

WORKSHEET 2

Part 1: Types of energy

1. List nine forms of energy and provide examples of each of each.

Possible answers include chemical (fossil fuels, biofuels, food); nuclear (fission in a nuclear power plant and fusion in the sun); stored mechanical (rubber band, spring) gravitational (holding a book above the ground, an apple on a tree branch); radiant (visible light, x-rays, radio waves); mechanical (car moving down a street, pumping the handle on a hand-generated flashlight); electrical (current moving through a wire); thermal (boiling water, electric blanket); sound (bell, radio, person talking).

2. Classify the forms of energy you have written down into the two main types of energy discussed in the reading passage. Provide a heading for each group.

Possible answers:

Kinetic: radiant, mechanical electrical, thermal, sound

Potential: chemical, nuclear, stored mechanical, gravitational

Part 2: Energy transfer & energy transformation diagrams

For this part of the lesson you will need your Forms of Energy Table in the reading passage.

1. Write the Energy Transformation Diagram that shows the energy transformations in an incandescent light bulb.

electrical $\xrightarrow{\text{~\text{~\text{~}}}}$ *thermal* $\xrightarrow{\text{~\text{~\text{~}}}}$ *radiant*

2. Write the Energy Transformation Diagram that shows the energy transformations in a hand-generator flashlight.

mechanical $\xrightarrow{\text{~\text{~\text{~}}}}$ *electrical* $\xrightarrow{\text{~\text{~\text{~}}}}$ *thermal* $\xrightarrow{\text{~\text{~\text{~}}}}$ *radiant*

3. Your teacher has written a few common energy transformations on the board. Complete Energy Transformation Diagrams for at least three of them. If you have more time, you can do more!

Various diagrams depending on the examples chosen.

Part 3: Sources of energy

1. Explain the difference between forms of energy and sources of energy.

Forms of energy are the types of energy, and sources of energy are the resources we use to supply our energy needs

2. List the nine major sources of energy that we rely on in the U.S.

petroleum, natural gas, coal, uranium, biomass, hydropower, wind, geothermal, solar

3. List the sources of energy into two categories. Provide a heading for each group.

Possible answers include:

Non-renewable: petroleum, natural gas, coal, uranium,

Renewable: biomass, hydropower, wind, geothermal, solar

REFERENCES

- 1 U.S. Energy Information Administration. (2022). *What Is U.S. Electricity Generation by Energy Source?* U.S. Energy Information Administration. www.eia.gov/tools/faqs/faq.php?id=427&t=3