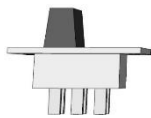


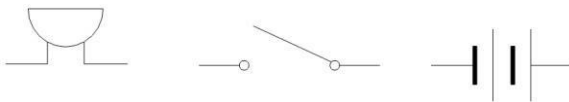
# Build-a-House Worksheet

Name: .....

Label these electrical parts (components) used in your doorbell and lighting circuits: buzzer, push-to-make switch, bulb and bulb holder, slide switch, battery holder and cell, crocodile lead.



Draw your doorbell circuit using these circuit symbols and using lines to represent the wires. Label the components.



Draw your lighting circuit using these circuit symbols and using lines to represent the wires. Label the components.

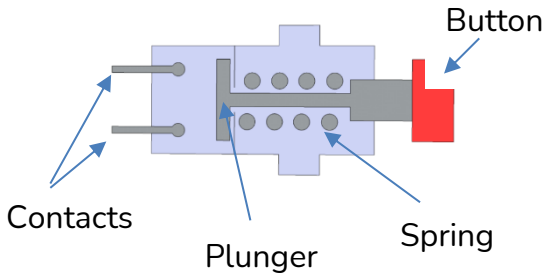


Why did you need to attach the crocodile clips onto bare metal, not onto plastic insulation?

What will happen if you leave the circuit switched on for a long time?

Does it matter which way round you connect your buzzer?	
Does it matter which way round you connect your bulb?	
Suggest a problem with using a push-to-make switch for a lighting circuit.	
Suggest a problem with using a slide switch for a doorbell circuit.	
Your battery only gives 1.5 Volts, whilst mains electricity used to wire a real (UK) house uses 240 Volts. Suggest some hazards of mains electricity.	

**Extension questions**

<p>Explain how a push-to-make switch works.</p> 	
Suggest some reasons why houses in cold climates usually have sloping roofs.	
What enables a pipe cleaner to retain its shape when you bend it?	

# Suggested Answers

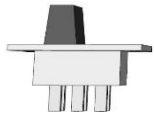
Label these electrical parts (components) used in your doorbell and lighting circuits: buzzer, push-to-make switch, bulb and bulb holder, slide switch, battery holder and cell, crocodile lead.



Crocodile lead



Battery holder and cell



Slide switch



Push-to-make switch

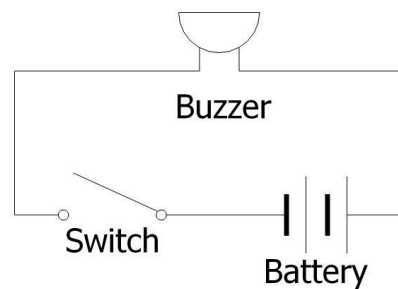
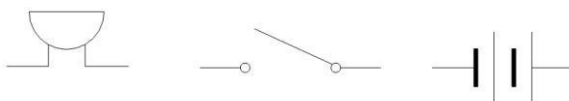


Buzzer

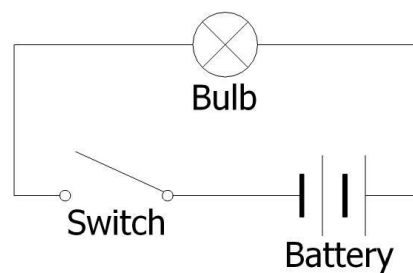


Bulb and bulb holder

Draw your doorbell circuit using these circuit symbols and using lines to represent the wires. Label the components.



Draw your lighting circuit using these circuit symbols and using lines to represent the wires. Label the components.



Why did you need to attach the crocodile clips onto bare metal, not onto plastic insulation?

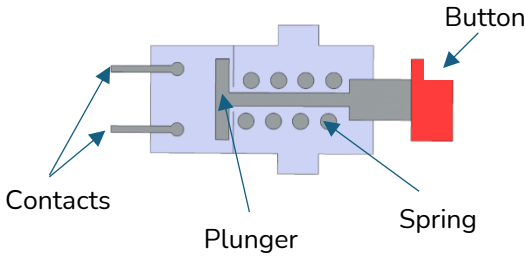
**Plastic is an insulator which prevents the current from passing. The bare metal ends are good conductors of electricity, so if you clip onto these the current can pass through.**

What will happen if you leave the circuit switched on for a long time?

**You will drain the battery.**

Does it matter which way round you connect your buzzer?	Yes
Does it matter which way round you connect your bulb?	No
Suggest a problem with using a push-to-make switch for a lighting circuit.	If you use a push-to-make switch for a lighting circuit then as soon as you take your finger off the switch the light will go out.
Suggest a problem with using a slide switch for a doorbell circuit.	If you use a slide switch for a doorbell then the person ringing the bell might just switch it on and leave it ringing, which would be really annoying!
Your battery only gives 1.5 Volts, whilst mains electricity used to wire a real (UK) house uses 240 Volts. Suggest some hazards of mains electricity.	Some hazards of mans electricity include: Electric shocks Electrocution Electrical Fires

### Extension questions

<p>Explain how a push-to-make switch works.</p> 	<p>When you press the button, the plunger moves down and bridges the two contacts, completing the circuit. When you release the button, the spring pushes the plunger back up, so the two contacts are no longer connected, creating a gap in the circuit.</p>
<p>Suggest some reasons why houses in cold climates usually have sloping roofs.</p>	<p>Houses in many countries have sloping roofs, as it helps the rain to run off.</p> <p>In cold countries it is particularly important to have a sloping roof to help the snow slide off. A big build-up of snow is very heavy and can damage the roof.</p> <p>Many houses in hot, dry countries have flat roofs.</p>
<p>What enables a pipe cleaner to retain its shape when you bend it?</p>	<p>The metal (steel) core of the pipe cleaner is malleable, allowing the pipe cleaner to be bent easily and then retain its new shape.</p>