

**Missouri High School Science
Curriculum Mapping**

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Force, Motion and Mechanical Energy	Boardworks High School Physics Presentation
A. Relative Motion	
<p>1. Motion can be described in terms of velocity and acceleration and be represented by equations and vectors.</p>	<p>Acceleration Displacement, Velocity and Acceleration Newton's First Law Newton's Second Law Newton's Third Law Speed and Velocity Vectors and Scalars</p>
B. Types and Properties of Forces and Motion	
<p>1. The acceleration of an object is related to its mass and the force acting on it.</p>	<p>Acceleration Displacement, Velocity and Acceleration Newton's First Law Newton's Second Law Newton's Third Law Changes in Momentum Conservation of Momentum Friction Free-Body Diagrams Momentum Projectiles</p>
<p>2. The action of all forces can be explained by Newton's Laws of Motion that are used to predict changes in linear and/or rotational motion.</p>	<p>Newton's First Law Newton's Second Law Newton's Third Law</p>
<p>3. Moving electric charges produce magnetic fields that exert a magnetic force on other objects; moving magnets can produce electric forces.</p>	<p>Electromagnetic Waves Magnetism, Current and Force</p>
C. Interactions of Forces and Motions	
<p>1. A force acting on an object, moving it through a distance, can change its kinetic energy, potential energy, or both.</p>	<p>Gravitational and Potential Energy Kinetic Energy</p>

2. The ratio of output work to input energy is the efficiency of a machine or process and is always less than 100%. Power is the rate at which work is done.	Work Power Energy Transfers
3. The Law of Conservation of Momentum can be used to predict the outcome of collisions.	Conservation of Momentum Momentum