

Conductors & Insulators Activity (Student)

Materials:

Energy Stick
Paper clips
Rubber bands
Small pieces of paper
Small pieces of cardboard
Pennies

Directions:

- 1.) Use your Energy Stick to explore how electricity travels. Put one hand on each of the shiny, silver ends of the energy stick. What happens? This tells us that electricity can travel through the human body.
- 2.) Try it with a partner. Each partner holds one side of the Energy Stick, touching the shiny silver piece. Then join hands with your partner to make a complete circle, including the Energy Stick. Does it still light up? What does this tell us? Electricity can travel through multiple bodies. Try it with more than one person!
- 3.) Now try the different objects to determine which ones are conductors and which are insulators. **Example:** Hold two paper clips so each is touching the silver ends of the Energy Stick. Do the same exercise for all the objects.

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After the activity, answer the following questions:

A. What is a conductor?

B. What is an insulator?

C. Next to the objects, write the letter 'C' for conductor or 'I' for insulator based on your findings with the Energy Stick.

_____ Penny

_____ Rubber band

_____ Paper Clip

_____ Cardboard

_____ Paper

Extension: Look around your home for other items to test on the Energy Stick. Indicate whether it was a conductor or insulator.

Item: _____

Conductor or Insulator (circle)

Item: _____

Conductor or Insulator (circle)

Conductors & Insulators Activity (Parent Guide)

NOTE: This activity requires an online purchase. Allow time for shipping before completing the lesson. An Energy Stick can be purchased online from these websites:

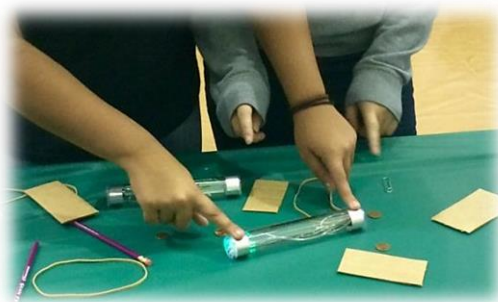
- <http://www.stevespanglerscience.com/products/electricity-energy/energy-stick.html>
- <http://www.enasco.com/product/SB48146B>
- http://www.amazon.com/Be-Amazing-Toys-Energy-Stick/dp/B004K0DSDC/ref=sr_1_1?ie=UTF8&qid=1425567119&sr=8-1&keywords=energy+stick

Materials:

Energy Stick
Paper clips
Rubber bands
Small pieces of paper
Small pieces of cardboard
Pennies

Directions: 1.) Have the student explore the flow of electricity using the Energy Stick. For the Energy Stick to light up and sound, hands must be placed on each of the silver, shiny ends of the stick.

- Explain to the student that the human body conducts electricity because of the water inside us. Explain that the Energy Sticks are safe and made to be touched, but other items, such as a downed power line, are not safe at all! This is why it is imperative to be safe with electricity so that we don't get hurt!



2.) Try it with a partner- Each partner must hold one side of the Energy Stick, remember to touch the shiny silver piece. Then join hands with your partner to make a complete circle including the Energy Stick.

- This tells us that electricity can travel through multiple bodies. You can try this with as many people as you would like. Have the students let go of hands to show that when circuit is not complete, the Energy Stick will not light up. Note: If they see someone getting hurt by electricity (shocked, burned or electrocuted) they should never touch them, as it will hurt them too!



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3.) Try the different objects to determine which ones are conductors and which are insulators. **Example:** Hold two paper clips so each is touching the silver ends of the Energy Stick. Do the same exercise for all the objects.

- Explain the difference between conductors and insulators as the child explores the different objects. Discuss that a conductor allows the flow of electricity to travel and the Energy Stick lights up. An insulator does the opposite. Electricity cannot easily flow through insulators and therefore does not allow the Energy Stick to light up and sound.

4.) Have the student complete the questions following the activity. Assist when necessary. Answers on the following page include examples of household conductors and insulators.

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After the activity, answer the following questions:

A. What is a conductor?

Something that electricity can easily flow through.

B. What is an insulator?

Something that electricity cannot flow through easily.

C. Next to the objects, write the letter 'C' for conductor or 'I' for insulator based on your findings with the energy stick.

___ **C** ___ Penny

___ **I** ___ Rubber band

___ **C** ___ Paper Clip

___ **I** ___ Cardboard

___ **I** ___ Paper

Extension: Look around your home for other items to test on the energy stick. Indicate whether it was a conductor or insulator.

Item: Plastic bag

Conductor or **Insulator (circle)**

Item: Metal fork

Conductor or Insulator (circle)