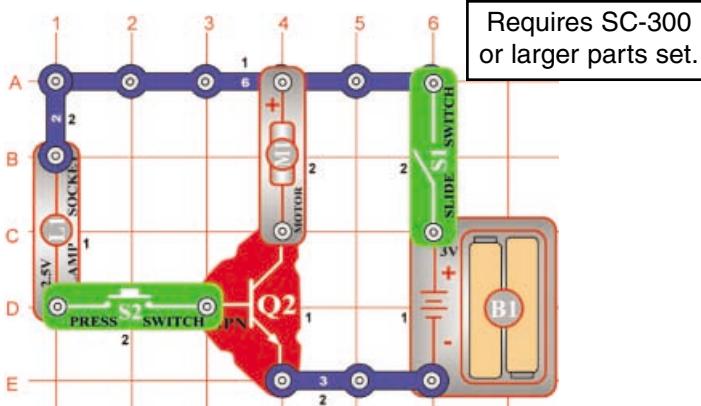


Project #A4 The Transistor

OBJECTIVE: To compare transistor circuits.

Place the fan on the motor and turn on the slide switch (S1) - nothing happens. Push the press switch (S2), the lamp lights and the motor spins.

The NPN transistor (Q2) uses the lamp current to control the motor current. A small current through the lamp branch creates a large current through the motor branch. They combine in the transistor and leave through the 3-snap branch.

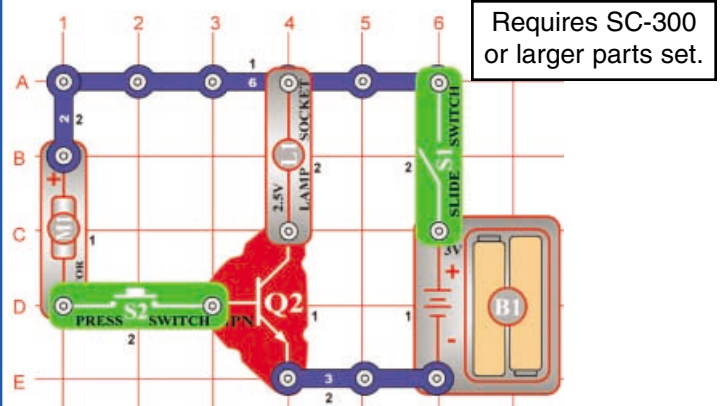


Project #A5 The Transistor (II)

OBJECTIVE: To compare transistor circuits.

Compare this circuit to project #A4. It works the same way, but the lamp is brighter here and the motor is slower.

This time the NPN transistor (Q2) uses the motor current to control the lamp current. A current through the motor branch creates a larger current through the lamp branch. They combine in the transistor and leave through the 3-snap branch.

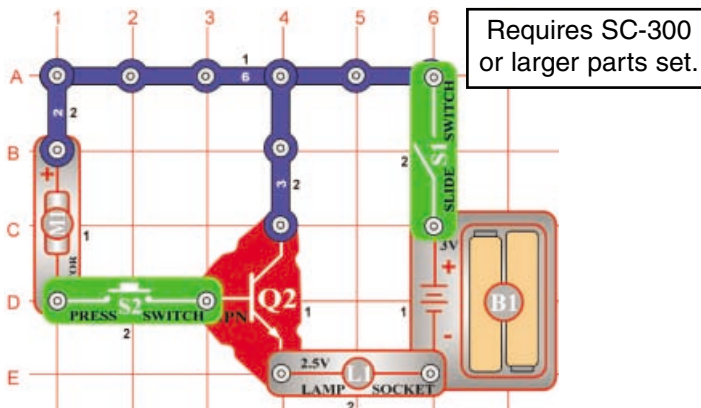


Project #A6 The Transistor (III)

OBJECTIVE: To compare transistor circuits.

Compare this circuit to project #A5. It works in a similar way, but the motor does not spin even though the lamp is bright. But the lamp is not as bright here as in project #A2.

The currents in the motor branch and 3-snap branch are combined into the lamp branch. Since the 3-snap has no resistance, the current through its branch will be much larger than the motor branch current.



Project #A7 The Transistor (IV)

OBJECTIVE: To compare transistor circuits.

Compare this circuit to project #A6. It works in a similar way, the lamp is off but the motor spins. But the motor does not spin as fast as in project #A4.

The currents in the lamp branch and 3-snap branch are combined into the motor branch. Since the 3-snap has no resistance, the current through its branch will be much larger than the lamp branch current.

