



Aston Comprehensive School
Design and Technology Department

Keyboard Project

Extended Learning Tasks
2010

My name is: _____

My teacher's name is: _____

My technology group is: _____

My target level is: _____

Final Assessment

Level achieved: _____

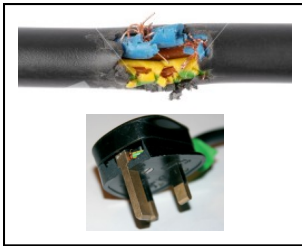
Effort (EGSP): _____

Behaviour for learning (1,2,3,4): _____

STUDENT'S
PHOTO

Name: _____

Before we start any practical work it is really important that we know how to work safely and responsibly. Answer the following questions:



Describe what you should do if you spot this on a soldering iron:
.....
.....
.....
.....



Explain why you should always put your bag under your desk:
.....
.....
.....
.....



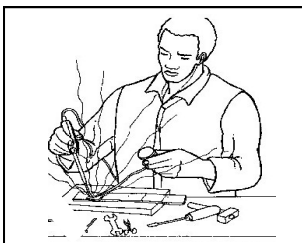
Why shouldn't you run in the workshop or classroom?
.....
.....
.....
.....



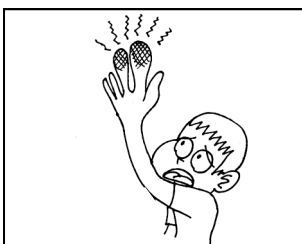
Explain why you must not keep water or drinks on your desk when working:
.....
.....
.....
.....



Explain why should always put the soldering iron back in the stand:
.....
.....
.....
.....



Explain why you shouldn't melt more solder than is necessary:
.....
.....
.....
.....



What should you do if you burn or cut yourself when working?
.....
.....
.....
.....

E 😊 G 😊 S 😞 P 😞

Level: _____

Comment: _____

Name: _____

1. What should you do if you burn yourself with a soldering iron?

2. Why shouldn't you put solder in your mouth?

3. Name two reasons why you shouldn't melt plastic bags and other materials with your soldering iron.

4. Why shouldn't you melt large amounts of solder (into a ball for example), or work in a poorly ventilated room?

5. Approximately, how hot does a soldering iron tip need to get to melt the solder? Underline the correct answer:

- A: 100°C
- B: 200°C
- C: 300°C

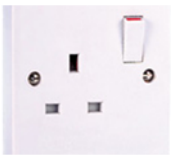
6. When you have finished soldering a joint, why should you place the soldering iron back into the stand?

7. Why should bags be placed away from the work area?

8. Why should you not have drinks on the desk when soldering or using other electrical equipment?

9. Why should you take care when soldering not to accidentally burn the Soldering Iron's cable?

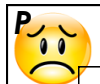
10. Why should you place your bag under the desk or on the hooks at the back of the classroom?



Star Question



You may have noticed different coloured fire extinguishers in buildings. The red ones contain water and cannot be used on electrical fires. Black fire extinguishers can be used, what do they contain?

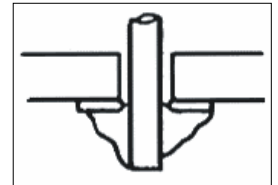
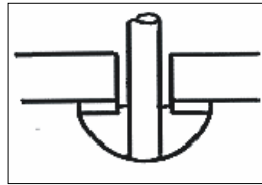


Level:

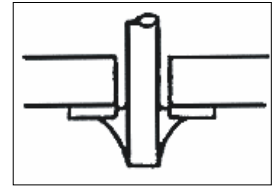
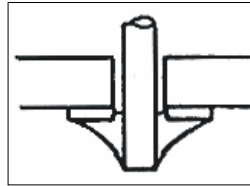
Comment:

