

## Differentiate between conductors and insulators of thermal and electrical energy

### Student sheet 2.a Conductivity Steps for Success

1. Think about the definitions of insulator and conductor.
2. Look at each picture to see if you can identify whether it is an insulator or a conductor.
3. Place the picture on the side you think it belongs.
4. Say to your partner "I think this is a/an (insulator/conductor) because\_\_\_\_\_.
5. Do four objects out-loud as a group then fill in the sentence stems below to explain your answer for the last 12 objects.

1. I think the \_\_\_\_\_ is a/an \_\_\_\_\_ because \_\_\_\_\_

\_\_\_\_\_.

2. I think the \_\_\_\_\_ is a/an \_\_\_\_\_ because \_\_\_\_\_

\_\_\_\_\_.

3. I think the \_\_\_\_\_ is a/an \_\_\_\_\_ because \_\_\_\_\_

\_\_\_\_\_.

4. I think the \_\_\_\_\_ is a/an \_\_\_\_\_ because \_\_\_\_\_

\_\_\_\_\_.

5. I think the \_\_\_\_\_ is a/an \_\_\_\_\_ because \_\_\_\_\_

\_\_\_\_\_.

6. I think the \_\_\_\_\_ is a/an \_\_\_\_\_ because \_\_\_\_\_

\_\_\_\_\_.

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5. Do four objects out-loud as a group then fill in the sentence stems below to explain your answer for the last 12 objects.

7. I think the \_\_\_\_\_ is a/an \_\_\_\_\_ because \_\_\_\_\_

\_\_\_\_\_.

8. I think the \_\_\_\_\_ is a/an \_\_\_\_\_ because \_\_\_\_\_

\_\_\_\_\_.

9. I think the \_\_\_\_\_ is a/an \_\_\_\_\_ because \_\_\_\_\_

\_\_\_\_\_.

10. I think the \_\_\_\_\_ is a/an \_\_\_\_\_ because \_\_\_\_\_

\_\_\_\_\_.

11. I think the \_\_\_\_\_ is a/an \_\_\_\_\_ because \_\_\_\_\_

\_\_\_\_\_.

12. I think the \_\_\_\_\_ is a/an \_\_\_\_\_ because \_\_\_\_\_









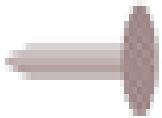


\_\_\_\_\_.

Conductor

Insulator

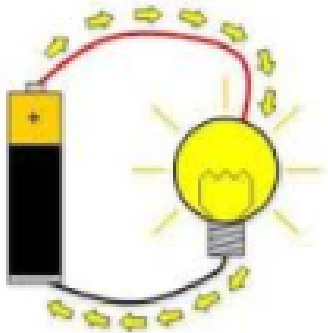
2.a

Cut out the objects and use them for board 2.a. Sort them based on the physical property on the chart. Each time you sort the object explain to your partner why you are making that decision.

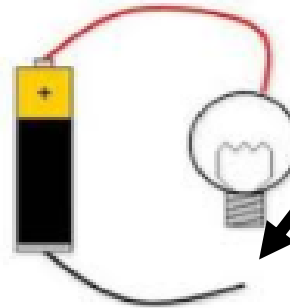
<p>Brass Ring</p> 	<p>Paperclip</p> 	<p>Wood Blocks</p> 	<p>Balloons</p> 
<p>Car Key</p> 	<p>Cork</p> 	<p>Rubber Duck</p> 	<p>Tree</p> 
<p>Aluminum Can</p> 	<p>Metal Nail</p> 	<p>Log</p> 	<p>Metal Washer</p> 

# WHEN IT IS OPEN IT IS BROKEN

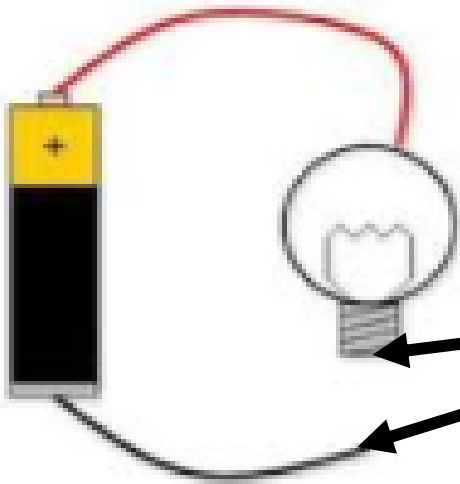
# WHEN IT IS CLOSED IT FLOWS



When all of the parts of a circuit are connected, the energy can flow like in the picture to the left.



When the circuit is open and not all of the parts are touching the energy cannot flow.



