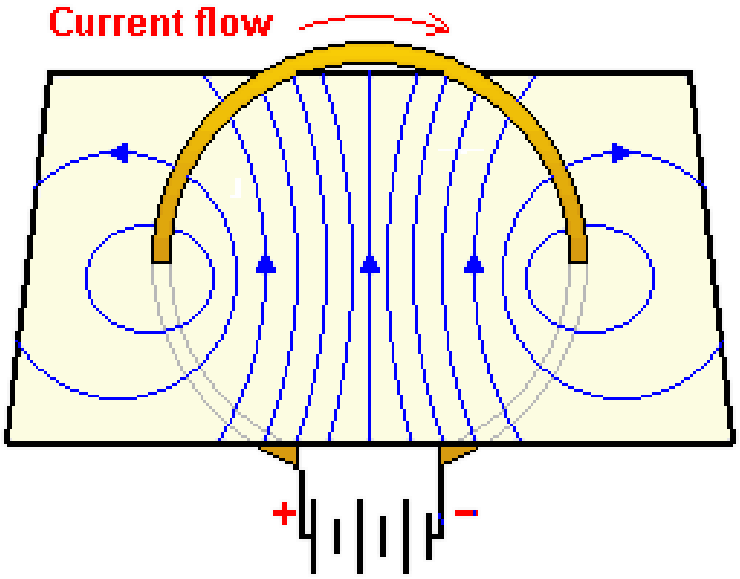
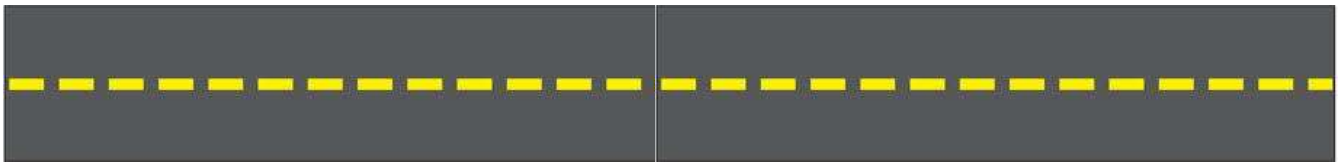
Electricity & Magnetism Unit



Name: _____

Follow this road map with your partner. Complete each stage of the directions in order.



TSW describe the interactions of like and unlike charges.

TSW compare and contrast parallel and series circuits.

TSW compare and contrast insulators and conductors.

1. Add vocabulary words to vocabulary folder:

(You can add pictures and definitions now or later.)

electric charge (p. 10)

conductor (p. 22)

insulator (p. 22)

electric current (p. 28)

circuit (p. 43)

resistor (p.44)

series circuit (p. 52)

parallel circuit (p. 53)

direct current DC (p. 97)

alternating current AC (p. 97)

volt (p. 19)

ohm (p. 23)

ampere (amp) (p. 29)

watt (p. 104)

kilowatt (p. 104)

magnet (p. 79)

magnetism (p. 80)

magnetic poles (p. 80)

magnetic field (p. 81)

2. Read about static on pages 11-13.

List ways that static can be built up by contact. (p. 11 – 12)

List ways that static can be built up by induction (no contact). (p. 13)

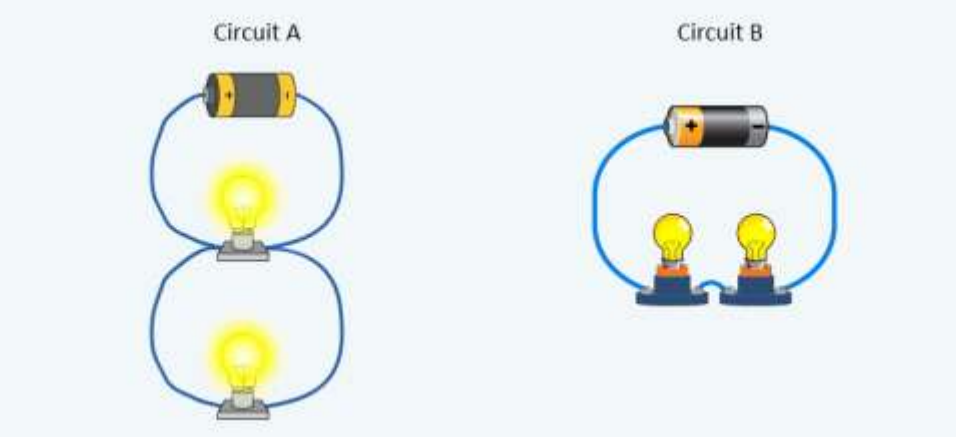
3. Read about conductors and insulators on page 22.

Give three examples of conductors.

Give three examples of insulators.