Name: _____

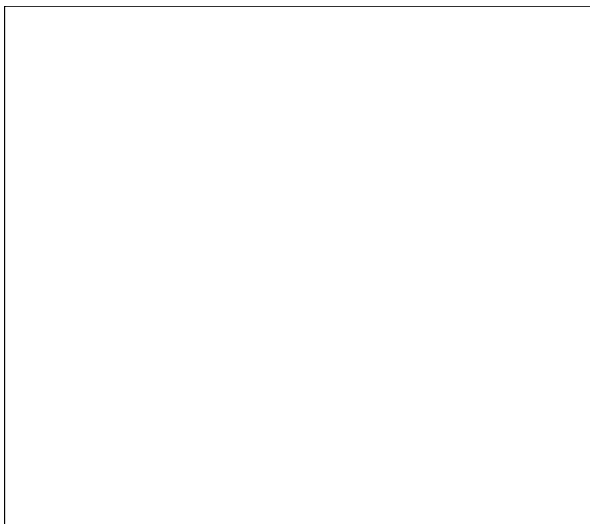
The diagrams on the right show four different components that have been soldered onto a circuit board. One of these is perfect but the others are not.



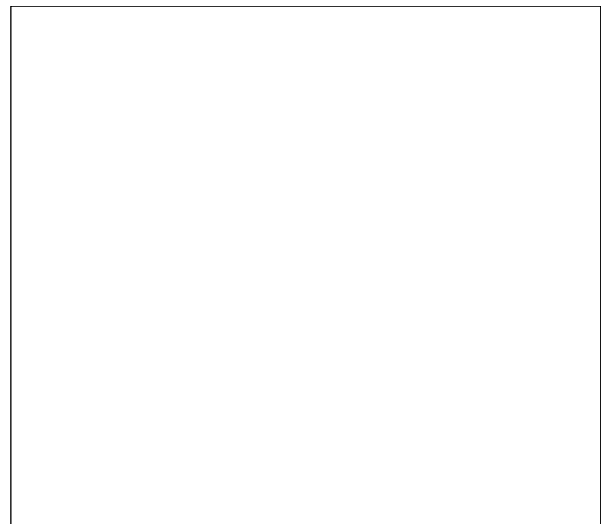
Use these examples to help you complete the diagrams below:



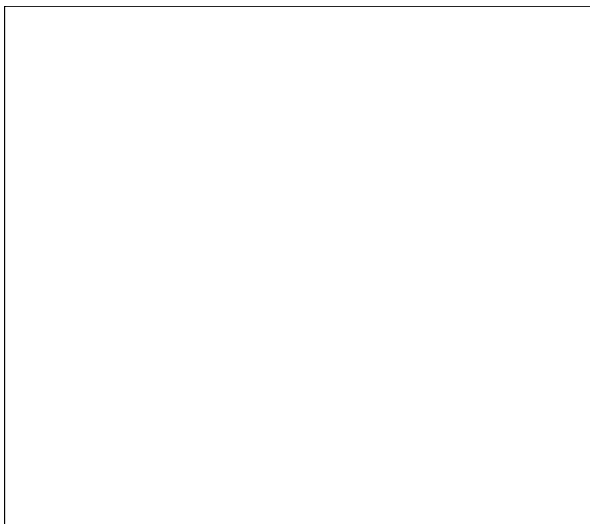
This diagram shows what a perfect soldered joint should look like:



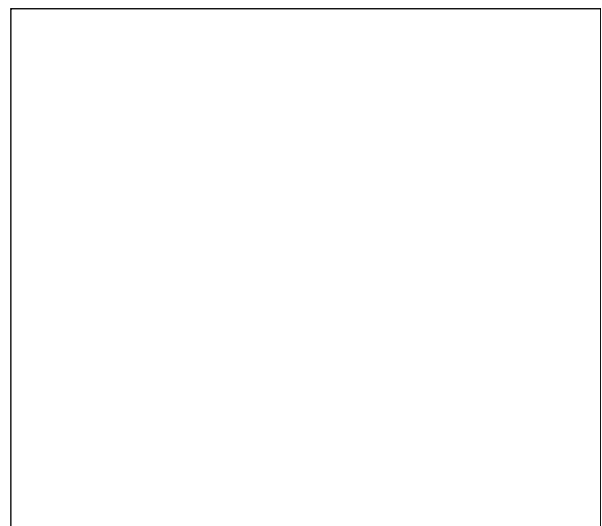
This diagram shows what happens when you put too much solder on:



This diagram shows what happens when the joint is dirty:



This diagram shows what a soldered joint looks like when too little solder is put on:

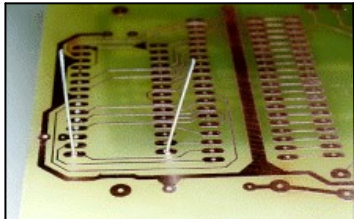


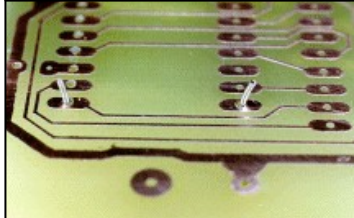
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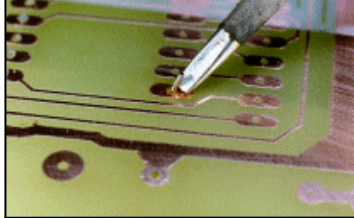
Name: _____

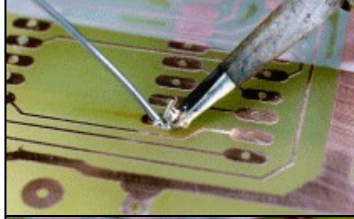
The photographs shown below demonstrate how a component is soldered into a circuit board. In the spaces provided explain what you do at each stage:

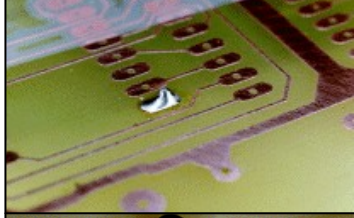














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Comment: _____

Name: _____

Remembering Resistor Colour Codes

ELT 3

Write a rhyme or phrase to help you remember the resistor colour codes—Don't be rude!!!

BLACK
BROWN
RED
ORANGE
YELLOW
GREEN
BLUE
VIOLET
GREY
WHITE

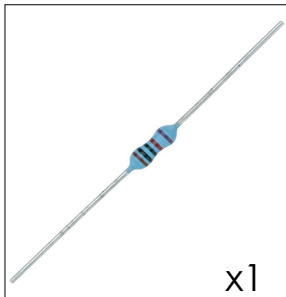
Resistors and capacitors & other components

ELT 4

Identify these components:



Name:



Name:



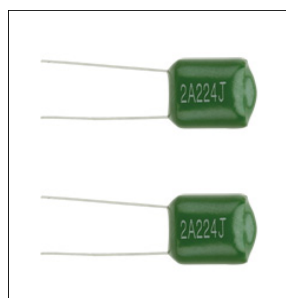
Name:



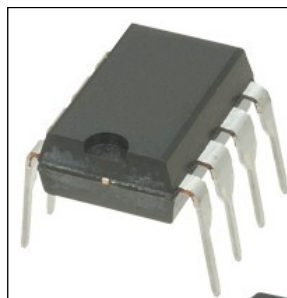
Name:



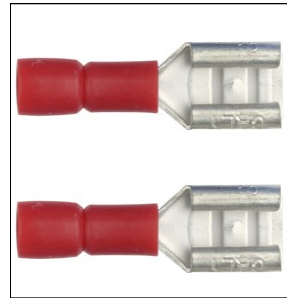
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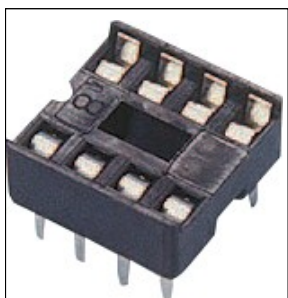
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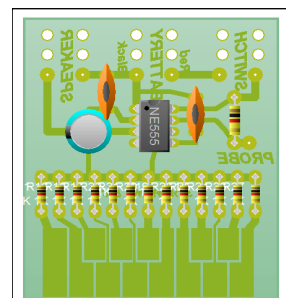
Name:



