

# 5<sup>th</sup> Grade Science Unit 1 Study Guide



## Vocabulary

Write the definition of each term and provide an example or picture.

Term	Description	Example/Picture
Electricity		
Static Electricity		
Conductor		
Insulator		
Electric Current		
Human-Harnessed Electricity		
Open Circuit		
Closed Circuit		
Series Circuit		
Parallel Circuit		
Magnet		
Magnetic Pole		
Magnetic Field		
Electromagnet		

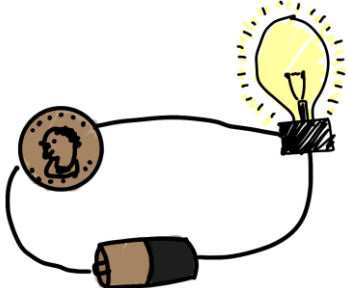
## Conductors & Insulators

Circle all of the following items that are conductors, put an X over all the items that are insulators.

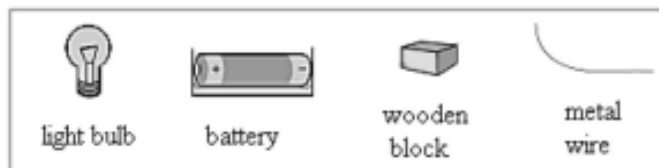
 balloon	 screw	 pencil	 crayon
 human body	 cotton ball	 aluminum can	 tweezers
 penny	 paper clip	 eraser	 light bulb
 tape	 wood	 paper	 spoon

## Circuits

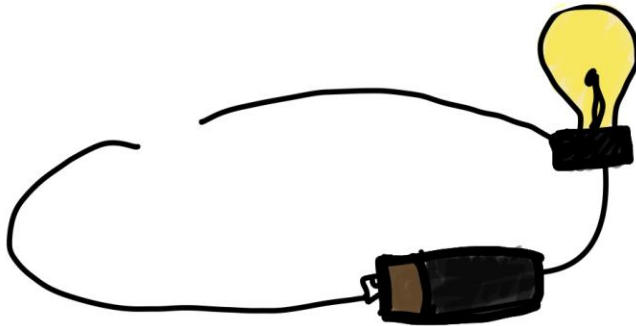
Which statement describes the role of the penny in the following diagram?

	A. It lights the bulb B. It conducts electricity C. It powers the circuit D. It keeps the circuit open
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Draw a complete, closed circuit using the following components:



Which of the following items would complete the circuit below? Explain how you know in the space provided.



