



Cincinnati Museum Center's *Science Interactives Gallery* sponsored by Procter & Gamble, is sure to be a hit in your classroom for science-based learning! See below for a list of Standards this virtual experience covers. If you have any questions, please contact Tony Lawson at [tlawson@cincymuseum.org](mailto:tlawson@cincymuseum.org).

## Ohio Learning Standards

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| <p><b>5.PS.1.</b> The amount of change in movement of an object is based on the mass of the object and the amount of force exerted.</p> <p><b>5.PS.2.</b> Light and sound are forms of energy that behave in predictable ways.</p> <p><b>6.PS.3.</b> There are two categories of energy: kinetic and potential.</p> | <p><b>7.PS.3.</b> Energy can be transformed or transferred but is never lost.</p> <p><b>7.PS.4.</b> Energy can be transferred through a variety of ways.</p> <p><b>8.PS.2.</b> Forces can act to change the motion of objects.</p> <p><b>P.F.5.</b> Air resistance and drag.</p> <p><b>PW.EW.3.</b> Waves.</p> |
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## Kentucky Learning Standards - Next Generation Science Standards

### Forces and Interactions

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| <p><b>06-PS2-1.</b> Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.<br/><b>PS2.A: Forces and Motion.</b></p> <p><b>06-PS2-2.</b> Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.<br/><b>PS3.A: Definitions of Energy.</b></p> <p><b>07-PS3-2.</b> Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.<br/><b>PS3.A: Definitions of Energy.</b></p> | <p><b>07-PS3-4.</b> Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.<br/><b>PS3.B: Conservation of Energy and Energy Transfer.</b></p> <p><b>07-PS3-5.</b> Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.<br/><b>PS3.B: Conservation of Energy and Energy Transfer.</b></p> |
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## Kentucky Learning Standards (*continued*)

### Energy

**4-PS3-1.** Use evidence to construct an explanation relating the speed of an object to the energy of that object.  
**4-PS3.A: Definitions of Energy.**

**4-PS3-2.** Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.  
**4PS3.B: Conservation of Energy and Energy Transfer.**

**4-PS3-3.** Ask questions and predict outcomes about the changes in energy that occur when objects collide.  
**4PS3.C: Relationship Between Energy and Forces.**

### Waves and Electromagnetic Radiation

**07-PS4-1.** Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.  
**PS4.A: Wave Properties**

**07-PS4-2.** Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.  
**PS4.A: Wave Properties.**  
**PS4.B: Electromagnetic Radiation.**

**HS-PS4-1.** Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.  
**PS4.A: Wave Properties.**

**HS-PS4-3.** Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.  
**PS4.B: Electromagnetic Radiation.**

**HS-PS4-4.** Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter.  
**PS4.B: Electromagnetic Radiation.**

**HS-PS4-5.** Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.  
**PS4.C: Information Technologies and Instrumentation.**