

Y7 Electricity Homework Grids

Name: _____

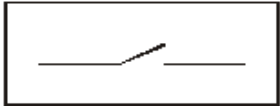
Science Teacher: _____

	Comment
Grid 1.1	
Grid 1.2	
Grid 1.3	
Grid 1.4	
Grid 1.5	
Grid 1.6	
Grid 1.7	
Grid 1.8	

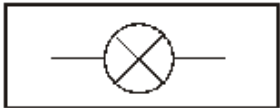
Grid 1.1: Use KO 34-36

Due: _____

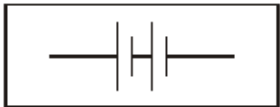
Draw a line from each circuit symbol below to the correct name.
Draw only four lines.



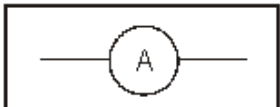
ammeter



switch



motor



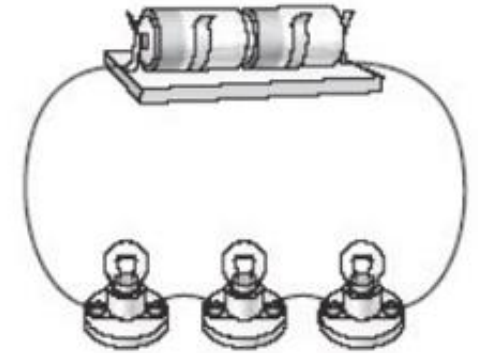
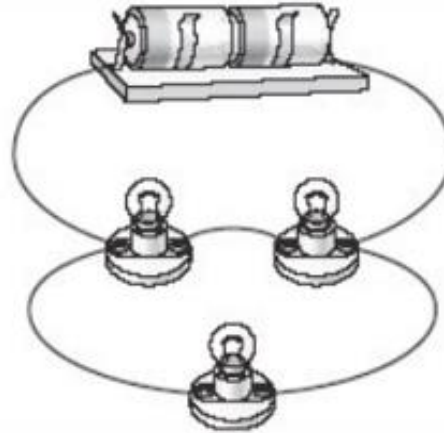
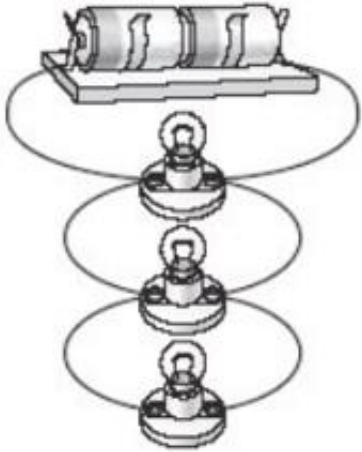
battery

bulb

Complete the table. The first one has been done for you

	Conductor	Insulator
steel fork	Y	
plastic comb		
wooden spoon		
aluminium foil		
Bamboo stick		

Using a pencil and a ruler, draw the circuit pictures into circuit diagrams.



Grid 1.3: Use KO 34-36

Due: _____

Using a pencil and a ruler, draw a series circuit using two identical cells, a bulb and a switch to turn the bulb on and off.

Which part of the circuit supplies the energy?

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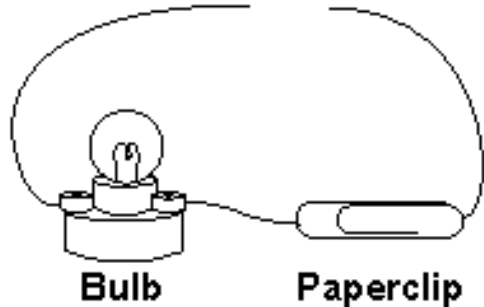
Another identical bulb is added to the circuit in series. How does the **brightness** of the first bulb change?

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This is Fran's circuit:

Name the **ONE** piece of equipment Fran **must** add to his circuit to see if the paperclip allows electricity to pass through



Fran can tell from her circuit that the paperclip allows electricity to pass through. What happens in Fran's circuit to show her that the paperclip allows electricity to pass through?

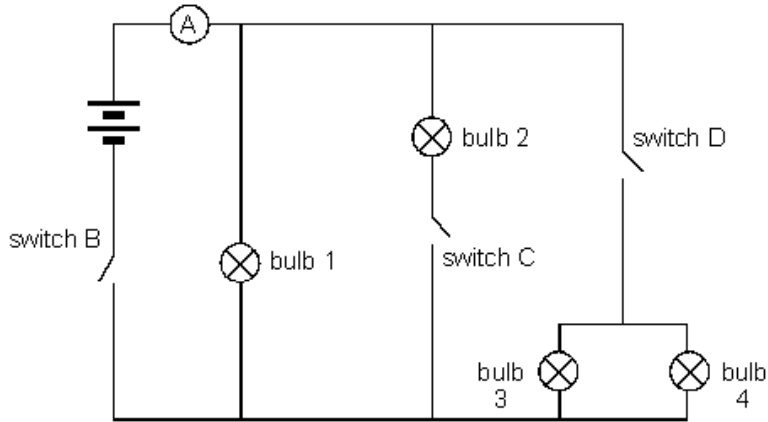
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Grid 1.4: Use KO 34-36

Due: _____

Steve and Kevin make a parallel circuit using four identical bulbs. Here is a diagram of their circuit

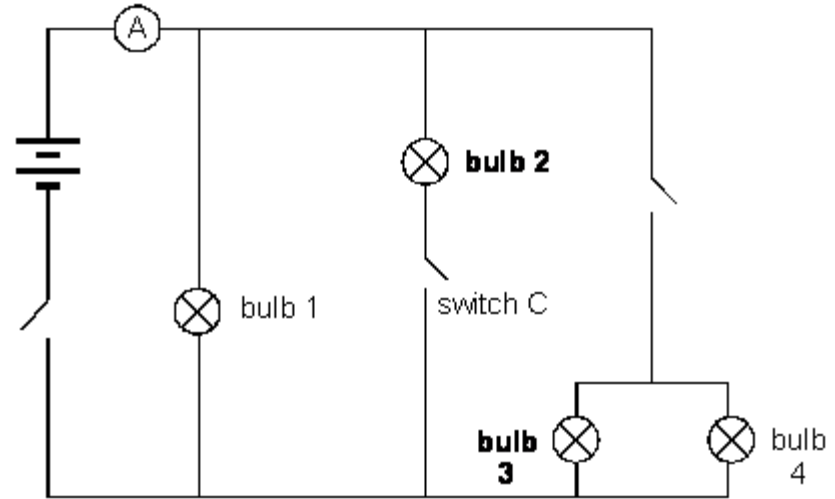


They close different switches.
 They make a table to show which bulbs light each time.
 Complete their table by writing **yes** or **no** in **each** box.

Write **Y** if the bulb **will** light.
 Write **N** if the bulb **will not** light.

Switches closed	Bulb 1	Bulb 2	Bulb 3	Bulb 4
B and C				
C and D				
B and D				

When all the switches are closed, the reading on ammeter A is four amps.



Steve and Kevin close all the switches. Compare the **size** of the current passing through bulb 2 with the **size** of the current passing through bulb 3.

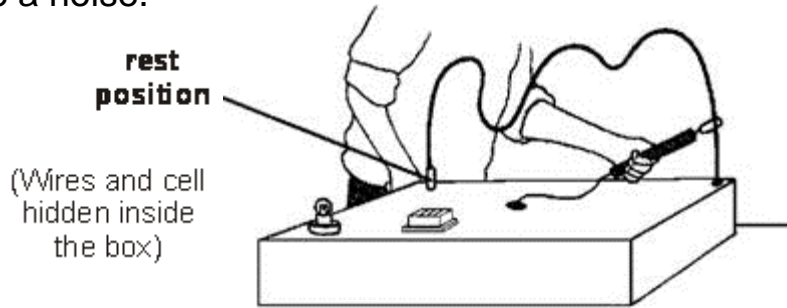
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Grid 1.5: Use KO 34-36

Due: _____

Dawn has made a game. In her game, she has to move a metal ring along a piece of thick wire until it reaches the rest position.

When she is moving it, the metal ring must not touch the wire. If it touches the wire, a bulb will light and a buzzer will make a noise.



The metal ring and the thick wire both let electricity through.

What is the scientific name for materials that let electricity through?

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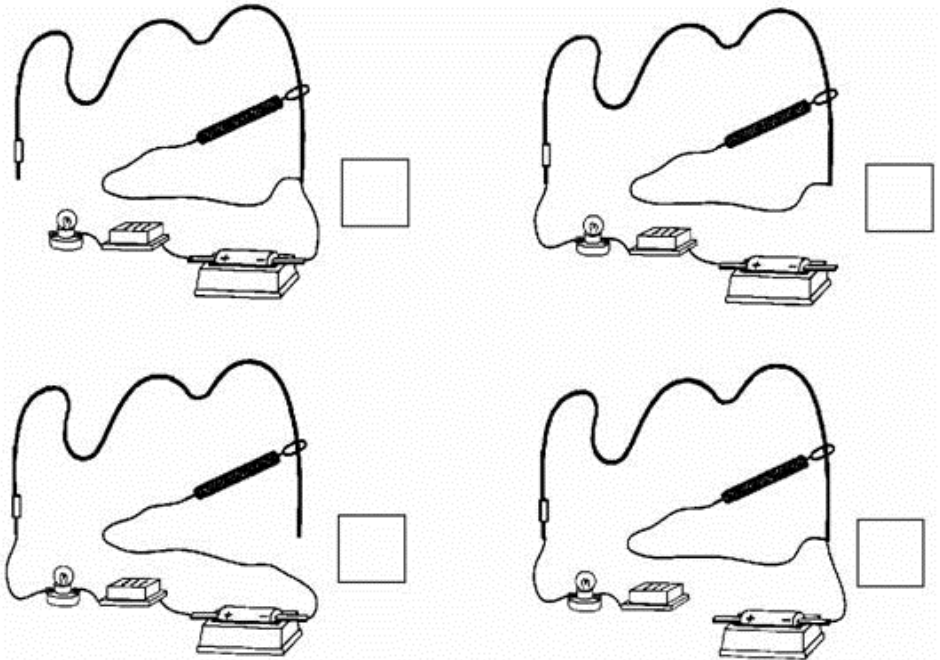
Dawn made the rest position by covering the wire with an insulating material. When she puts the metal ring down on the rest position, the bulb and buzzer cannot work.

State a material Dawn might have used to **insulate** the wire for the rest position?

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The bulb and buzzer will only work in Dawn's game when the metal ring touches the wire.

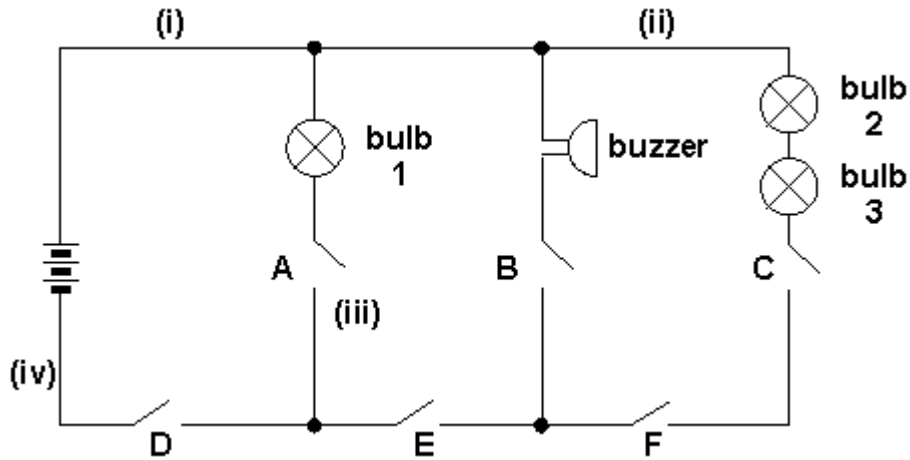
Tick **ONE** box to show which is the correct circuit for her game.



Grid 1.6: Use KO 34-36

Due: _____

Look at the circuit diagram to answer the questions.



Complete the table below by writing the letters of the switches that need to be closed to cause each effect. One has been done for you.

Effect	Switches closed
Only bulb 1 lit	D and A
Only the buzzer sounds	
Only bulbs 1,2 and 3 lit	

Bulbs 1, 2 and 3 are identical.

When all the switches in the circuit are closed, the bulbs light and the buzzer sounds.

Where would you put an ammeter in the circuit to measure the current passing through bulbs 2 and 3? Choose from positions (i), (ii), (iii) or (iv).

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Which of the following statements is true when switches A and D are closed and only bulb 1 is lit?

Pick the correct answer

- A. The electric current at (i) is greater than that at (iii) or (iv)
- B. The electric current at (iv) is greater than that at (i) or (iii)
- C. The electric current at (iv) is less than that at (i) or (iii)
- D. The electric current is the same at (i), (iii) and (iv)

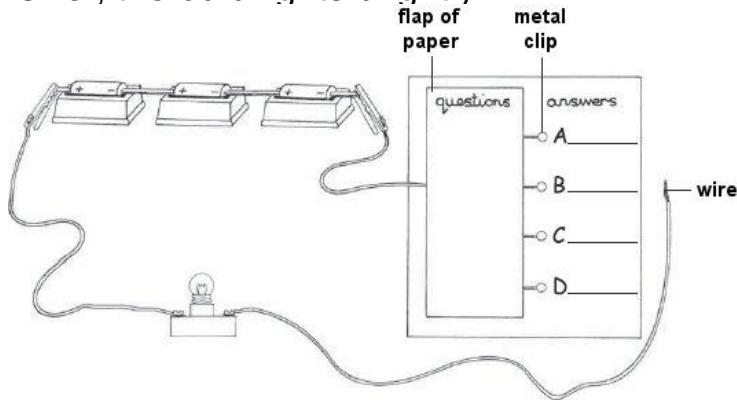
Grid 1.7: Use KO 34-36

Due: _____

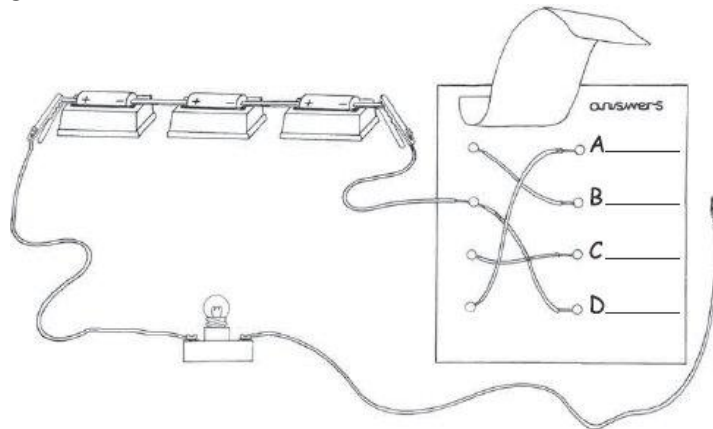
Keeley makes an electrical quiz board like the one below. She writes a question on the flap of paper. Then she writes four answers next to the letters A, B, C and D.

Only one answer is correct.

When the wire touches the metal clip next to the correct answer, the bulb lights brightly.



When she lifts the flap of paper, you can see how the circuit is made.



Which metal clip must Keeley touch with the wire to complete the circuit?

A B C D

Keeley removes one cell (battery) from her circuit.

How will taking one cell out of Keeley's circuit affect the bulb when it is lit?

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Keeley tries to improve the quiz board. She puts sticky tape over the metal clips A, B, C and D to keep them in place. She tests the quiz board. It does not work. Explain why the sticky tape stops Keeley's quiz board from working.

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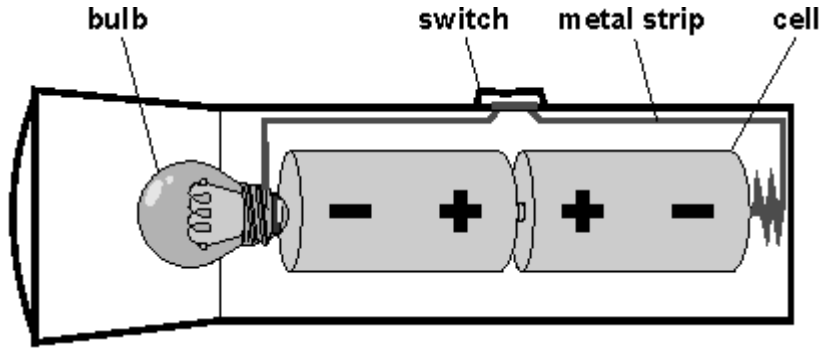
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Grid 1.8: Use KO 34-36

Due: _____

Alison's torch is not working.

The cells (batteries) inside the torch are like this:



Alison puts the cells back in a different way and the torch works.

Write + and - in the correct place in each cell below to show how Alison puts them back.

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Inside the torch, a metal strip connects the cells and bulb.

Describe **ONE property** of metal that makes it a good material to connect the cells and bulb.

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In the space below, using a pencil and a ruler, draw a **circuit diagram** of Alison's torch with the cells put in correctly.