

Flight-Testing Newton's Laws			
2006 Mathematics			
Grade Level and Grade Span Expectations			
New Hampshire Mathematics			
Grades 9-12			
Activity/Lesson	State	Standards	
Session-10 (1-5)	NH	MA.9-12.M:G&M:HS:2	Creates formal proofs of propositions (e.g., angles, lines, circles, distance, midpoint and polygons including triangle congruence and similarity).
Session-10 (1-5)	NH	MA.9-12.M:G&M:HS:6	Applies trigonometric formulas (e.g., Law of Sines, Law of Cosines, $A = 1/2 ab \sin C$) to find angles, lengths and areas of polygons.
Session-10 (1-5)	NH	MA.9-12.M:G&M:10:9	Solves problems on and off the coordinate plane involving distance, midpoint, perpendicular and parallel lines, or slope.
Session-10 (1-5)	NH	MA.9-12.M:F&A:10:2	Demonstrates conceptual understanding of linear and nonlinear functions and relations (including characteristics of classes of functions) through an analysis of constant, variable, or average rates of change, intercepts, domain, range, maximum and minimum values, increasing and decreasing intervals and rates of change (e.g., the height is increasing at a decreasing rate); describes how change in the value of one variable relates to change in the value of a second variable; or works between and among different representations of functions and relations (e.g., graphs, tables, equations, function notation).
Session-1 (1-17)	NH	MA.9-12.M:F&A:10:2	Demonstrates conceptual understanding of linear and nonlinear functions and relations (including characteristics of classes of functions) through an analysis of constant, variable, or average rates of change, intercepts, domain, range, maximum and minimum values, increasing and decreasing intervals and rates of change (e.g., the height is increasing at a decreasing rate); describes how change in the value of one variable relates to change in the value of a second variable; or works between and among different representations of functions and relations (e.g., graphs, tables, equations, function notation).

Session-2 (1-10)	NH	MA.9-12.M:F&A:10:2	Demonstrates conceptual understanding of linear and nonlinear functions and relations (including characteristics of classes of functions) through an analysis of constant, variable, or average rates of change, intercepts, domain, range, maximum and minimum values, increasing and decreasing intervals and rates of change (e.g., the height is increasing at a decreasing rate); describes how change in the value of one variable relates to change in the value of a second variable; or works between and among different representations of functions and relations (e.g., graphs, tables, equations, function notation).
Session-3 (1-6)	NH	MA.9-12.M:F&A:10:2	Demonstrates conceptual understanding of linear and nonlinear functions and relations (including characteristics of classes of functions) through an analysis of constant, variable, or average rates of change, intercepts, domain, range, maximum and minimum values, increasing and decreasing intervals and rates of change (e.g., the height is increasing at a decreasing rate); describes how change in the value of one variable relates to change in the value of a second variable; or works between and among different representations of functions and relations (e.g., graphs, tables, equations, function notation).
Session-4 (1-11)	NH	MA.9-12.M:G&M:HS:6	Applies trigonometric formulas (e.g., Law of Sines, Law of Cosines, $A = \frac{1}{2} ab \sin C$) to find angles, lengths and areas of polygons.
Session-4 (1-11)	NH	MA.9-12.M:F&A:10:2	Demonstrates conceptual understanding of linear and nonlinear functions and relations (including characteristics of classes of functions) through an analysis of constant, variable, or average rates of change, intercepts, domain, range, maximum and minimum values, increasing and decreasing intervals and rates of change (e.g., the height is increasing at a decreasing rate); describes how change in the value of one variable relates to change in the value of a second variable; or works between and among different representations of functions and relations (e.g., graphs, tables, equations, function notation).
Session-5 (1-6)	NH	MA.9-12.M:G&M:HS:6	Applies trigonometric formulas (e.g., Law of Sines, Law of Cosines, $A = \frac{1}{2} ab \sin C$) to find angles, lengths and areas of polygons.

