



**Science
Pre-Advanced Placement
Grade 6**

Unit Name: Force and Motion		Fifth 6 Weeks, Days to Teach: 6 Weeks	
Date Taught	TEKS and AP Required Elements	Content/Vocabulary	Guiding Questions
	<p>TEKS</p> <p>6.6 Science concepts. The student knows that there is a relationship between force and motion. The student is expected to:</p> <p>(A) identify and describe the changes in position, direction of motion, and speed of an object when acted upon by force;</p> <p>(B) demonstrate that changes in motion can be measured and graphically represented.</p> <p>AP Connection: I. Newtonian Mechanics B. Newton's laws of motion 2. Dynamics of a single particle (second law)</p> <p>F. Oscillations and gravitation 1. Simple harmonic motion (dynamics and energy relationships)</p>	<p>Acceleration Average Speed Balanced Forces Force Friction Gravity Momentum Motion Position Reference Point Unbalanced Forces Velocity</p>	<p>What are some types of motion?</p> <p>How is motion determined?</p> <p>What is the formula for average speed?</p>



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	<p>TEKS</p> <p>6.4 Scientific processes. The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to:</p> <p>(A) collect, analyze, and record information using tools including beakers, petri dishes, meter sticks, graduated cylinders, weather instruments, timing devices, hot plates, test tubes, safety goggles, spring scales, magnets, balances, microscopes, telescopes, thermometers, calculators, field equipment, compasses, computers, and computer probes; and</p> <p>(B) identify patterns in collected information using percent, average, range, and frequency.</p> <p>6.6 Science concepts. The student knows that there is a relationship between force and motion. The student is expected to:</p> <p>(A) identify and describe the changes in position, direction of motion, and</p>		<p>How is energy transformed from one form to another?</p>
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	<p>speed of an object when acted upon by force;</p> <p>6.2 Scientific processes. The student uses scientific inquiry methods during field and laboratory investigations. The student is expected to:</p> <p>(C) analyze and interpret information to construct reasonable explanations from direct and indirect evidence.</p> <p>AP Connection: I. Newtonian Mechanics B. Newton's laws of motion 2. Dynamics of a single particle (second law)</p> <p>F. Oscillations and gravitation 1. Simple harmonic motion (dynamics and energy relationships)</p>		
	<p>TEKS</p> <p>6.4 Scientific processes. The student knows how to use a variety of tools and methods to conduct science</p>		<p>Does the length and/or mass of a pendulum affect the period?</p>



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	<p>graphically represented.</p> <p>AP Connection: I. Newtonian Mechanics B. Newton's laws of motion 2. Dynamics of a single particle (second law) F. Oscillations and gravitation 1. Simple harmonic motion (dynamics and energy relationships)</p>		
	<p>TEKS</p> <p>6.4 Scientific processes. The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to:</p> <p>(A) collect, analyze, and record information using tools including beakers, petri dishes, meter sticks, graduated cylinders, weather instruments, timing devices, hot plates, test tubes, safety goggles, spring scales, magnets, balances, microscopes, telescopes, thermometers, calculators, field</p>		<p>Does drop angle and/or drop height affect both potential and kinetic energy?</p>



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<p>equipment, compasses, computers, and computer probes; and</p> <p>(B) identify patterns in collected information using percent, average, range, and frequency.</p> <p>6.6 Science concepts. The student knows that there is a relationship between force and motion. The student is expected to:</p> <p>(A) identify and describe the changes in position, direction of motion, and speed of an object when acted upon by force;</p> <p>(B) demonstrate that changes in motion can be measured and graphically represented.</p> <p>AP Connection:</p> <p>I. Newtonian Mechanics B. Newton's laws of motion</p> <p>2. Dynamics of a single particle (second law)</p> <p>F. Oscillations and gravitation</p> <p>1. Simple harmonic motion (dynamics and energy relationships)</p>		
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<p>TEKS</p> <p>6.6 Science concepts. The student knows that there is a relationship between force and motion. The student is expected to:</p> <p>(A) identify and describe the changes in position, direction of motion, and speed of an object when acted upon by force.</p> <p>AP Connection:</p> <p>I. Newtonian Mechanics B. Newton's laws of motion</p> <p>2. Dynamics of a single particle (second law)</p> <p>F. Oscillations and gravitation 1. Simple harmonic motion (dynamics and energy relationships)</p>		<p>How must acceleration and momentum be controlled in a gravity powered roller coaster?</p>
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