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## Space, Time and Matter (Physical Science)

Enduring Knowledge	Science Concepts	GE	Evidence of Understanding
<p><b>Force:</b> Force is an influence that can change the motion of an object.</p>	<p>a. Changes in speed or direction of motion are caused by forces. b. The greater the force, the greater the change of motion.</p>	21	Investigating and describing how different amounts of force can change the direction and speed of an object in motion
<p><b>Energy:</b> Energy is necessary for change to occur. It is the ability of matter to bring about change. - There are many forms of energy. - The total energy in the universe is constant. - Energy can be transformed and transferred, but not destroyed. (Conservation of Energy) - Energy transfers and transformations exhibit the characteristics of systems with inputs, processes and outputs as well as connections to other systems.</p>	<p>a. A complete loop is needed through which an electric charge can flow. b. Batteries are a source of electrical energy. c. Electric circuits can produce light, run motors and create sounds. d. Certain materials are conductors of electricity. Non conductors of electricity are called insulators.</p>	24	Building complete circuits, drawing diagrams of these electric circuits and explaining why electricity flows or does not flow through the circuit Using experimental data to classify different materials as conductors and insulators
<p><b>Energy:</b> Energy is necessary for change to occur. It is the ability of matter to bring about change. - There are many forms of energy. - The total energy in the universe is constant. - Energy can be transformed and transferred, but not destroyed. (Conservation of Energy) - Energy transfers and transformations exhibit the characteristics of systems with inputs, processes and outputs as well as connections to other systems.</p>	<p>a. Magnets have opposite charged poles. b. When the same poles of a magnet are placed near each other they repel.</p>	25	Describing what happens when like and opposite poles of the magnet are placed near each other

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Focusing Questions	Potential Inquiries/Activities	Resources/Notes
<p><b>How does force affect an object or substance?</b></p> <ul style="list-style-type: none"> <li>- Force can change the speed or direction of a motion.</li> </ul> <p><b>How does a force change the motion of an object?</b></p> <ul style="list-style-type: none"> <li>- A change in force is related to the strength of the push or the pull.</li> <li>- A change in force is related to the weight of the object being pushed or pulled.</li> </ul>	<p>Design an activity to manipulate the speed or direction of an object.</p>	<p>Force and Motion Kit by Delta</p>
<p><b>What are some ways electrical circuits can be constructed?</b></p> <ul style="list-style-type: none"> <li>- Electricity is a form of energy.</li> <li>- An electrical circuit can be constructed using a battery, a bulb, and wire.</li> <li>- Conductors are materials that allow electricity to pass through them.</li> <li>- Insulators are materials that do not allow electricity to pass through them.</li> </ul>	<p>Build a simple circuit to produce light. Apply your knowledge of circuits to determine which materials are conductors and insulators. How can a circuit be interrupted?</p>	
<ul style="list-style-type: none"> <li>- Magnets have two poles (North and South).</li> <li>- Unlike magnet poles attract and like poles repel.</li> <li>- Other materials can be affected by magnets.</li> </ul>	<p>Identify the poles in a magnet and how they interact. Using two bar magnets, what happens when you turn one or the other?</p>	<p>Magnet kits</p>