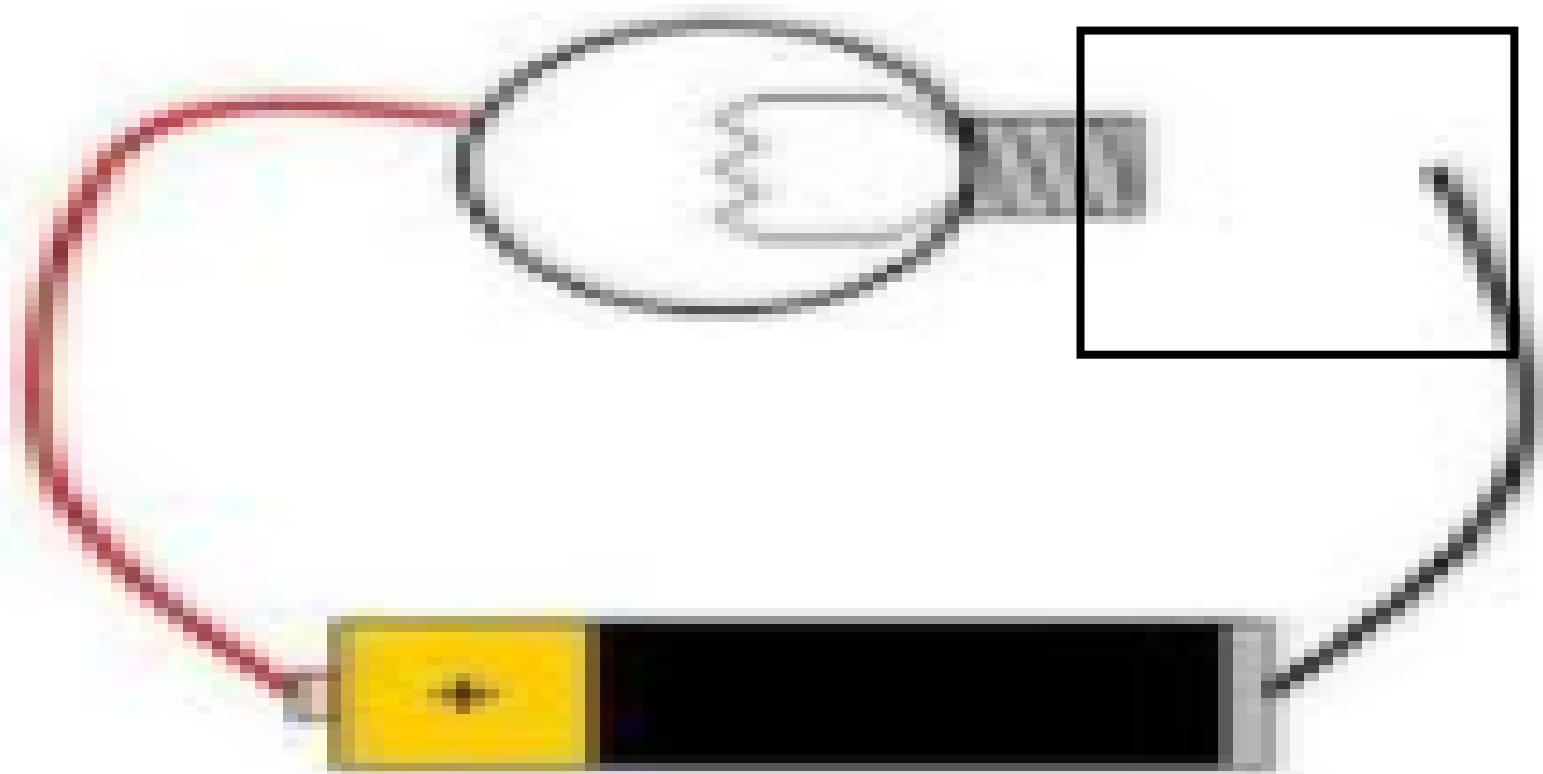
When a conductor connects the circuit and touches both sides it will allow the energy to flow and light the light bulb.

Place the items in the box and use the sentence stem below to discuss conductors and insulators.

Sentence Stem:

I think that the \_\_\_\_\_ is a (insulator, conductor) because \_\_\_\_\_

\_\_\_\_\_



**Conductor**

**Conductor**

**Conductor**

**Conductor**

**Conductor**

**Conductor**

**Conductor**

**Conductor**

**Conductor  
Or  
Insulator  
Game**

**Conductor  
Or  
Insulator  
Game**

**Conductor  
Or  
Insulator  
Game**

**Conductor  
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**Conductor  
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**Conductor  
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**Conductor  
Or  
Insulator  
Game**



**Insulator**

**Insulator**

**Insulator**

**Insulator**

**Insulator**

**Insulator**

**Insulator**

**Insulator**

**Conductor**  
**Or**  
**Insulator**  
**Game**

**Conductor**  
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**Game**

**Conductor**  
**Or**  
**Insulator**  
**Game**

Iron Metal Trophy



Iron Metal Golf Club



Iron Metal Nail



Iron Metal Fishing Hook



Wood Phone Case



Wood Table



Wood Bat



Wood Chess Board



**Conductor**  
**Or**  
**Insulator**  
**Game**

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**Conductor**  
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**Insulator**  
**Game**

