



The Nation's Favorite Fun Family Newspaper
Kidsville News! Brainworks Worksheet
September Enrichment Activities
Grades 3-6



Students: After reading "Connections," answer the following questions in complete sentences.
Answer in your own words.

1. Describe the differences in potential and kinetic energy.
2. Explain the types of potential energy and what each is used for.
3. Explain the types of kinetic energy and what each type is used for.



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ENERGY: Nature's Shapeshifter

Students: Match the invention to their definitions by drawing lines from the numbered statements to their corresponding lettered terms.

Invention Match

- | | |
|--|------------------------|
| 1. converts stored chemical energy into heat and light | A. light bulbs |
| 2. an engine that burns fuel to create heat that is then converted into either kinetic energy or mechanical work | B. power plants |
| 3. converts electric energy into light | C. electric stoves |
| 4. converts kinetic energy (motion) into electrical energy easily transmitted over great distances | D. Fire |
| 5. converts electric energy into heat engines | E. steam & gasoline |
| 6. converts the heat from nuclear energy or chemical energy to electrical energy | F. electric generators |



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Students: After reading "Wildville," answer the following questions in your own words.

1. What is horsepower?
2. How did James Watt come up with this term?
3. Why did he create this term, and why was it useful?
4. What are the different types of horsepower?
5. Why is horsepower not commonly used any longer?



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Answer Key



Students: After reading “Connections,” answer the following questions in complete sentences in your own words.

Parents and teachers: Answers are below. Answers for question three will vary.

1. Describe the differences in potential and kinetic energy.

Potential energy is stored energy and the energy of position. Kinetic energy is the motion of electrons, waves, atoms, substances, molecules, and objects.

2. Explain the types of potential energy and what each is used for.

The types of potential energy are chemical, nuclear, mechanical and gravitational.

Chemical Energy is stored in the bonds of molecules and atoms. Examples of chemical energy include natural gas, batteries, coal, and petroleum. Nuclear Energy is stored in the nucleus of an atom; it holds the nucleus together. Mechanical Energy is stored in objects by tension, such as compressed springs or stretched rubber bands. Gravitational Energy is stored in an object's height. The higher and heavier the object, the more energy is stored through gravitational force.

3. Explain the types of kinetic energy and what each type is used for.

The types of kinetic energy are motion, sound, thermal, electrical and radiant.

Motion Energy is stored in the movement of objects. The faster the movement, the more energy is stored. Sound is the movement of energy through longitudinal waves. Sound is made when a force or wave, causes a substance or object to vibrate. Thermal Energy is heat, which comes from the movement of atoms and molecules in a substance. The faster the movement, the hotter it is. Electrical Energy is energy that moves through tiny-charged particles called electrons, commonly through a wire. Radiant Energy is electromagnetic energy that travels in transverse waves. Examples include radio waves, gamma rays, x-rays, visible light and sunshine



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Answer Key

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Invention Match

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Answers:

- 1. D
- 2. E
- 3. A
- 4. F
- 5. C
- 6. B



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Answer Key

Students: After reading “Wildville,” answer the following questions in your own words. Parents and teachers: Answers are below.

1. What is horsepower?

Horsepower, or hp, is a unit of measurement of power that tells rate at which the output of motors or engines does work in a numerical form.

2. How did James Watt come up with this term?

He conducted an experiment where he observed mill horses working. The beginning of using “horsepower” as a unit of measure had a huge impact on the industrial landscape during the Industrial Revolution. After calculating the horses’ movements, he figured out that a horse could turn a mill wheel 144 times in an hour, equal to about 33,000 foot-pounds per minute.

3. Why did he create this term, and why was it useful?

He was engineer who wanted to improve the efficiency of steam engines, which were meant to replace horses as the main power sources. Horses were used in those days to pull carts, and for transportation, so horsepower was easy for people to understand

4. What are the different types of horsepower?

There are different types of horsepower; the two common ones that are used today include mechanical horsepower — also known as imperial horsepower — and metric horsepower. Mechanical horsepower is about 745.7 watts, and metric horsepower is about 735.5 watts

5. Why is horsepower not commonly used any longer?

The article does not say but it does explain that the unit of power known as “watt” is the most common measurement word worldwide. It is probably because the culture moved past the days of the horse a long time ago.