Name:



Name:



Name:

What is the difference between a polarised and non-polarised component? Give some examples:

E 😊	G 😊	S 😊	P 😞
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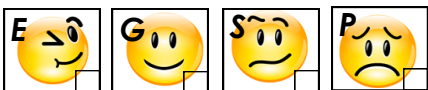
Level: _____ Comment: _____

Name: _____

Using the resources you have been given find out :

1. What CAD stands for and what CAM stands for
2. Describe what you have used CAD for
3. Describe what you have used CAM for
4. Describe the advantages and disadvantages of using CAD CAM
5. Describe how you have used CAD and CAM in your project. You could add diagrams and pictures.

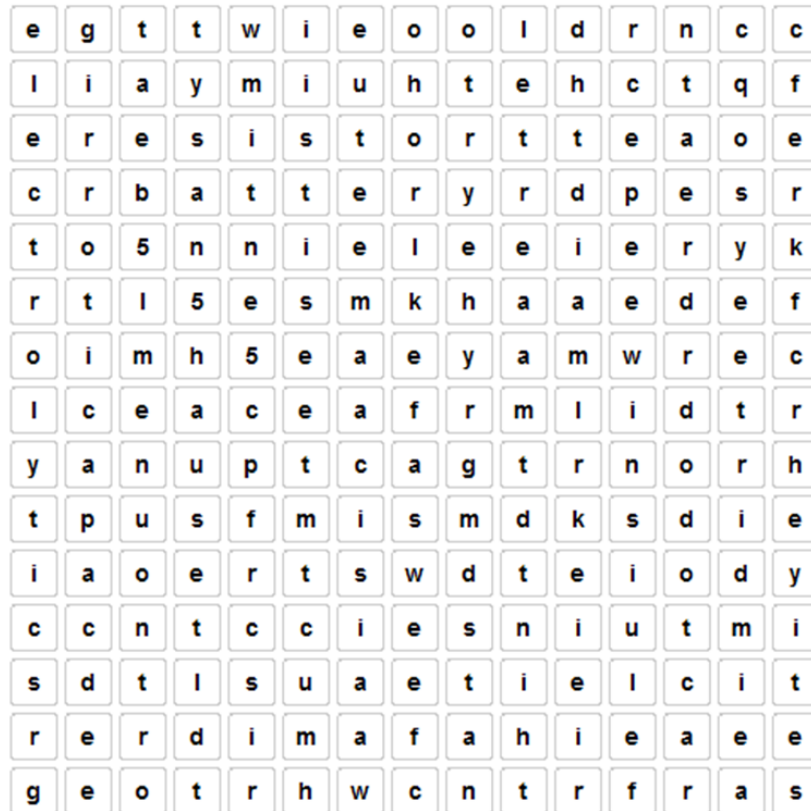
A large rectangular area with horizontal lines for writing.



Level:

Comment:

Try and find the words for the following questions



1. A component that limits the amount of current flowing through a circuit and sets the note of a particular key in your project.
2. A component that stores electricity for a short amount of time.
3. A component that can control whether a circuit is on or off.
4. This device powers the circuit.
5. This is a component that is at the heart of the circuit and has eight legs on it.
6. The proper name for a chip socket
7. The component that produces the sound



Star Question

Some components need to be connected the right way around or the circuit won't work properly, these are called polarised components. Can you name the three components in your project that must be connected the right way around?



