

# GET SNAPPED WITH SNAP CIRCUITS 4

**OVERALL TIME** 60- to 120-minute lesson

**GROUPS** Three to four kids per kit

## Next Generation Science Standards

### 4PS3-4

*Apply scientific ideas to design, test, and refine a device that converts energy from one form to another. (Examples of devices could include electric circuits that convert electrical energy into motion energy of a vehicle, light, or sound.)*

## OBJECTIVE

- Identify and construct different types of circuits.
- Make connections to energy sources in real life.

## MATERIALS

- Snap Circuit kit (one per group)
- Snap Journal (one per person)
- Chart paper
- Vocabulary cards (one set for each group)
- Timer

## KEY TERMS

**Circuit:** a complete and closed path around which electricity can flow.

**Closed Circuit:** an endless path for electricity to flow.

**Conductor:** an object or material that allows the flow of electrical current in one or more directions.

**Insulator:** an object or material that allows little or no electricity to go through.

**Negative:** the negative pole of a storage battery.

**Open Circuit:** an electric circuit that is not complete.

**Parallel Circuit:** a circuit which has two or more paths for electricity to flow.

**Polarity:** attraction toward a particular object or in a specific direction.

**Positive:** the positive pole of a storage battery

**Series Circuit:** an electrical circuit in which electricity passes through components following one path.

**Short Circuit:** the failure of electricity to flow properly.

## PREPARATION

Copy Snap Journals for the class. On chart paper, write the challenge and requirements. Have a copy of the vocabulary cards cut out for each group.

## LAUNCH 10 to 15 minutes

Have children form groups of 3 to 4. Explain to kids that they will be working together to complete an electricity vocabulary match. Pass out a set of cards to each group. Then, set a timer for five minutes. After kids have discussed and completed the match, ask if they have any questions about the vocabulary words.

## EXPLORATION 45 to 90 minutes

Have kids form groups of three to four. Once kids are in groups, explain that they will be exploring and interacting with basic circuitry using Snap Circuits. Introduce the challenge, requirements, and Snap Journal.

## CHALLENGE

As a team, think of an improvement to the classroom that could be made with electricity. For example, adding a doorbell to the classroom. Kids will make a model of their circuit using Snap Circuits. Teams will be allowed to use the Electronic Snap Circuits Instruction Manual. However, if the team uses the diagram from the manual to create the circuit, an additional change or modification must be made.

### Requirements:

- Groups will present their design.
- All kids will complete a Snap Journal.
- Each group member will be responsible for answering one or more of the following questions during the presentation:
  - *What is your new Snap Circuit design that improved your classroom?*
  - *Explain and demonstrate how the circuit works.*
  - *How did your team decide on this design?*
  - *If you used the manual diagram, what modification did your team make?*
  - *Were there any challenges your team faced with this activity?*
  - *How did your team address these challenges?*

### CLOSING 15 to 25 minutes

Allow each team 3 to 5 minutes to present.

# ELECTRICAL VOCABULARY

<b>Circuit</b>	a complete and closed path around which electricity can flow	<b>Closed Circuit</b>	an endless path for electricity to flow
<b>Short Circuit</b>	the failure of electricity to flow properly	<b>Series Circuit</b>	an electrical circuit in which electricity passes through components following one path
<b>Positive</b>	the positive pole of a storage battery	<b>Conductor</b>	An object or material that allows the flow of electrical current in one or more directions
<b>Insulator</b>	an object or material that allows little or no electricity to go through	<b>Negative</b>	the negative pole of a storage battery
<b>Open Circuit</b>	an electric circuit that is not complete	<b>Parallel Circuit</b>	a circuit which has two or more paths for electricity to flow
<b>Polarity</b>	Attraction toward a particular object or in a specific direction		