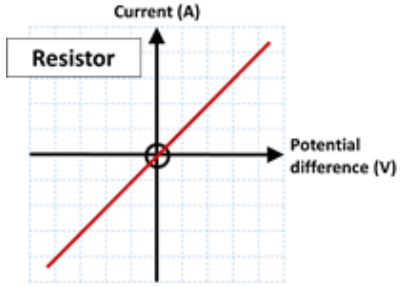
Electrical circuits

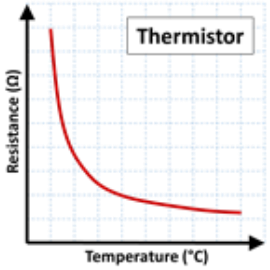
Ohm's Law

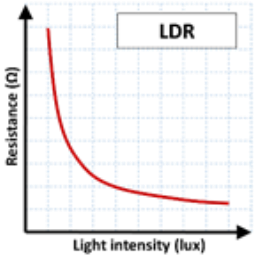
23. Ohm's Law states that the current through a conductor between two points is **directly proportional** to the voltage across the two points.
24. **Directly proportional** means that as one value increases, another value increases at the same rate.
25. 

26. Resistance in an ohmic component is one that follows Ohm's Law; a straight line is always produced on a graph.

IV graphs of different components

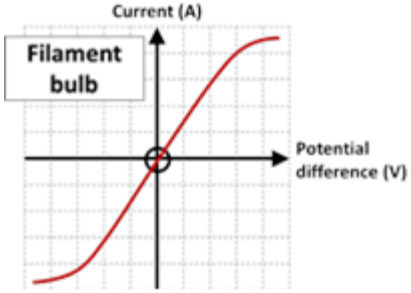
34. A thermistor is a temperature-dependent resistor, its resistance decreases if its temperature increases. This makes it useful in heat detector fire alarms as current flows at high temperatures.

35. 

34. 

36. An LDR is a light-dependent resistor, its resistance decreases if the light intensity on it increases. This is useful in safe alarms as the current flows when light increases (when the safe is opened).

Resistance in non-ohmic devices

27. A non-ohmic component is one where the current is not directly proportional to the potential difference.
28. A filament lamp's resistance increases if the filament's temperature increases. This reduces the amount of current flowing and creates a curve on the graph.
29. 

30. A diode only lets current flow in one direction, called the forward direction.
31. In the forward direction resistance is low so the current can flow.
32. In the reverse direction, the current is virtually zero and resistance is high.
33.