Video project name

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| **Shot** | **Audio (what talent says)** | **Visual (on the screen)** |
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Check the storyboard template in action below:

Video 0: Introduction to the 6 experiments

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| **Shot** | **Audio** | **Visual (on the screen)** |
|  |  | TITLE Slide:* Project name goes here
* Harpreet’s title
 |
| 1 | Over the coming weeks you will undertake 6 experiments. These will help you to gain a better grasp of electrical circuit concepts.The laboratory notes are of a “fill-in-the’-blanks” format, and each student needs to submit their work to their demonstrator at the end of the laboratory session.The first 4 experiments will give you experience in constructing DC circuits, and as many of the same type of components will be used each well it’s best to look at these here. | Head to Camera |
| 2 | Power supplyThese supply the energy required in the circuit. Plug-in supplies or batteries will be used, and many of the following comments about batteries apply to those connected to the mains. | Head to Camera |
|  | Batteries - * the terminals are marked as + {point} and – {point} it is essential that you recognize these.
* As batteries go flat, do not leave batteries connected to a circuit for more time than is necessary. This is why a switch is often provided.
* Remember that conventional current flows out of the positive terminal {point}.

Never connect a wire direct from the positive to the negative – this creates a “short circuit”! If this happens a large current can flow, and if allowed to persist will “flatten” the battery. | Video/still image of batteries and power supplies |
| 3 | Resistor – these restrict the flow of electricity and can be fixed or variable, and packaged in various ways. | Video/still image of resistors with title and highlights |
| 4 | Voltmeter These provide a measurement of the difference in electrical potential between two different points in a circuit.* Each voltmeter terminal, + and –, needs to be connected to one of these different points.
* The expected polarity of the two measurement points needs to be noted, so that the meter is connected with the + terminal connected to the point of higher potential.
* This last point is vital if an analogue meter is used incorrect wiring will cause the needle to move backwards!
* Not all voltmeters are labeled the same, so always check.
 | Video/still image of Voltmeter |
| 5 | Ammeter These provide a measurement of current* An ammeter needs to be inserted into the circuit at the point of interest, as we need to know the current flowing in a particular section of circuit.
* As for voltmeters the expected polarity needs to be noted, so that the meter is connected with the + terminal connected to the point of higher potential.
 | Video/still image of Ammeter |
| 6 | MultimeterA multimeter is a voltmeter and ammeter (and more) constructed as a single instrument. It can be used for only one measurement at any one time.* You need to select the required function, and then include it in the circuit, as appropriate for the desired type of measurement.
* Most multimeters have a terminal labelled “COM”, standing for “common”, and this is the negative terminal.
* Labels on the multimeter need to be read carefully so that the appropriate positive terminal is selected.
 | Video/still image of Multimeter |
| 7 | Note that many voltmeters and ammeters have more than one range:* when measuring an unknown voltage or current, always try with the largest range first and work down to a smaller range if feasible.
* be sure that you use the most appropriate range for your final measurement.
 | Head to camera - Harpreet |
| 8 | Whilst most meters nowadays are digital, you will also encounter some analogue meters. For analogue meters it is important that you interpolate between the scale markings when making your readings. Ideally you should be able to read to within one-tenth of a division. For the analogue multimeters used in some experiments care must be exercised to ensure that the correct scale is read for the specific reading being made. In this case the rotary dial points to the allowed full-scale-deflections. | Head to camera - Harpreet |
| 9 | Wiring Circuits* The best way to wire-up a circuit is loop-by-loop.
* It is helpful to try to arrange your circuit components on your bench so that the layout looks as close as possible to the actual circuit diagram.
* It may be useful to label the + and - terminal on each component on the circuit diagram, as appropriate.
* The wires in use have convenient plugs (banana plugs). Please handle wires using these plugs. Never pull on the actual wire.
* Start at a convenient point (like the positive terminal of the battery) and work your way around the circuit diagram component by component until you have completed a loop back to your starting point.
* If the circuit has more than one loop, complete the entire next loop next.
* Make sure that every person in your group gets practice at wiring up circuits.
 | Video/still image of Wiring Circuits |
| 10 | Finally, in terms of occupational health & safety, there are no significant risks with conducting these experiments. | Head to camera - Harpreet |