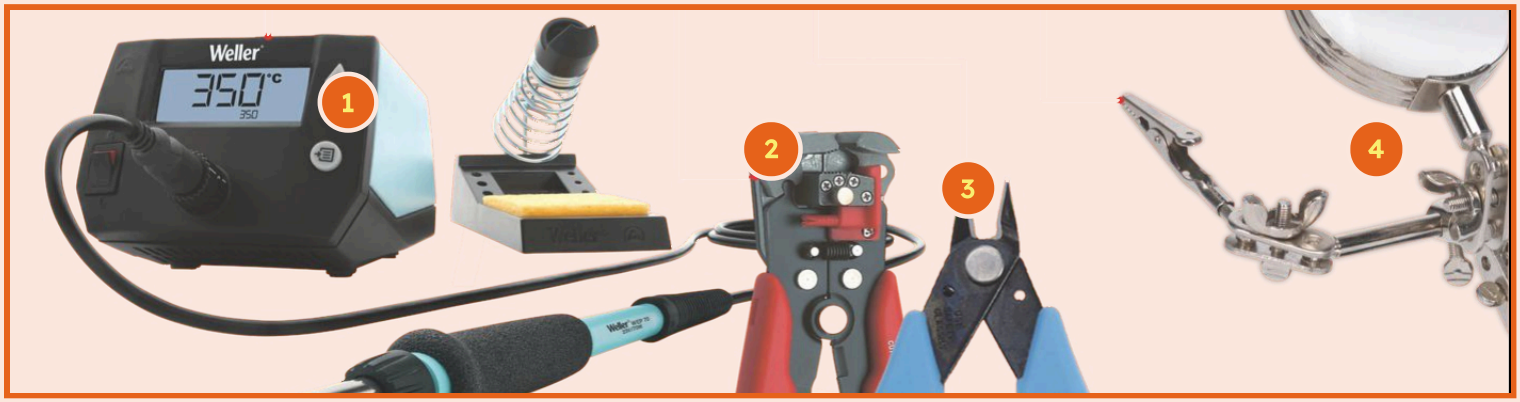
NAME _____ CLASS _____

TOOLS OF THE TRADE

To build your torch you will use specialist electronics tools. Using the right tool makes the job safer, quicker and neater.

Look carefully at the picture. You saw all of these tools in the torch guide.



1 Name each tool and describe what it is used for. 8 marks

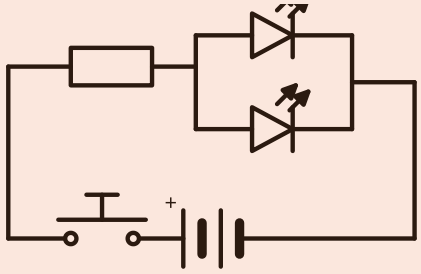
	NAME OF TOOL	WHAT IT IS USED FOR
1		
2		
3		
4		

SOLDERING SAFETY

2 Each pupil below is doing something unsafe. Explain the danger and what they should do instead. 8 marks

WHAT THE PUPIL DOES	DANGER AND CORRECT ACTION
Jo's iron falls off the bench, so Jo tries to catch it.	
Ali holds the component in place with his fingers while soldering.	
Sam isn't wearing eye protection.	
Kim leaves the iron lying on the bench to cool.	

BUILDING THE CIRCUIT



The torch circuit

3 Name the four types of component in the torch circuit. 4 marks

4 Put these build steps in the correct order (1–8). 8 marks

- ☐ Solder the resistor to the board.
- ☐ Bend the LED legs to 90° with needle-nosed pliers.
- ☐ Check the circuit with your teacher before connecting the battery.
- ☐ Fit the LED with the **longer leg** to the outside of the board.
- ☐ Trim the excess LED legs with end snips.
- ☐ Solder the LED legs to the copper tracks.
- ☐ Break the copper track between the legs of the resistor.
- ☐ Solder the red and black wires to the board.

5 An LED only works one way round. How can you tell which leg is the positive one (the **anode**)? 2 marks

6 When Lewis presses his switch, nothing happens. Suggest **three** possible faults and how to check each one. 6 marks

POSSIBLE FAULT	HOW TO CHECK OR FIX IT