Level:

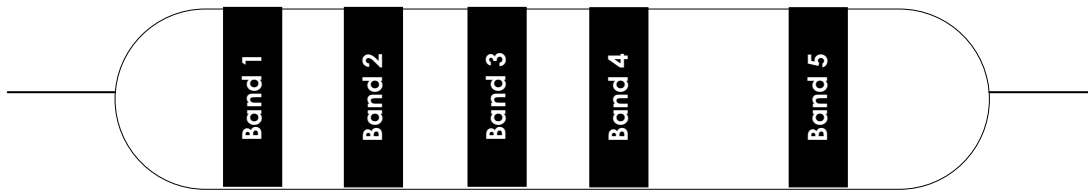
Comment:

Name: _____

Colour Codes

ELT 7a

Use the colour code below to work out what colours each resistor should be and complete the table:



	BAND 1	BAND 2	BAND 3	BAND 4 Multiplier	BAND 5 Tolerance
BLACK	0	0	0	-	
BROWN	1	1	1	0	+/- 1%
RED	2	2	2	00	+/- 2%
ORANGE	3	3	3	000	
YELLOW	4	4	4	000,0	
GREEN	5	5	5	000,00	+/- 0.5%
BLUE	6	6	6	000,000	+/- 0.25%
VIOLET	7	7	7	-	+/- 0.1%
GREY	8	8	8	-	+/- 0.05%
WHITE	9	9	9	-	

Note	Resistor Number	Value (Ohms)	Band 1 Colour	Band 2 Colour	Band 3 Colour	Band 4 Colour	Band 5 Colour
C	1	8060					Violet
C#	2	7870					Violet
D	3	7500					Violet
D#	4	6190					Violet
E	5	5900					Violet
F	6	5620					Violet
F#	7	5110					Violet
G	8	4750					Violet
G#	9	4220					Violet
A	10	3920					Violet
A#	11	3740					Violet
B	12	3480					Violet
C	13	3240					Violet
	14	12,000	Brown	Red	Orange	Gold	

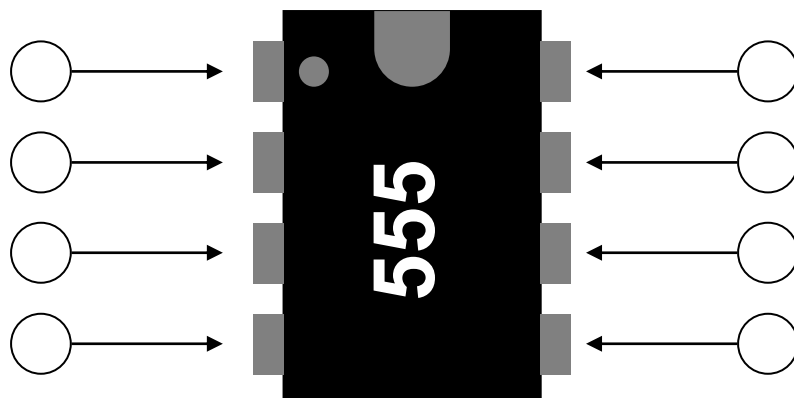
				Level:	Comment:
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Name: _____

This is all about the chip that is in our circuit. See if you can answer the questions:

1. What is the name of the chip in our circuit? _____
2. What does the chip do? _____
3. What is the proper name for a chip? _____
4. Why do we use a chip socket? _____
5. What is the proper name for a chip socket? _____
6. Does it matter which way around a chip is connected? _____
7. What is connected to the output of the chip so you can hear the note?

The chip in our circuit has eight pins. Each of these pins is given a number so we know which way to put it into our circuit. See if you can number the pins.








Level:

Comment:

Name: _____

The table shows five of the components in our project. Name the components and try to explain what they do. If you can, use the electronics VLE on the year drive to see if you can find the circuit diagram symbols.

	Name: _____ What it does: _____	Circuit Symbol
	Name: _____ What it does: _____	Circuit Symbol
	Name: _____ What it does: _____	Circuit Symbol
	Name: _____ What it does: _____	Circuit Symbol
	Name: _____ What it does: _____	Circuit Symbol



Level:

Comment: