



The Nervous System

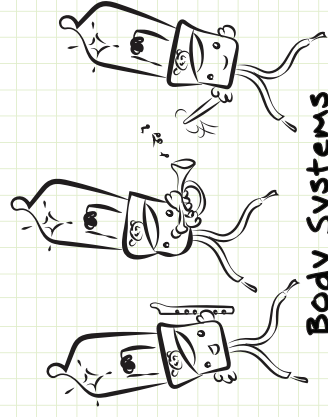
Testing Conductors and Insulators

What materials are conductors and insulators?

Make a testing loop circuit and test your materials. Circle the light bulb or the "x."

Material	Your Guess	Test Results (Circle the result):	Another Material:	Your Guess	Test Results (Circle the result):
Copper	<input checked="" type="checkbox"/> Insulator <input type="checkbox"/> Conductor	<input checked="" type="checkbox"/> Conductor <input type="checkbox"/> Insulator	<input type="text"/>	<input checked="" type="checkbox"/> Insulator <input type="checkbox"/> Conductor	<input checked="" type="checkbox"/> Conductor <input type="checkbox"/> Insulator
Paper clip (Steel)	<input checked="" type="checkbox"/> Insulator <input type="checkbox"/> Conductor	<input checked="" type="checkbox"/> Conductor <input type="checkbox"/> Insulator	<input type="text"/>	<input checked="" type="checkbox"/> Insulator <input type="checkbox"/> Conductor	<input checked="" type="checkbox"/> Conductor <input type="checkbox"/> Insulator
Cotton (Your Shirt)	<input checked="" type="checkbox"/> Insulator <input type="checkbox"/> Conductor	<input checked="" type="checkbox"/> Conductor <input type="checkbox"/> Insulator	<input type="text"/>	<input checked="" type="checkbox"/> Insulator <input type="checkbox"/> Conductor	<input checked="" type="checkbox"/> Conductor <input type="checkbox"/> Insulator
Cardboard or Paper	<input checked="" type="checkbox"/> Insulator <input type="checkbox"/> Conductor	<input checked="" type="checkbox"/> Conductor <input type="checkbox"/> Insulator	<input type="text"/>	<input checked="" type="checkbox"/> Insulator <input type="checkbox"/> Conductor	<input checked="" type="checkbox"/> Conductor <input type="checkbox"/> Insulator
Wood	<input checked="" type="checkbox"/> Insulator <input type="checkbox"/> Conductor	<input checked="" type="checkbox"/> Conductor <input type="checkbox"/> Insulator	<input type="text"/>	<input checked="" type="checkbox"/> Insulator <input type="checkbox"/> Conductor	<input checked="" type="checkbox"/> Conductor <input type="checkbox"/> Insulator

Now go around the room and test other materials that you are curious about.

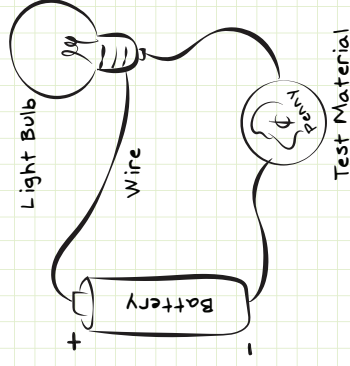


Body Systems

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Name: _____

Make this testing circuit:



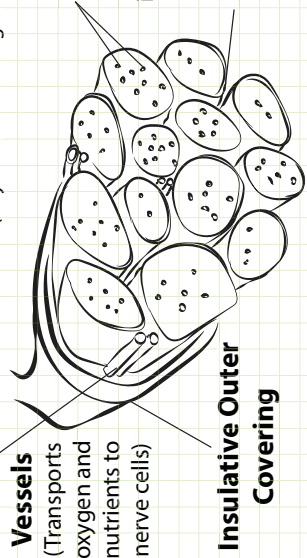
Thinking and discussion:

Understanding the basic principles of electricity will help you understand and relate to how our nervous system works. The nervous system is a lot like an electrical system. It obeys the same principles of electricity that your test circuit does. Electricity must flow in a loop. The direction of the flow of electricity is from negative to positive. Electricity flows through conductors and is held back by insulators. Did you know that your nerve cells have a positive and a negative end? Wow!

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Peripheral Nerve

(Any nerve branching from the spine)



Blood Vessels
(Transports oxygen and nutrients to nerve cells)

Bundle of hundreds of nerve cells
(Each nerve cell has an insulative covering called a Myelin Sheath)

Insulative Outer Covering
Insulative coverings for nerve bundles

This is what a cut through a nerve line in your body would look like. It is a bundle of nerve cells grouped together in a long string. It resembles computer cables that we use today.

Computer Wire Bundle

Observe a wire under the microscope. Draw and label its conductors and insulators.