**Rubber Shoe**



**Wooden Pencil**

**metal Table Leg**

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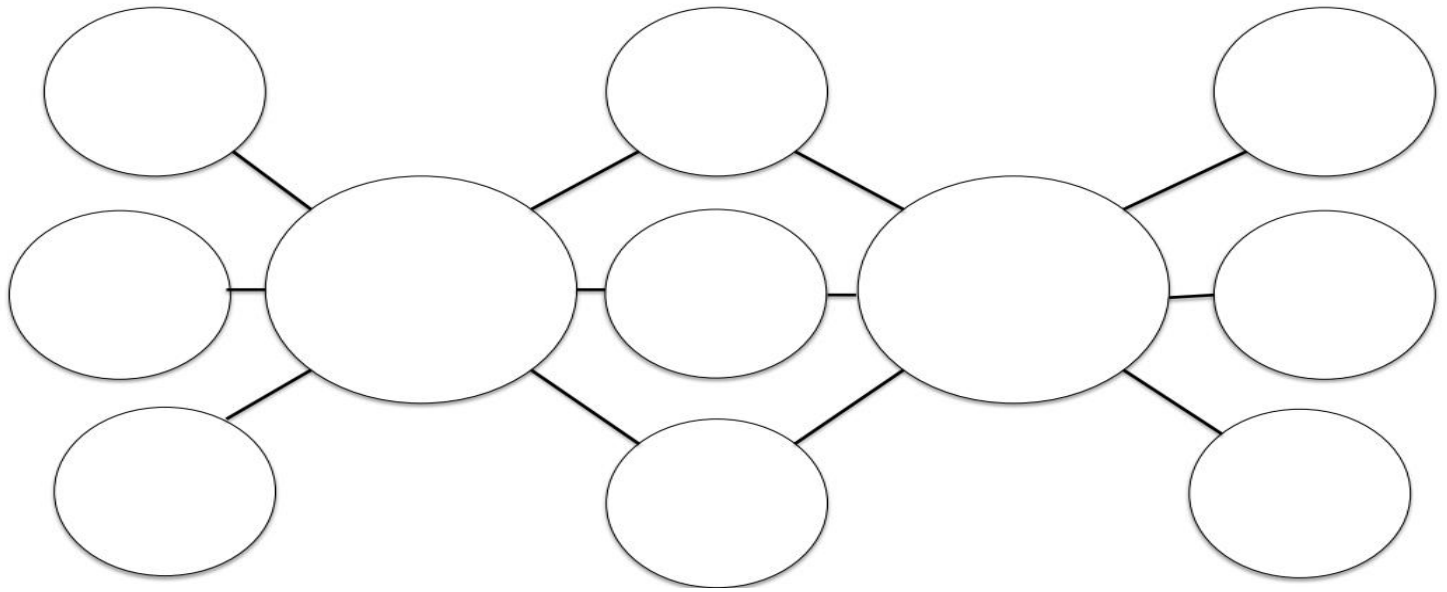
### Static and Human Harnessed Electricity

Fill in the blanks below using the following words:

Attract, repel, electrons, negatively

When \_\_\_\_\_ are transferred between objects, the object they move to becomes \_\_\_\_\_ charged. When two objects have the same charge, they will \_\_\_\_\_. When two objects have an opposite charge, they will \_\_\_\_\_.

Compare & Contrast Static and Human-Harnessed Electricity using the graphic organizer below. Be sure to include definitions AND examples.



### Magnets & Electromagnets

Which objects below would a magnet pick up? Circle all that apply.

<ul style="list-style-type: none"> <li>• Paper clip</li> <li>• Wooden pencil</li> <li>• Quarter</li> <li>• Aluminum Foil</li> </ul>	<ul style="list-style-type: none"> <li>• Staple</li> <li>• Plastic bottle</li> <li>• Cottonball</li> <li>• Paper mask</li> </ul>	<ul style="list-style-type: none"> <li>• Rubber band</li> <li>• Nail</li> <li>• Penny</li> <li>• Shoe</li> </ul>
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Put a check in the box of either/both magnets for each of the statements below:

Statements	<u>Permanent Magnets</u>	<u>Electromagnets</u>
Will attract most metals	<input type="checkbox"/>	<input type="checkbox"/>
Is always magnetic	<input type="checkbox"/>	<input type="checkbox"/>
Can be made stronger or weaker	<input type="checkbox"/>	<input type="checkbox"/>
Used in power plants	<input type="checkbox"/>	<input type="checkbox"/>
Can be turned on/off	<input type="checkbox"/>	<input type="checkbox"/>
Is part of an electric motor	<input type="checkbox"/>	<input type="checkbox"/>

Jill designed an experiment to test the strength of a permanent magnet and an electromagnet that she made using an iron nail wrapped in a coil of wire and connected to a battery. She recorded her results in a table.

Number of paper clips picked up by each magnet			
Permanent magnet		Electromagnet	
Trial #1	5	Trial #1	16
Trial #2	7	Trial #2	13
Trial #3	9	Trial #3	13

Jill's friend Rose says that the electromagnet is weaker because it picked up less magnets in trials 2 and 3. Jill says that the electromagnet is stronger. Who do you agree with? Use evidence from the chart in your answer.

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