Electricity & Energy Worksheet 26

Name: _____ Class/Period: _____ Date: _____

Navigate to the Energy Information Administration web site then complete the following questions and submit assignment to GCR

Learning Targets

- I can explain what energy is and how it is used to do work.
- I can distinguish between potential and kinetic energy.
- I can identify and describe different forms of energy.
- I can identify energy sources used to generate electricity.
- I can explain the laws of energy and apply them to electrical systems.

Standards Alignment

ITEEA (STEL):

• STEL-2: Core Concepts of Energy and Power

• STEL-3: Relationships Among Technologies and Energy Use

NGSS:

• HS-PS3-1

• HS-PS3-2

• HS-ETS1-2

Part 1: What Is Energy?

1. Define energy in your own words.

2. What does it mean when scientists say that energy is the ability to do work?

3. Give two examples of how energy is used in electrical systems.

Part 2: Potential and Kinetic Energy

4. What is potential energy? What factors affect it?

5. What is kinetic energy?

6. Identify the type of energy:

• A battery on a table: _____

• Electricity flowing through a wire: _____

• A spinning fan blade: _____
• Water stored behind a dam: _____

7. Explain how potential energy can be transformed into kinetic energy.

Part 3: Forms of Energy Link

8. List five forms of energy and define important concepts of each.

10. Why is electrical energy especially useful in modern technology?

Part 4: Sources of Energy

11. What is an energy source?

12. List three energy sources used to generate electricity.

13. Choose one energy source and explain how it produces electricity.

Part 5: Laws of Energy Link

14. State the Law of Conservation of Energy.

15. Why is this law important in electrical system design?

16. A light bulb produces light and heat. Explain how this demonstrates the Law of Conservation of Energy.

TRENDS

How can resources such as this link assist us in helping households analyze usage projections through forecasting prices and energy ***trends?*** *Link* *Link2* *Link3*

Explain what this data is showing for current Issues and Trends?

RENEWABLE ENERGIES

What is renewable energy? https://www.eia.gov/energyexplained/what-is-energy/sources-of-energy.php

TYPE	DEFINE

What role does renewable energy play in the united states?
https://www.eia.gov/energyexplained/what-is-energy/sources-of-energy.php

Why don't we use more renewable energy?

What are some examples of how the DOE suggests you save money during the winter months? (https://www.energy.gov/indianenergy/articles/six-simple-steps-save-energy-and-money-winter)

What are the environmental impacts of renewable energies?

What are advantages/disadvantages of non-renewable energies?

NONRENEWABLE ENERGIES

What is renewable energy?

TYPE	DEFINE

What role does Nonrenewable energy play in the united states? (https://www.energy.gov/clean-energy)

Why don't we use more Nonrenewable energy?

How does the DOE support climate change initiative? Link

What are some examples of how the DOE suggests you save money during the winter months? (https://www.energy.gov/indianenergy/articles/six-simple-steps-save-energy-and-money-winter)

Explain the environmental impacts of Nonrenewable energies? Use real data to support your answer

What are advantages/disadvantages of non-renewable energies?