

**Youngstown City Schools
Grade 7 Science Pacing Guide
Grading Period 2**

Strand/Topic/Content Statement	Duration	Clear Learning Targets	Curriculum Resources	Vocabulary/Concepts
<p>PHYSICAL SCIENCE</p> <p>Energy can be transformed but never lost (7.PS.2)</p> <p>Energy can be transferred through a variety of ways (7.PS.3)</p>	<p>Weeks 1-6</p>	<p>"I Can..."</p> <ul style="list-style-type: none"> - explain that energy can be transformed or transferred but is never lost. -investigate how energy can be transferred into or out of an open system. -explain the relationship between mechanical energy transferred, forces and resulting motion. - test and experiment with electric circuits to evaluate the energy transfers, resistance, current, and changes in voltage. -demonstrate that vibrations cause wave-like disturbances that transfer energy from one place to another. -differentiate between transverse and longitudinal waves -describe waves by their speed, wavelength, amplitude, and frequency. -demonstrate and explain how the wave speed is dependent upon frequency and wavelength which is directly related to the materials through which the wave travels. 	<p><u>Curriculum Units:</u></p> <ul style="list-style-type: none"> • The Magic of Energy: A Disappearing Act? • Making Waves • It's Electric! • Keeping It Hot! <p><u>Holt Series Science Textbook:</u></p> <p><u>On-line Simulations:</u></p> <ul style="list-style-type: none"> • Gizmo: Roller Coaster Physics • Gizmo: Longitudinal Waves • Gizmo: Radiation • Gizmo: Heat Transfer by Conduction • Gizmo: Conduction and Convection • Gizmo: Circuit Builder • Gizmo: Circuits 	<p>Ammeter Atoms Closed System Closed/Open Circuits Conduction Conductors Conservation of Energy Convection Current Density Electric Circuit Electric Potential Energy Transfer Energy Transformation Forces Kinetic Energy Mechanical Energy Open System Parallel Circuits Potential Energy Radiation Resistance Series Circuits Thermal Energy Voltage Voltmeter Waves</p>

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- explain that the pitch of a sound wave increases with the frequency and the loudness increases with the amplitude.
- explain that thermal energy is transferred when moving atoms collide (conduction).
- demonstrate how density is related to the process of convection.
- explain that thermal energy can be transformed into waves that radiate outward (radiation).
- using technology, apply thermal energy transfer to objects or processes on Earth or in Space.

Discovery Education:

<http://www.discoveryeducation.com>

Ohio Department of Education - Science:

<http://education.ohio.gov/Topics/Ohio-s-New-Learning-Standards/Science>

[AIR Practice Site](#)

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<p style="text-align: center;">EARTH AND SPACE SCIENCE</p> <p style="text-align: center;">The hydrologic cycle illustrates the changing states of water as it moves through the lithosphere, biosphere, hydrosphere and atmosphere (7.ESS.1)</p>	<p style="text-align: center;">Weeks 7-9</p>	<p>"I Can..."</p> <ul style="list-style-type: none"> - explain the different parts of the hydrologic cycle. -identify how water can transfer from different states. 	<p><u>Curriculum Units:</u></p> <ul style="list-style-type: none"> • How 2 knOw? H2O and the Water Cycle <p><u>Holt Series Science Textbook:</u></p> <p><u>On-line Simulations:</u></p> <ul style="list-style-type: none"> • Gizmo: Water Cycle <p><u>Discovery Education:</u> http://www.discoveryeducation.com</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><u>Primary</u></p> <p>Atmosphere Evaporation Ground Water Hydrologic cycle Hydrosphere Permeability Porosity Surface Water</p> <p><u>Secondary</u></p> <p>Aquifer Condensation Hydropower Infiltration Precipitation Sublimation</p>
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