

**Youngstown City Schools
Grade 8 Science Pacing Guide
Grading Period 4**

Strand/ Content Statement	Duration	Clear Learning Targets	Curriculum Resources	Vocabulary/Concepts
<p>PHYSICAL SCIENCE</p> <p>There are different types of potential energy. (8.PS.3)</p> <p>*Topics within this content statement will only be assessed on Part 2: End-Of-Year Assessment of Ohio's Next Generation Assessments for Science.</p>	<p>Week 1</p>	<p>"I Can..."</p> <p>Explore and investigate various types of potential energy</p>	<p><u>Textbooks</u> Holt Series</p> <p><u>Online Simulations:</u> www.phet.colorado.edu</p> <ul style="list-style-type: none"> • Energy <p><u>On-line Simulations:</u> (http://www.explorelearning.com/)</p> <ul style="list-style-type: none"> • GIZMO: Potential Energy on Shelves • GIZMO: Roller Coaster Physics <p><u>Discovery Education:</u> (www.discoveryeducation.com)</p> <ul style="list-style-type: none"> • Exploring Energy [17:05] • Chemical Energy [2:04] <p>Downhill Energy [6:59]</p> <p><u>Ohio Department of Education - Science:</u> http://education.ohio.gov/Topics/Ohio-s-New-Learning-Standards/Science</p> <p>AIR Practice Site</p>	<p>Atoms</p> <p>Chemical Potential</p> <p>Energy</p> <p>Compression</p> <p>Elastic Potential Energy</p> <p>Electric Potential</p> <p>Energy</p> <p>Electrically Charged</p> <p>Gravitational Potential</p> <p>Energy</p> <p>Magnetic Potential</p> <p>Energy</p> <p>Mass</p> <p>Stretch</p> <p>Thermal Energy</p>

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<p>PHYSICAL SCIENCE</p> <p>Forces between objects act when the objects are in direct contact or when they are not touching. (8.PS.1)</p> <p>*Topics within this content statement will only be assessed on Part 2: End-Of-Year Assessment of Ohio's Next Generation Assessments for Science.</p>	<p>Weeks 2-5</p>	<p>"I Can..."</p> <ul style="list-style-type: none"> -identify forces that act at a distance, such as gravity, magnetism, and electrical. -describe some of the properties of magnets and some of the basic behaviors of magnetic forces - use a field model to explain the effects of forces that act at a distance. - generate an electric current by passing a conductive wire through a magnetic field and quantify electric current, using a galvanometer or multimeter. -demonstrate that the Earth has a magnetic field. -explain that objects and particles have stored energy due to their position from a reference point and this energy has the potential to cause motion. - explain that a field originates at a source and radiates away from that source decreasing in strength. -demonstrate how electrons transfer electrical and magnetic (electromagnetic) energy through waves. -plan, design, construct and implement an electromagnetic system to solve a real-world problem. 	<p><u>Curriculum Units</u></p> <ul style="list-style-type: none"> • Force Field Physics <p><u>Science Textbooks</u></p> <p>Holt Series</p> <p><u>Online Simulations:</u> www.phet.colorado.edu</p> <ul style="list-style-type: none"> • Electricity • Gravity • Charges • Weight and mass <p><u>On-line Simulations:</u> (http://www.explorellearning.com/)</p> <ul style="list-style-type: none"> • GIZMO: Charge Launcher • GIZMO: Electromagnetic Induction • GIZMO: Gravity Pitch • GIZMO: Weight and Mass <p><u>Discovery Education:</u> (www.discoveryeducation.com)</p> <ul style="list-style-type: none"> • The Mechanical Universe: Electric Fields and Forces [15:58] • How the Universe Works: Extreme Planets, Magnetic Field within Earth [7:40] • Force and Work: Energy in Action - Field Forces: Gravity [1:18] • Force and Work: Energy in Action-Field Forces: Electromagnetic Forces [3:02] • Force and Work: Energy in Action-Field Forces: The Nuclear Strong Force [0:59] <p><u>Ohio Department of Education - Science:</u> http://education.ohio.gov/Topics/Ohio-s-New-Learning-Standards/Science</p> <p><u>AIR Practice Site</u></p>	<p>Attraction</p> <p>Conductor</p> <p>Earth's magnetic field</p> <p>Electrical current</p> <p>Electromagnetic (energy, field, wave, induction)</p> <p>Field model</p> <p>Galvanometer</p> <p>Generator</p> <p>Insulator</p> <p>Ions</p> <p>Magnetic field (lines)</p> <p>Magnetic poles</p> <p>Multimeter</p> <p>Negative charge</p> <p>Negative pole</p> <p>Positive charge</p> <p>Positive pole</p> <p>Repulsion</p>
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<p>4th Quarter Activities Choice Board</p>	<p>Weeks 6-9</p>		<p><u>Choice Board Activities</u></p> <ul style="list-style-type: none">• Roller Coasters• Design Squad Challenges• Dissections• Boats• Genetic Disorders Research• Rockets• Careers in Science/STEM Research Project
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