

# Online Resources S8P2 Energy

**S8P2. Obtain, evaluate, and communicate information about the law of conservation of energy to develop arguments that energy can transform from one form to another within a system.**

## OVERALL Energy

What is Energy? <https://youtu.be/jCrOtF7T4HE>

## CONSERVATION OF ENERGY

<https://youtu.be/OTK9JrKC6EY>

**S8P2. Obtain, evaluate, and communicate information about the law of conservation of energy to develop arguments that energy can transform from one form to another within a system.**

a. Analyze and interpret data to create graphical displays that illustrate the relationships of kinetic energy to mass and speed, and potential energy to mass and height of an object.

## Potential and Kinetic Energies

<https://slideplayer.com/slide/7347511/> (slides)

<https://youtu.be/ASZv3tIK56k> (video 1:57 min.)

[https://youtu.be/C1w\\_-hL6mag](https://youtu.be/C1w_-hL6mag) (video 3:19 min.)

<https://youtu.be/Jnj8mc04r9E> (PE only- Looney Tunes 1:22 min.)

## Nearpod

<https://app.nearpod.com/presentation?pin=5433173139ED92513083D042A39DB4B8-1> (PE/KE)

<https://app.nearpod.com/presentation?pin=A9C37EE6D7801C6827F54155973D80C8-1> (KE only)

## **ARGUMENT-DRIVEN INQUIRY (ADI)**

Lab 13. Kinetic Energy: How does the mass and speed of an object affect its kinetic energy?

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b. Plan and carry out an investigation to explain the transformation between kinetic and potential energy within a system (e.g., roller coasters, pendulums, rubber bands, etc.).

[http://www.classzone.com/books/ml\\_science\\_share/vis\\_sim/mem05\\_pg69\\_potential/mem05\\_pg69\\_potential.html](http://www.classzone.com/books/ml_science_share/vis_sim/mem05_pg69_potential/mem05_pg69_potential.html) (paint can/ladder demonstration)

## ***ARGUMENT-DRIVEN INQUIRY (ADI)***

Lab 14. Potential Energy: How can you make an action figure jump higher?

## ***LITERACY***

### ***READWORKS***

*The Hoover Dam*

*Everyday Energy*

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c. Construct an argument to support a claim about the type of energy transformations within a system [e.g., lighting a match (light to heat), turning on a light (electrical to light)].

Energy Transformations

Roadrunner/Coyote <https://youtu.be/SYpJS3D6vo0>

Downhill Skier <https://www.physicsclassroom.com/mmedia/energy/se.html>

Roller Coaster <https://www.physicsclassroom.com/mmedia/energy/ce.cfm>

Dart <https://www.physicsclassroom.com/mmedia/energy/dg.cfm>

Pendulum <https://www.physicsclassroom.com/mmedia/energy/pe.cfm>

Incline <https://www.physicsclassroom.com/mmedia/energy/ie.cfm>

### **ARGUMENT-DRIVEN INQUIRY (ADI)**

Lab 16. Electrical Energy and Light Bulbs: How does the arrangement of light bulbs that are connected to a battery affect the brightness of a single bulb in that circuit?

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d. Plan and carry out investigations on the effects of heat transfer on molecular motion as it relates to the collision of atoms (conduction), through space (radiation), or in currents in a liquid or a gas (convection).

### **ARGUMENT-DRIVEN INQUIRY (ADI)**

Lab 17. Rate of Energy Transfer: How does the surface area of a substance affect the rate at which thermal energy is transferred from one substance to another?

Lab 18. Radiation and Energy Transfer: What color should we paint a building to reduce cooling costs?