**Unit Vocabulary.** Match the definition on the right with the word on the left. Write the letter of the definition on the line to the left of the vocabulary word.

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| --- | --- | --- | --- |
| \_\_\_\_\_ | Atom | **A.** | A material or object through which electricity flows |
| \_\_\_\_\_ | Circuit | **B.** | The ability to do work |
| \_\_\_\_\_ | Conductor | **C.** | Energy that is made from sources that can be regenerated |
| \_\_\_\_\_ | Direct current | **D.** | A thorough examination of how energy is used in the home and the costs associated with those uses |
| \_\_\_\_\_ | Alternating current | **E.** | A substance that does not allow electricity to move easily |
| \_\_\_\_\_ | Electricity | **F.** | Electrical current that is constantly changing directions |
| \_\_\_\_\_ | Electron | **G.** | The basic unit of all elements of matter |
| \_\_\_\_\_ | Proton | **H.** | An electric circuit providing more than one conducting path |
| \_\_\_\_\_ | Energy Audit | **I.** | An electrical circuit providing a single conducting path |
| \_\_\_\_\_ | Insulator | **J.** | A flow of electrons, often through a circuit, resulting from a net difference in charged particles |
| \_\_\_\_\_ | Watt | **K.** | Fuels that are formed by the decay and decomposition of organisms buried in the Earth for millions of years |
| \_\_\_\_\_ | Kilowatt hour | **L.** | The difference in electrical potential between two points in an electrical circuit |
| \_\_\_\_\_ | Parallel circuit | **M.** | The rate at which energy is used |
| \_\_\_\_\_ | Renewable energy | **N.** | Electrical current that flows in one direction |
| \_\_\_\_\_ | Series circuit | **O.** | Gases that absorb infrared radiation and radiate heat in all directions |
| \_\_\_\_\_ | Energy | **P.** | A small atomic particle with a negative charge |
| \_\_\_\_\_ | Voltage | **Q.** | A typical unit for electrical power |
| \_\_\_\_\_ | Greenhouse gas | **R.** | A small atomic particle with a positive charge |
| \_\_\_\_\_ | Power | **S.** | A connection that allows current to take the path of least resistance |
| \_\_\_\_\_ | Fossil fuel | **T.** | A complete and closed path through which circulating electrical current can flow |
|  |  | **U.** | Typical unit for electrical energy used over a period of time |

**Short answer.**

1. What are three examples of fossil fuels?
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ c. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. What are three examples of renewable energy?
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ c. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. What are three benefits of using fossil fuels?

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1. What are three benefits of using renewable energy?

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1. Why is it important to reduce the greenhouse gas effect?

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1. Describe two ways that you can reduce the amount of energy you use at home.

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1. What is the difference between energy and power?

*Power is* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*whereas energy is* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Who is our local energy provider?
2. What is the typical voltage supplied in a house outlet?
3. Is your house supplied with direct or alternating current?
4. What is a common source of direct current?
5. On average, which device used the most power (from the compilation of your home energy audits)?
6. What are three different ways to determine the operating power draw of an appliance?

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1. Refrigerator A uses 1400 kWh of energy each year while Refrigerator B uses 350 kWh of energy each year. If energy costs $0.10 per kWh, what is the cost difference between running Refrigerator A and B? Show all of your work.
2. For a 100-Watt light bulb that operates 6 hours per day, how many kilowatt-hours of electricity were used? Show all of your work.

At $0.10 per kWh, what is the cost of using that light bulb per day?

At $0.10 per kWh, what is the cost of using that light bulb per month (30 days)?

At $0.10 per kWh, what is the cost of using that light bulb per year?

1. A space heater has three settings, 600W, 900W, and 1500W. If the space heater is on for 6 hours, what is the cost of operating the space heater at 600W if energy costs $0.12 per kWh? Show all of your work.

If the same space heater uses 900W and is on for 6 hours, what is the cost of operating the space heater if energy costs $0.12 per kWh? Show all of your work.

If a space heater uses 1500W and is on for 6 hours, what is the cost of operating the space heater if energy costs $0.12 per kWh?Show all of your work.