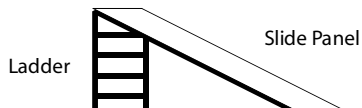


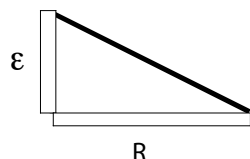
PhyzGuide: Simple Circuits

SLIDER CIRCUIT

Picture



Schematic



CONFIGURATION • One ladder, one slide panel.

ELEVATION • The elevation is “provided” by the ladder.

RUN LENGTH • The run length is the slide’s horizontal distance.

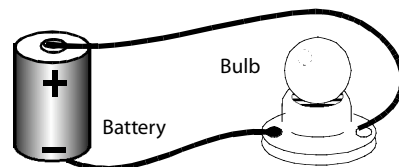
INCLINE (FLOW RATE) • Incline of the slide panel is determined by the relation: $I = \epsilon/R$ (incline = elevation / run length).

BUN-BURNING • The bun-burning factor is determined by $BB = I\epsilon$ (bun-burning = flow rate x drop distance; drop distance is equal to elevation).

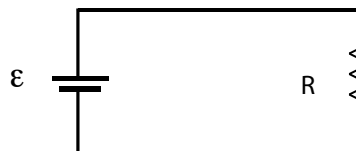
NOTICE • A rider drops through the full elevation as he or she traverses the single slide panel. In other words, the rider loses all of his or her potential energy while sliding down one panel.

ELECTRIC CIRCUIT

Picture



Schematic



CONFIGURATION • One battery, one resistor.

EMF • Electric potential (voltage) is provided by the battery.

RESISTANCE • Resistance is due to the device in the circuit; in this case the light bulb.

CURRENT • Current in the circuit is determined by the relation: $I = \epsilon/R$ (current = battery emf / resistance).

POWER • Power dissipation in the circuit is determined by $P = I\epsilon$ (power = current x voltage drop across the resistor; voltage drop in this case is equal to the battery’s emf).

NOTICE • An electron “falls” through the full potential difference of the battery as it travels through the single resistor (bulb). In other words, each electron delivers all its energy to one bulb.