

Technology and Design Department

**AQA**

**Design and Technology:**

**Resistant Materials Technology**

**Unit 1: Systems and Control  
Communication Techniques**



10 (b) (i) Name a mechanism that is used on the buggy.

.....

*(1 mark)*

10 (b) (ii) Draw a labelled diagram of the mechanism you named in 10(b)(i) above.

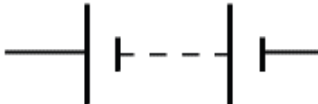



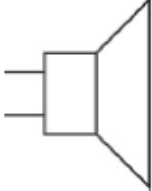
*(4 marks)*



Question 10 is about electrical systems.

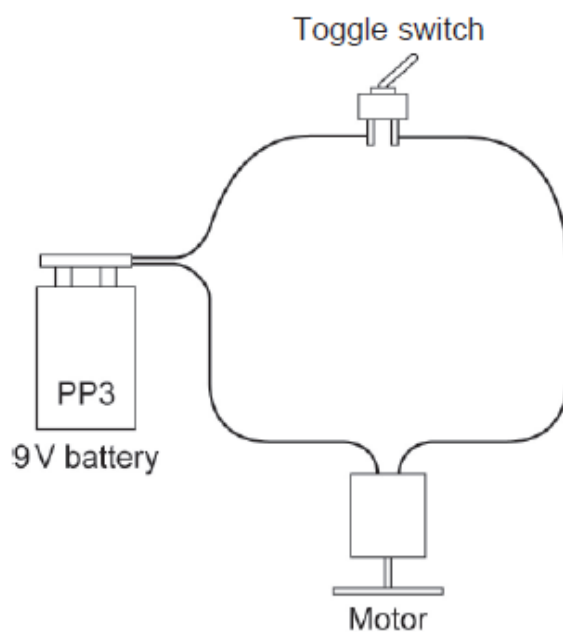
You are advised to spend about 15 minutes on this question.

10 (a) (i) Complete the table shown below. The first one has been done for you.

Component	Schematic symbol	Function
Battery		<p><i>It provides power to the circuit</i></p>
Switch		<p>.....</p> <p>.....</p> <p>.....</p> <p style="text-align: right;"><i>(1 mark)</i></p>
Lamp		<p>.....</p> <p>.....</p> <p>.....</p> <p style="text-align: right;"><i>(1 mark)</i></p>
Motor		<p>.....</p> <p>.....</p> <p>.....</p> <p style="text-align: right;"><i>(1 mark)</i></p>
<p>.....</p> <p style="text-align: right;"><i>(1 mark)</i></p>		<p><i>It converts electrical energy into sound</i></p>

10 (a) (ii) Draw a schematic drawing of the electrical circuit shown below.

Label all the components.



(4 marks)

10 (b) (i) Give **two** reasons why copper wire is used to connect electrical components.

Reason 1 .....  
(1 mark)

Reason 2 .....  
(1 mark)

10 (b) (ii) Name the material that is used to cover the copper wire. Explain why this material has been used.

Material .....  
(1 mark)

Explanation .....  
(1 mark)

10 (c) The process of soldering can be a dangerous activity.


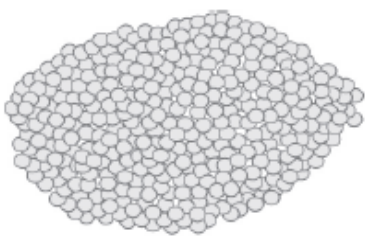


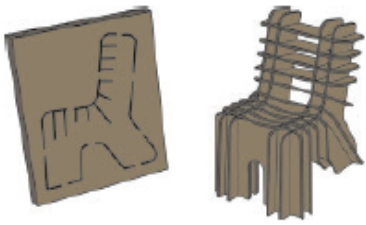
Complete the table shown below.

Health and safety issue	Hazard	Precaution
The tip of the soldering iron gets hot.	..... ..... ..... (1 mark)	..... ..... ..... (1 mark)
Soldering gives off fumes.	..... ..... ..... (1 mark)	..... ..... ..... (1 mark)

Question 7 is about modelling.

You are advised to spend about 20 minutes on this question.

7 (a) Complete the table shown below. Give **two** modelling properties.

Name of Material	Modelling properties	Image
<p>[1 mark]</p> <p>.....</p>	<p>Easy to cut with scissors.</p> <p>Easy to fold into a 3D object.</p>	
<p>Polymorph (Polycaprolactone)</p>	<p>[2 marks]</p> <p>.....</p> <p>.....</p>	
<p>Construction kits</p>	<p>[2 marks]</p> <p>.....</p> <p>.....</p>	
<p>Balsa</p>	<p>[2 marks]</p> <p>.....</p> <p>.....</p>	
<p>[1 mark]</p> <p>.....</p>	<p>[2 marks]</p> <p>.....</p> <p>.....</p>	

7 (b) Explain why designers make models of their ideas during the design process.

**[4 marks]**

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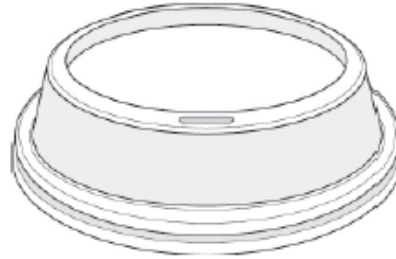


Question 8 is about quality control, planning and making.

You are advised to spend about 10 minutes on this question.

- 8 Use the next page to produce a flow chart describing the process of vacuum forming the coffee cup lid shown below.

[10 marks]



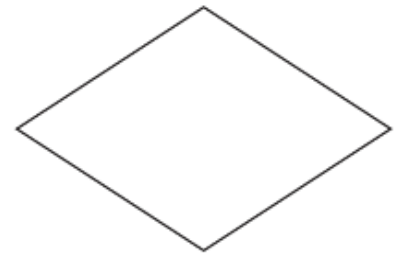
Include the following symbols at the relevant stages.

**Flow Arrow**

**Terminator**

**Process**

**Decision**



You may wish to use this space to plan your answer.

