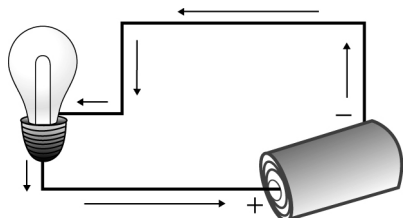


# BLM Answers

## BLM 6-1 Researching Batteries

Answers will vary depending on the web site that students use. Sample answers are provided.

1. Sample answer:



2. Students should list three types. For example:

- alkaline
- zinc chloride
- nickel-metal hydride

3. a) Answers will vary depending on the type of battery. Sample answer:

- alkaline batteries: give good performance in all electric devices; give peak performance in high-tech electronic devices

b) Answers will vary. Sample answer:

- The web site claims that alkaline batteries give good performance in all battery devices. This is not accurate. The web site doesn't discriminate between low- and high-drain devices. The chart on page 133 in the student resource indicates that alkaline batteries do not perform well in high-drain devices.

4. a) Sample answer:

- Store batteries in a cool and dry place.
- Keep batteries in their packaging until you use them.

b) Sample answer:

- Never dispose of batteries in a fire. They may break open and release toxins.

5. a) Sample answer:

- company that sells batteries

b) Sample answer:

- A company might provide accurate information but leave out information that would lower sales (e.g., alkaline batteries perform poorly in high-drain devices).

c) Sample answer:

- Knowing the bias may encourage people to do more research before making decisions.

d) Answers will vary for saying that the web site is trustworthy. For example:

- teacher recommended the web site
- web site provided references
- experts produced the content for the web site

## BLM 6-2 Chapter 6 Practice Test

1. e) rechargeable batteries
2. c) capacity
3. a) capacitor
4. g) disposable batteries
5. b) dry batteries
6. f) wet batteries
7. a) F. A portable item can be moved from place to place.
- b) T
- c) F. A battery with a capacity of 1 ampere-hours (Ah) will last more than an hour if it is used to provide a low current.
- d) F. Rechargeable batteries do not last forever. When they no longer work, they should be thrown out or recycled depending on the type of battery.
8. a) series
- b) parallel
- c) series
- d) parallel
9. a) Answers will vary. Accept any reasonable battery-powered portable electric device.
- b) Answers may vary. Look for three criteria such as:
  - performance in high-drain devices (depending on how much power the device needs)
  - whether or not the batteries are rechargeable
  - whether or not the batteries contain toxic chemicals
  - cost
10. stores
11. stronger acid
12. mercury
13. a)–c)
  - negative terminal
  - positive terminal
  - conductor
14. a) and b) Answers may vary. Look for two disadvantages such as:
  - more expensive than electric energy
  - takes energy and resources to make batteries

## BLM 6-3 Chapter 6 Test

1. f) wet batteries
2. c) capacity
3. e) dry batteries
4. b) capacitor
5. a) portable
6. h) rechargeable batteries

7. g) disposable batteries
8. a) F. A battery is a device that converts chemical energy to electric energy. Students might say that when recharging a battery, electric energy is converted to chemical energy.
- b) F. Some batteries, such as alkaline batteries, zinc-chloride, and zinc-carbon batteries can be thrown in the trash when they no longer work. Other batteries should be taken to a battery recycling centre or hazardous waste depot.
- c) T
9. a) capacitor  
b) magnet  
c) wire coil
10. The main advantage of batteries is that they are portable power.
11. a) and b) Look for two of the following benefits:
- There are no batteries to throw out or recycle.
  - Electric outlets are not needed in order to recharge a flashlight.

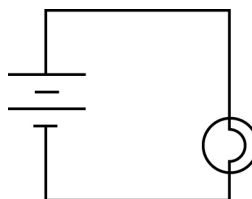
- 30 seconds of shaking produces 3 to 5 minutes of light.
- Battery-free flashlights with LEDs require little energy and last a long time.
- Some LED flashlights produce light beams that reach over 2 kilometres.

12. toxic

13. not rechargeable

14. rechargeable

15. a)



- b) • change the liquid conductor to a stronger acid  
• change the metal terminals

Some students may say: line up small batteries in series to provide higher voltage.