

Assessment Rubric



Energy

Student's Name: _____ Assignment: _____ Level: _____

	Level 1	Level 2	Level 3	Level 4
Understanding Concepts	Demonstrates a limited understanding of concepts. Requires teacher intervention.	Demonstrates a basic understanding of concepts. Requires little teacher intervention.	Demonstrates a good understanding of concepts. Requires some teacher intervention.	Demonstrates a thorough understanding of concepts. Requires no teacher intervention.
Analysis & Application of Key Concepts	Limited application and interpretation in activity responses	Basic application and interpretation in activity responses	Good application and interpretation in activity responses	Strong application and interpretation in activity responses
Creativity and Imagination	Limited creativity and imagination applied in projects and activities	Some creativity and imagination applied in projects and activities	Satisfactory level of creativity and imagination applied in projects and activities	Beyond expected creativity and imagination applied in projects and activities
Application of Own Interests	Limited application of own interests in independent or group environment	Basic application of own interests in independent or group environment	Good application of own interests in independent or group environment	Strong application of own interests in independent or group environment

SAMPLE

STRENGTHS:

WEAKNESSES:

NEXT STEPS:

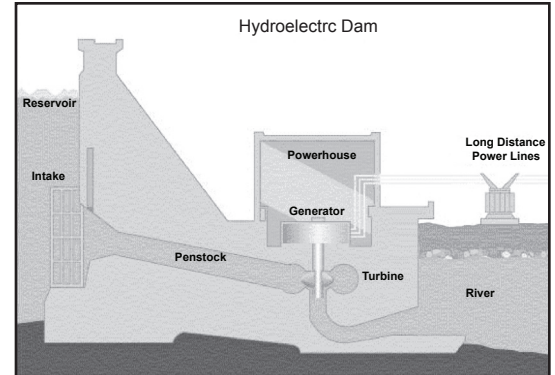


How Energy Moves and Changes Form

When energy moves, we say it is **transferred**. When energy changes from one kind into another kind, we say it is **transformed**. Most energy can be transferred. All forms of energy can be transformed into most other forms.

Let's look at some of the ways energy is transferred. Mechanical potential energy can be transferred by moving a raised object to another place at the same level. Kinetic energy is transferred by its own motion.

Light and sound are transferred by waves. Chemical energy stored in fuels can be moved trucks, trains, or ships. All forms of energy can be transformed into electricity and then transferred through wires.



What energy transformation happens when an object is falling?

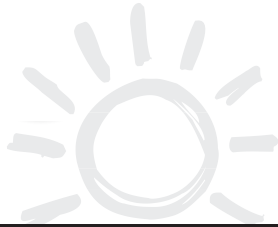


SAMPLE

Let's look at a chain of energy transfers and transformations.

1. Sunlight is turned into thermal energy. This makes convection currents in the air.
2. Warm, moist air rises in the convection current. As the air rises, it gains potential energy and forms raindrops.
3. Some, but not all, of their potential energy changes to kinetic energy as they fall and run downhill into a dam.
4. The remaining potential energy turns into kinetic energy, and then into electricity.
5. The electrical energy is transferred to your house. There, a light bulb transforms it into light and heat!

In all these transfers and transformations, energy is never lost. This rule is called the **law of conservation of energy**. Energy is not lost, but some energy is always turned into a form we can't use, usually into heat. A light bulb is a good example. Some of the electricity the bulb uses is always changed into heat that we didn't really want.



Crossword Puzzle!

Across

3. The _____ of reflection equals the _____ of incidence.
9. We hear it with our ear drum.
10. The kind of radiation that comes from the sun.
13. What smooth, shiny things do to light.
14. Something that can do work.
15. Currents that move heat.

Down

1. What we do to energy when we move it.
2. Movement of heat through a material.
4. When we use all of this, there is no more.
5. A source of energy made by splitting atoms.
6. The law of _____ of energy.
7. Power produced at large dams.
8. This kind of fuel comes from plants that lived long ago.
11. The frequency of a musical note.
12. This kind of radiation is used to take pictures of your bones.

Word List

- | | | |
|-----------------|---------------|----------|
| Angle | Energy | Pitch |
| Conduction | Fossil | Reflect |
| Conservation | Hydroelectric | Sound |
| Convection | Nonrenewable | Transfer |
| Electromagnetic | Nuclear | Xray |

Potential and Kinetic Energy on a Rollercoaster



SAMPLE