


Physics Curriculum Bundle # 3

Title		Suggested Dates
Forces		10/5 – 10/23 (12 days)

Big Idea/Enduring Understanding	Guiding Questions
Unbalanced forces acting on an object result in changes in the motion of the object.	How do forces affect the motion of an object?

The resources included here provide teaching examples and/or meaningful learning experiences to address the District Curriculum. In order to address the TEKS to the proper depth and complexity, teachers are encouraged to use resources to the degree that they are congruent with the TEKS and research-based best practices. Teaching using only the suggested resources does not guarantee student mastery of all standards. Teachers must use professional judgment to select among these and/or other resources to teach the district curriculum.

Knowledge & Skills with Student Expectations	Specificity & Examples	Suggested Resources (Read the note above)
<p>4 The student knows the laws governing motion.</p> <p>4D Develop and interpret a free-body diagram for force analysis</p>	<p>Including</p> <ul style="list-style-type: none"> • Represent interactions between objects through free-body diagrams 	<p>Force Table Lab – equilibrium of 3 forces. (phys_3_Forcetablevectorlab)</p> <p>Free-body Diagram website – http://www.glenbrook.k12.il.us/gbssci/phys/Class/newtlaws/u2l2c.html</p>
<p>6 The student knows forces in nature.</p> <p>6A Identify the influence of mass and distance on gravitational forces</p>	<p>Including</p> <ul style="list-style-type: none"> • Describe the law of universal gravitation. • Calculate the amount of gravitational force between two objects. • Determine the strength of a gravitational field • Differentiate between mass and weight 	
<p>4 The student knows the laws governing motion.</p> <p>4C Demonstrate the effects of forces on the motion of objects</p>	<p>Including</p> <ul style="list-style-type: none"> • Identify mass as a measure of inertia • Solve problems involving force, mass and acceleration • Interpret real life situations using Newton’s 3rd Law <ul style="list-style-type: none"> Including ○ Action and reaction forces Such as ○ Pairs of forces ○ Weight and normal force ○ Weight and tension 	<p>Inertia Balance – frequency of oscillation dependence on mass. (phys_3_inertiabalance)</p>

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<p>3 Uses critical thinking and scientific problem solving to make informed decisions.</p> <p>3E Research and describe the history of physics and contributions of scientists</p>	<p>Including</p> <ul style="list-style-type: none">• Mechanics (Aristotle, Galileo, Newton)	<p>History of Physics Website – http://web.mit.edu/redingtn/www/netadv/hist.html</p> <p>Suggested equipment – spring scales, force table, inertia balance, cart & ramp, motion detector.</p>
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