Session-5 (1-6)	NH	MA.9-12.M:F&A:10:2	Demonstrates conceptual understanding of linear and nonlinear functions and relations (including characteristics of classes of functions) through an analysis of constant, variable, or average rates of change, intercepts, domain, range, maximum and minimum values, increasing and decreasing intervals and rates of change (e.g., the height is increasing at a decreasing rate); describes how change in the value of one variable relates to change in the value of a second variable; or works between and among different representations of functions and relations (e.g., graphs, tables, equations, function notation).
Session-6 (1-8)	NH	MA.9-12.M:G&M:HS:6	Applies trigonometric formulas (e.g., Law of Sines, Law of Cosines, $A = \frac{1}{2} ab \sin C$) to find angles, lengths and areas of polygons.
Session-6 (1-8)	NH	MA.9-12.M:F&A:10:2	Demonstrates conceptual understanding of linear and nonlinear functions and relations (including characteristics of classes of functions) through an analysis of constant, variable, or average rates of change, intercepts, domain, range, maximum and minimum values, increasing and decreasing intervals and rates of change (e.g., the height is increasing at a decreasing rate); describes how change in the value of one variable relates to change in the value of a second variable; or works between and among different representations of functions and relations (e.g., graphs, tables, equations, function notation).
Session-7 (1-5)	NH	MA.9-12.M:G&M:HS:2	Creates formal proofs of propositions (e.g., angles, lines, circles, distance, midpoint and polygons including triangle congruence and similarity).
Session-7 (1-5)	NH	MA.9-12.M:G&M:10:2	Makes and defends conjectures, constructs geometric arguments, uses geometric properties, or uses theorems to solve problems involving angles, lines, polygons, circles, or right triangle ratios (sine, cosine, tangent) within mathematics or across disciplines or contexts (e.g., Pythagorean Theorem, Triangle Inequality Theorem).
Session-7 (1-5)	NH	MA.9-12.M:G&M:HS:6	Applies trigonometric formulas (e.g., Law of Sines, Law of Cosines, $A = \frac{1}{2} ab \sin C$) to find angles, lengths and areas of polygons.

Session-7 (1-5)	NH	MA.9-12.M:F&A:10:2	Demonstrates conceptual understanding of linear and nonlinear functions and relations (including characteristics of classes of functions) through an analysis of constant, variable, or average rates of change, intercepts, domain, range, maximum and minimum values, increasing and decreasing intervals and rates of change (e.g., the height is increasing at a decreasing rate); describes how change in the value of one variable relates to change in the value of a second variable; or works between and among different representations of functions and relations (e.g., graphs, tables, equations, function notation).
Session-8 (1-9)	NH	MA.9-12.M:G&M:10:9	Solves problems on and off the coordinate plane involving distance, midpoint, perpendicular and parallel lines, or slope.
Session-8 (1-9)	NH	MA.9-12.M:F&A:10:2	Demonstrates conceptual understanding of linear and nonlinear functions and relations (including characteristics of classes of functions) through an analysis of constant, variable, or average rates of change, intercepts, domain, range, maximum and minimum values, increasing and decreasing intervals and rates of change (e.g., the height is increasing at a decreasing rate); describes how change in the value of one variable relates to change in the value of a second variable; or works between and among different representations of functions and relations (e.g., graphs, tables, equations, function notation).
Session-8 (1-9)	NH	MA.9-12.M(CCR)-HS-2.b	Students will create and use representations to communicate mathematical ideas and to solve problems and be able to see a common structure in mathematical phenomena that come from very different contexts (e.g., the sum of the first n odd natural numbers, the areas of square gardens, and the distance traveled by a vehicle that starts at rest and accelerates at a constant rate can be represented by functions of the form $f(x) = ax^2$).

Session-9 (1-7)	NH	MA.9- 12.M:F&A:10:2	Demonstrates conceptual understanding of linear and nonlinear functions and relations (including characteristics of classes of functions) through an analysis of constant, variable, or average rates of change, intercepts, domain, range, maximum and minimum values, increasing and decreasing intervals and rates of change (e.g., the height is increasing at a decreasing rate); describes how change in the value of one variable relates to change in the value of a second variable; or works between and among different representations of functions and relations (e.g., graphs, tables, equations, function notation).
-----------------	----	------------------------	---