4. Read “Circuit Parts” on page 44 and “Circuit Diagrams” on page 45.

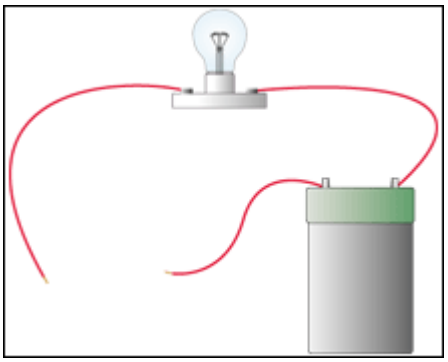
5. Build circuits A & B. List 3 observations below:



6. Create a cool working circuit. Diagram the circuit

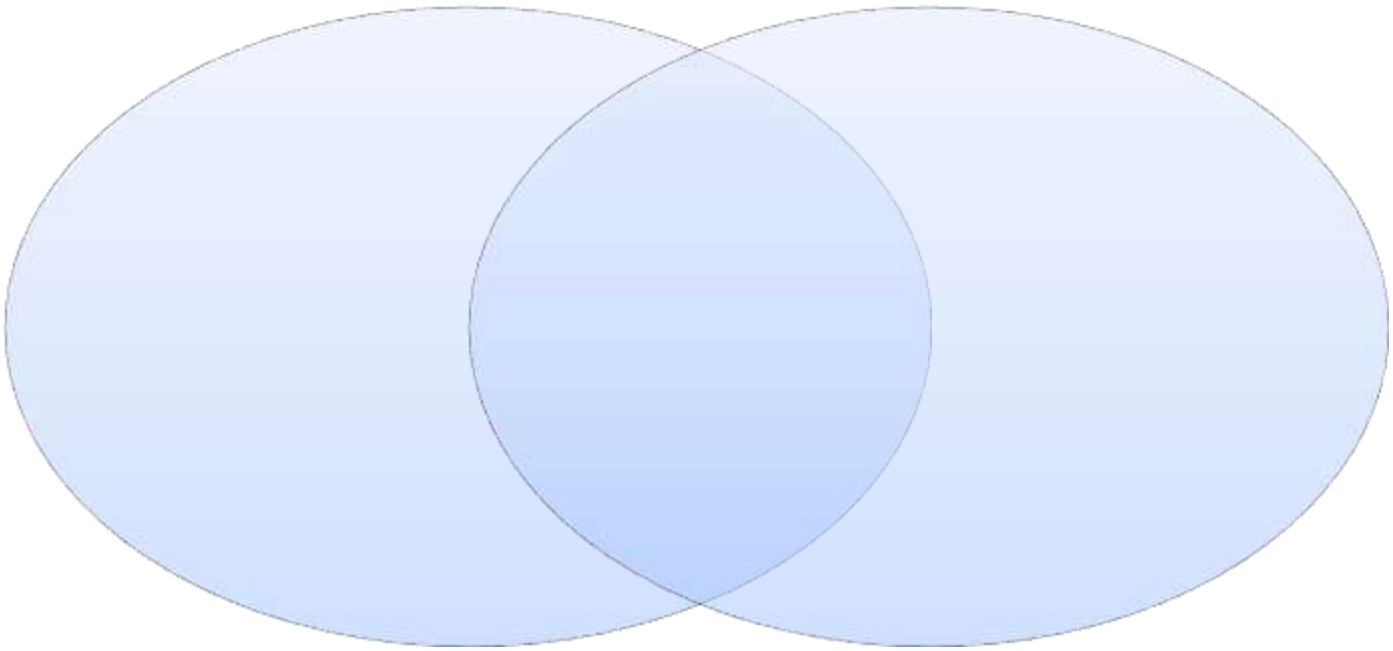
7. Insulator or Conductor?

Create the following circuit to determine whether objects are insulators or conductors. Three of the objects have been decided for you.



Object	Insulator or Conductor?
Penny	
Eraser	
Aluminum Foil	

8. Read Pages 97-98 and compare and contrast direct current and alternating current.



9. Measuring Electricity

Each term is used to describe electricity. Using 3 words or less, describe each word

Describing Word	
Volt (p. 19)	
Ohm (p. 23)	
Ampere (amp) (p. 29)	
Watt (p. 104)	
Kilowatt (p. 104)	

10. Read pages 79 – 81 about magnetism.

11. Five Extra Things

List what you saw in the book while you were covering the necessary topics. List the main idea and three details about the five things that caught your eye.

Main Idea • Detail • Detail • Detail	_____ • _____ • _____ • _____	_____ • _____ • _____ • _____
_____ • _____ • _____ • _____	_____ • _____ • _____ • _____	_____ • _____ • _____ • _____

Review Questions:

Answer the following review questions in your science notebook.

1. How do a positive and a negative particle interact? (L 1.1)

2. A sock and a shirt stick together. What does this tell you about the charges on the sock and shirt? (L 1.1)

3. What three factors affect how much electrical resistance an object has? (L 1.2)

4. Suppose you build a circuit for a class project. You are using a flat piece of wood for its base. Explain how you could make a switch out of a paper clip and two nails. (L 2.1)

5. Describe three electrical appliances that use circuits to convert electrical energy into other forms of energy. (L 2.2)

6. You walk past a string of lights around a window frame. Only two of the bulbs are burnt out. What can you tell about the string of lights? (L 2.2)

7. What force causes magnets to attract or repel one another? (L 3.1)

NEEDS:

Current vs. Static Electricity
Circuit Breaker