Iron Metal Keys



Iron Metal Paperclip



Iron Metal Spoon



Iron Metal Screw



Wood Spoons



Wood Table



Wood Bowl



Wood Ruler



**Conductor**  
**Or**  
**Insulator**  
**Game**

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**Game**

**Conductor**  
**Or**  
**Insulator**  
**Game**

Rubber Duck



Rubber Band



Rubber Tire



Rubber Gloves



Glass Cup



Glass Marbles



Glass Window



Glass Vase



**Conductor**  
**Or**  
**Insulator**  
**Game**

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**Game**



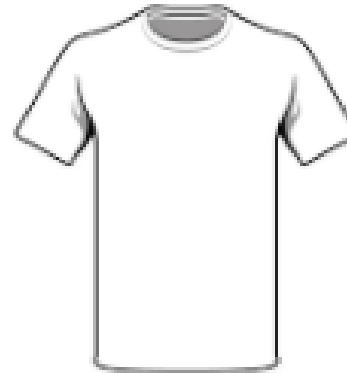
Cloth Napkin



Cloth Towel



Cloth Shirt



Cloth Shorts



Plastic Legos



Plastic Water Bottle



Plastic Tupperware



Plastic Bucket



**Conductor**  
**Or**  
**Insulator**  
**Game**

**Conductor**  
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**Conductor**  
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**Game**

**Conductor**  
**Or**  
**Insulator**  
**Game**

Wood Crate



Wood Chair



Wood Table



Wood Toothpick



Iron Metal Scissors



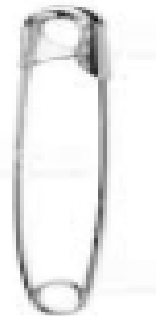
Iron Metal Pouring Cup



Iron Metal Anvil



Iron Safety Pin



**Conductor  
Or  
Insulator  
Game**

**Conductor  
Or  
Insulator  
Game**

**Conductor  
Or  
Insulator  
Game**

**Conductor  
Or  
Insulator  
Game**

**Conductor  
Or  
Insulator  
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**Conductor  
Or  
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**Conductor  
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**Conductor  
Or  
Insulator  
Game**

### **Instructions for Conductor and Insulators Game**

1. Each group should have three or four scholars.
2. Each scholar should have one conductor card and one insulator card.
3. Hold one card in each hand.
4. The dealer will rotate each round.
5. The dealer will pull on card and place it in the center.
6. Scholars will look to see if the card is an insulator or a conductor.
7. Whoever placed the correct card on the item first, and justifies their response gets the card.
8. If there is a disagreement scholars will check the scholar answer key.
9. The scholar with the most cards wins!

### **Accountable talk prompts for insulator and conductor game.**

I think that \_\_\_\_\_ is a(n) \_\_\_\_\_ (insulator, conductor) because \_\_\_\_\_.

I disagree because \_\_\_\_\_.

I agree because \_\_\_\_\_.

# Scholar Answer Key

Object Name	Object Material	Insulator	Conductor
Iron Metal Scissors	Metal		X
Iron Metal Pouring Cup	Metal		X
Iron Metal Anvil	Metal		X
Iron Safety Pin	Metal		X
Iron Metal Screw	Metal		X
Iron Metal trophy	Metal		X
Iron Metal Golf Club	Metal		X
Iron Metal Nail	Metal		X
Iron Metal Fishing Hook	Metal		X
Iron Metal Keys	Metal		X
Iron Metal Spoon	Metal		X
Iron Metal Screw	Metal		X
Wood Phone Case	Wood	X	
Wood Desk	Wood	X	
Wood Bat	Wood	X	
Wood Chess Board	Wood	X	
Wood Spoons	Wood	X	
Wood Table	Wood	X	
Wood Bowl	Wood	X	
Wood Ruler	Wood	X	
Wood Crate	Wood	X	
Wood Toothpicks	Wood	X	

# Scholar Answer Key

Object Name	Object Material	Insulator	Conductor
Cloth Napkin	Cloth	X	
Cloth Towel	Cloth	X	
Cloth Shirt	Cloth	X	
Cloth Shorts	Cloth	X	
Rubber Duck	Rubber	X	
Rubber Band	Rubber	X	
Rubber Tire	Rubber	X	
Rubber Gloves	Rubber	X	
Plastic Legos	Plastic	X	
Plastic Water Bottle	Plastic	X	
Plastic Tupperware	Plastic	X	
Plastic Bucket	Plastic	X	
Glass Cup	Glass	X	
Glass Marbles	Glass	X	
Glass Window	Glass	X	
Glass Vase	Glass	X	