Name:

Date:

45

Energy Sources

Evaluation 1
Student's Copy

Before you continue the search for the dastardly Terawattus Energivorus, Inspector 00Watt has a challenge for you! Prove you've learned everything you need to know about energy by answering the following questions.

Q1. True or false

a. *Most of the electricity generated in Québec is produced by wind turbines.* ◯ ◯

b. *An incandescent light bulb has a longer service life than an LED bulb.* ◯ ◯

c. *The more it rains, the stronger a river's current is and the more electricity a run-of-river generating station can produce.* ◯ ◯

d. *In Québec, our power transmission and distribution lines stretch over 152,491 km.* ◯ ◯

/ 4

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Q2. Fill in the sentences below with the following words.
(Be careful! You may not need all of them!)

mechanical / reservoirs / flow rate / turbine / transformers / electrical / head / generator / chemical / penstock / thermal

a. The water's force depends on the _____ and the _____.

b. The generator in a hydroelectric power station converts the water's _____ energy into _____ energy, which can then be distributed to users.

c. The force of the moving water makes the _____ spin, which drives the _____ and produces electricity.

d. _____ are installed on utility poles and serve to drop the voltage to a level appropriate for your home.

e. _____ are large basins built to store water so that it is available any time.

/ 8

Q3. In the video *Energy is neither created or destroyed,* you learned about hydroelectric generating stations and their components.

Match each term with the right definition.

Stator •	• The stationary part of a generator made up of a winding of copper bars.
Reservoir generating station •	• A type of generating station that is powered directly by a river and doesn't have a reserve of water.
Rotor •	• The movement of electrons through a wire.
Electric current •	• The moving part of a generator to which electromagnets are attached.
Generator •	• A type of generating station powered by the flow from an artificial lake created by a dam.
Run-of-river generating station •	• A device that produces electric current in a generating station and has two parts, the stator and the rotor.

/ 6

Q4. Put the following hydropower system components in the right order (1 to 6).

A. Dam and hydroelectric generating station	1. _____
B. Reservoir	2. _____
C. Transmission lines	3. _____
D. Distribution lines	4. _____
E. Residential service loop	5. _____
F. Transformer substation	6. _____

/ 6

Q5. Answer the following questions.

a. A battery supplies energy to a circuit by converting energy. Check the right answer.

- ◯ A battery converts **nuclear** energy into **electrical** energy.
- ◯ A battery converts **chemical** energy into **electrical** energy.
- ◯ A battery converts **electrical** energy into **chemical** energy.

/ 3

b. A battery has two poles (or terminals). What are they called?

- ◯ North and south
- ◯ Black and white
- ◯ Positive and negative

/ 3

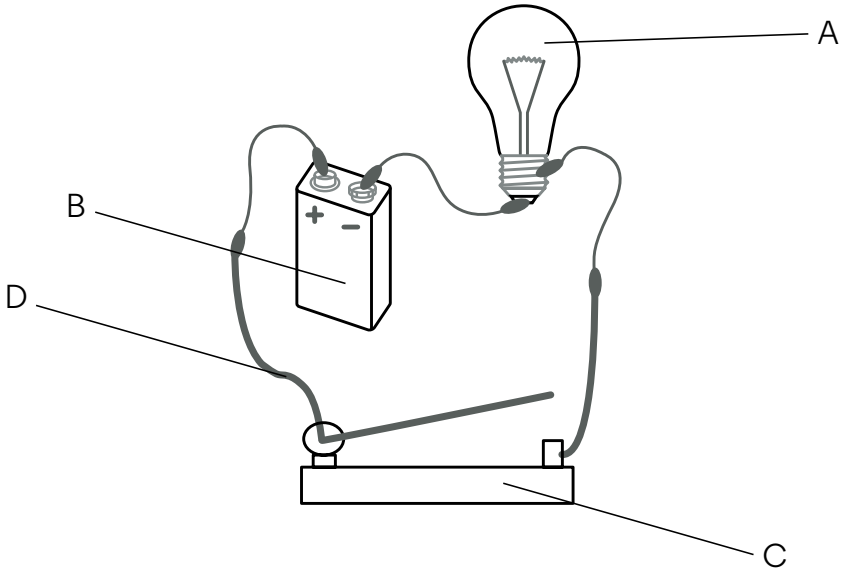
c. Which of the following materials **is not** a good conductor of electricity?

- ◯ Aluminum
- ◯ Copper
- ◯ Plastic

/ 3

Q6. Here is a diagram of a simple electric circuit.

Identify the circuit components and then match each one with its definition.



A._____

B._____

C._____

D._____

(_____): I supply power to the circuit.

(_____): Composed of a metal conductor in an insulating sheath, I provide an efficient way for electric current to travel.

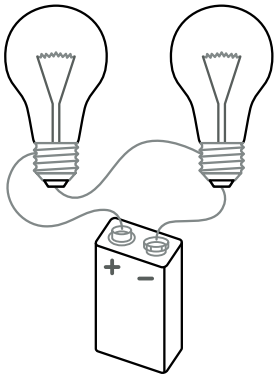
(_____): When current passes through me, I produce light.

(_____): My purpose is to open and close the circuit.

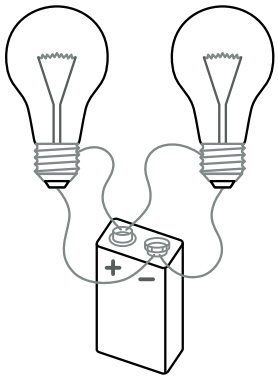
/ 8

Q7. Here are two different light circuits.

Circuit A



Circuit B



Choose the right circuit:

a. I am a series circuit.

- ◯ Circuit A
- ◯ Circuit B
- ◯ Neither

b. I am a parallel circuit.

- ◯ Circuit A
- ◯ Circuit B
- ◯ Neither

c. If one of the light bulbs burns out, electric current will continue to flow to the other bulb and it will continue to light up.

- ◯ Circuit A
- ◯ Circuit B
- ◯ Neither

d. If one of the light bulbs burns out, the current will stop flowing and the remaining bulb will no longer light up.

- ◯ Circuit A
- ◯ Circuit B
- ◯ Neither

/ 4