Hand Steady Game - Knowledge Organiser

PCB (Printed Circuit Board):

-A board made of glass-reinforced plastic with copper tracks that form a circuit by linking components together.

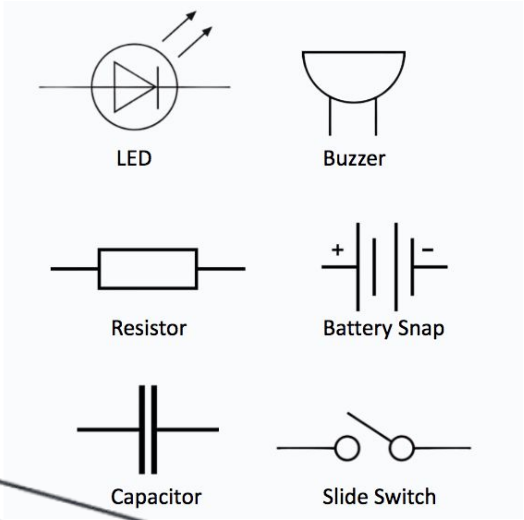
-Components are soldered to the PCB after drilling holes for placement.

Manufacturing Steps:

1. **Drawing & Preparing the Circuit**: Use symbols for each component, including LEDs, resistors, capacitors, and more.
2. **PCB Manufacture**: Transfer the design onto a copper board, use an etch-resistant pen, and etch the design.
3. **Soldering Components**: Attach each electronic component to the board and solder it in place.

Key Definitions:

- **Ohm's Law**: Defines the relationship between voltage, current, and resistance (V = I x R).
- **Resistance Color Codes**: Determine the value of resistors based on the colored bands (e.g., Yellow, Violet, Brown = 470Ω).



Electronic Components:

- **LED (Light Emitting Diode)**: Produces light (red, green, yellow, orange). Must be connected the correct way round to allow current to flow.
- **Resistor**: Limits the current in the circuit. Resistance is measured in Ohms (Ω) and determined by the colored bands.
- **Capacitor**: Stores and releases electrical charge. Can smooth current or work with a resistor to create timers.
- **Buzzer**: Produces sound when the circuit is completed. Used for alerts.
- **Battery Snap**: Connects the 9V battery to the circuit, supplying power. The red wire is positive, and the black wire is negative.
- **Slide Switch**: Controls the flow of electricity by moving between on and off positions.

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