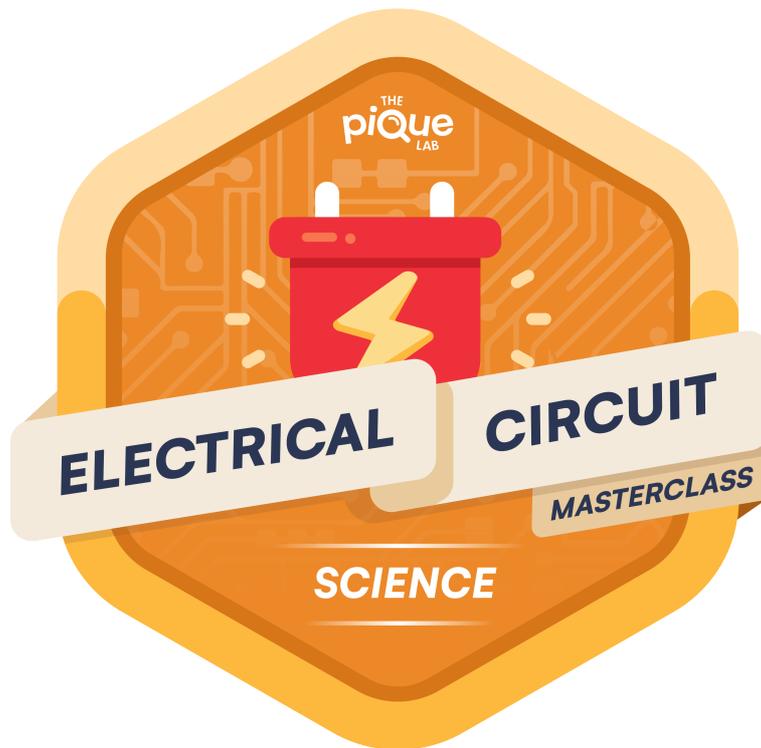




**THE PIQUE LAB LEARNING CENTRE**  
Primary School Science Programme



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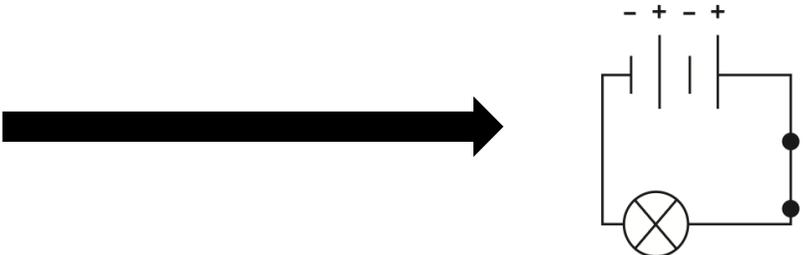
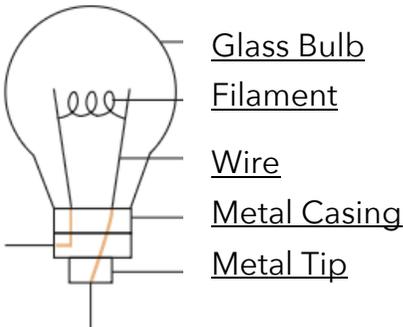
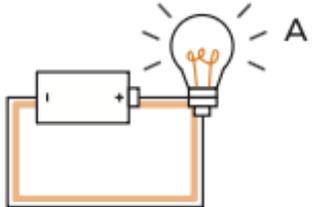
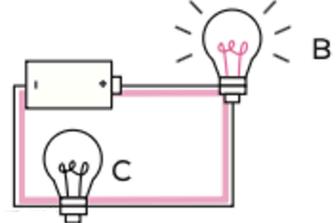
**ELECTRICAL CIRCUIT MASTERCLASS**

Answers to FITB Booklet

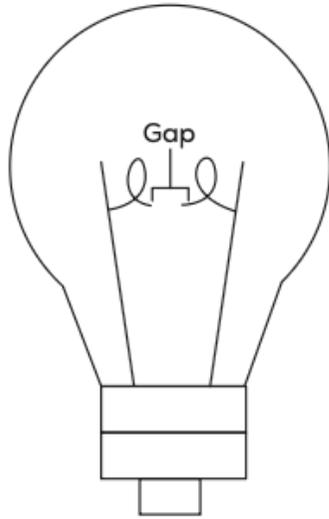
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Name: \_\_\_\_\_

Class: \_\_\_\_\_

INTRODUCTION		
		
<p><u>Chemical Potential Energy</u> ; <u>Electrical Energy</u> ; <u>Light Energy</u></p>		
	 <p style="text-align: center;"><u>electrical conductor</u></p>	 <p style="text-align: center;">can ; B ; allowing ; B ; light up</p>

FUSED BULB

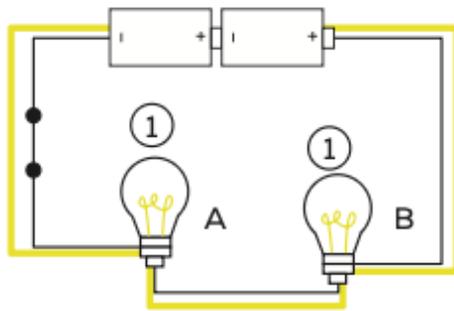


too much ; filament ; filament ; melt ; "gap" ; open circuit ; no electric current ; filament ; preventing ; lighting up

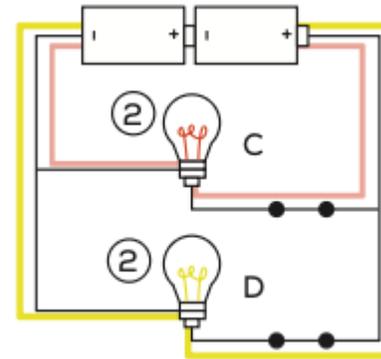
**BULBS IN SERIES**

**BULBS IN PARALLEL**

Two ; two ; per pathway



Total power used =  
 $1 + 1 = 2$

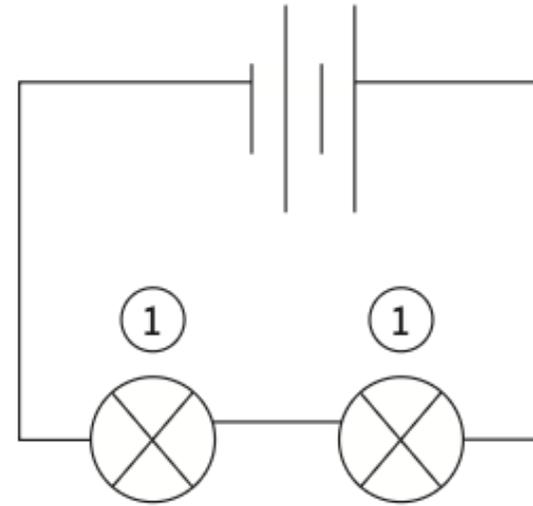
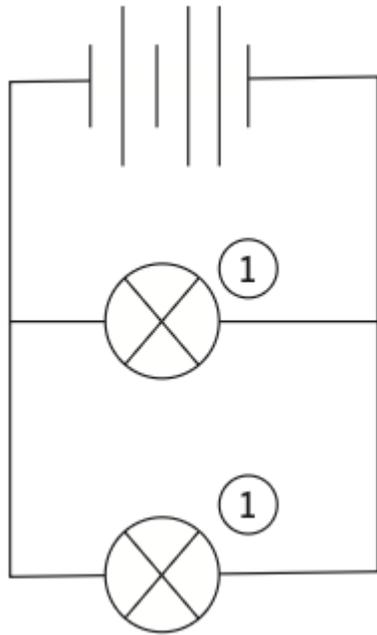


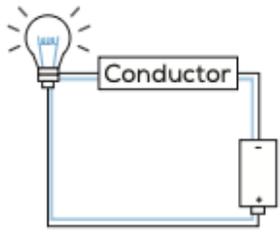
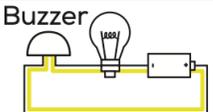
Total power used =  
 $2 + 2 = 4$

X dimmer  
 ✓ last longer  
 X controlled independently  
 X Bulb B ; open circuit ; Bulb A ; no electric current ; Bulb A ;  
 preventing bulb A from lighting up.

✓ brighter  
 X are used up faster  
 ✓ controlled independently  
 ✓ Bulb C ; closed circuit ; Bulb D ; electric current ; Bulb D ;  
 allowing bulb D to light up

**BONUS QUESTION**



ELECTRICAL CONDUCTORS	ELECTRICAL INSULATORS
<p style="text-align: center;"><u>allow</u></p>  <ul style="list-style-type: none"> <li>• <u>Metals</u> → <u>Aluminium, Copper, Iron, Mercury</u></li> <li>• <u>Non-metals</u> → <u>Salt solution, Tap Water, Pencil lead</u></li> </ul>	<p style="text-align: center;"><u>do not allow</u></p> <ul style="list-style-type: none"> <li>• <u>non-metals</u> → <u>Rubber, Wood, Plastic, Pure Water</u></li> <li>* <u>poor electrical conductors</u></li> </ul>
 <p>Step 1: <u>When the metal casing of the bulb, which is an electrical conductor, is connected to the circuit,</u></p> <p>Step 2: <u>there would be a closed circuit with the buzzer.</u></p> <p>Step 3: <u>Thus, electric current would be able to flow through the buzzer,</u></p> <p>Step 4: <u>allowing the buzzer to ring.</u></p>	<p>Step 1: <u>When wood, which is an electrical insulator, is connected to the circuit,</u></p> <p>Step 2: <u>there would be an open circuit with the buzzer.</u></p> <p>Step 3: <u>Thus, no electric current would be able to flow through the buzzer,</u></p> <p>Step 4: <u>preventing the buzzer from ringing.</u></p>

CIRCUIT TESTER AND CIRCUIT CARDS

