |
| <b>Content Standards</b>                  |       |                  |   |
| <b>Idaho Mathematics</b>                  |       |                  |   |
| <b>Grades 9-12 (Algebra I)</b>            |       |                  |   |
| Activity/Lesson                           | State | Standards        |   |
| Chemistry (pgs. 25-41)                    | ID    | MA.9-12.AI.2.c   | Understand, select, and use units of appropriate size and type to measure angles, perimeter, area, surface area, and volume.  |

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| Chemistry (pgs. 25-41)        | ID | MA.9-12.AI.2.e     | Select and apply techniques and tools to accurately find length, area, volume, and angle measures to appropriate levels of precision.   |
| Physics and Math (pgs. 43-63) | ID | MA.9-12.AI.3.b     | Relate and compare different forms of representation for a relationship.  |
| Physics and Math (pgs. 43-63) | ID | MA.9-12.AI.3.c     | Demonstrate an initial conceptual understanding of different uses of variables.   |
| Physics and Math (pgs. 43-63) | ID | MA.9-12.AI.3.1.1.f | Understand patterns, relations, and functions. Create a table of values given a contextual situation or a linear equation.  |
| Physics and Math (pgs. 43-63) | ID | MA.9-12.AI.3.2.2.a | Represent and analyze mathematical situations and structures using algebraic symbols. Model contextual situations by writing systems of linear equations containing no more than two variables. |
| Physics and Math (pgs. 43-63) | ID | MA.9-12.AI.3.2.2.b | Represent and analyze mathematical situations and structures using algebraic symbols. Solve an equation involving several variables for one variable in terms of the others.                    |
| Physics and Math (pgs. 43-63) | ID | MA.9-12.AI.3.2.2.d | Represent and analyze mathematical situations and structures using algebraic symbols. Solve one-variable compound inequalities.   |
| Physics and Math (pgs. 43-63) | ID | MA.9-12.AI.3.2.2.e | Represent and analyze mathematical situations and structures using algebraic symbols. Solve one-variable absolute value equations and inequalities.   |
| Physics and Math (pgs. 43-63) | ID | MA.9-12.AI.3.2.2.f | Represent and analyze mathematical situations and structures using algebraic symbols. Solve linear systems of equations and inequalities involving two variables using multiple strategies.     |