HOME/SCHOOL CONNECTION

Investigation 2: Series and Parallel

Safety Note: Ask an adult to help you with this activity. Be sure to follow safety rules for electricity. Just look, don't touch!

If you have an old electronic toy or device such as a retired radio, calculator, remote control, walkie-talkie, or other small device that works on electricity, take a look inside. Look for advanced circuits to see where your knowledge of electricity can lead you.

Safety Rules

- Get approval from a parent before taking a device apart.
- Make sure the device is not working any more, does not have a cord or plug, and check that batteries are removed.
- Get help opening the case. Remember, safety first—don't force anything.
- Do not take apart large appliances, such as TVs.

Things to Look For and Do

1. You might be surprised to find very few wires. What kind of conductors are used in modern circuits in place of wires? Can you draw an example?

2. Can you find any familiar components like motors and lights? What function do they serve in the device?

NOTE: If you don't have an old electric device to take apart, draw a picture of **a circuit** with two lightbulbs in parallel **in series with** a third lightbulb. Think about it . . . it can be done.

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