

# Brain Box

## Amazing ways to learn Electronics!

### KEYS LEARNING OBJECTIVES

- Enhance knowledge, promote creativity and provides entertainment.
- Design for children of all ages. (Different brain box kits for different ages)
- Consists of several user-friendly components which when snap together could create a huge number of different circuits on the base board.
- Safe to experiment, simple to operate and fun to play with.

There are 188 ways of experimenting to produce fascinating effects in electronics.

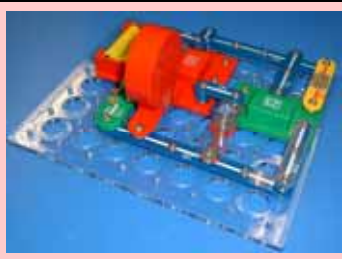


Kit 188



## KEY BENEFITS

- All wires are safely attached behind the components, and thus the Kit is entirely safe to handle.
- All components have snap fastener for easy and quick assemble.
- Provides practical hands-on experience through assembling of circuits, thus faster understanding of the principles as compared to reading from books;
- Provides entertainment such as superior direct visual, sound and touch effects;
- Enhances creativity by using imagination to design circuits.



Touch Activated Sound Effects and Lamp



Water Activated Doorbell



Magnetically Activated Sound and Motor



Sound Activated Doorbell

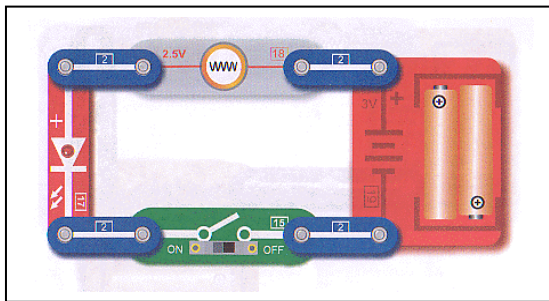


Music and Lamp



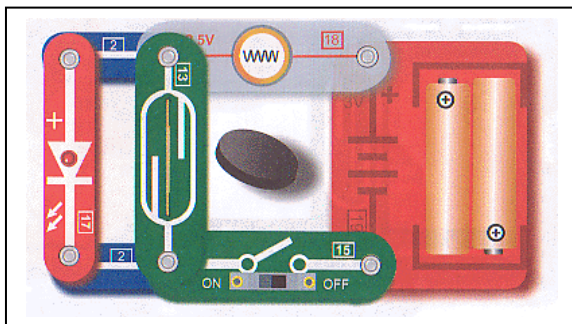
Electric Fan

# Illustrations



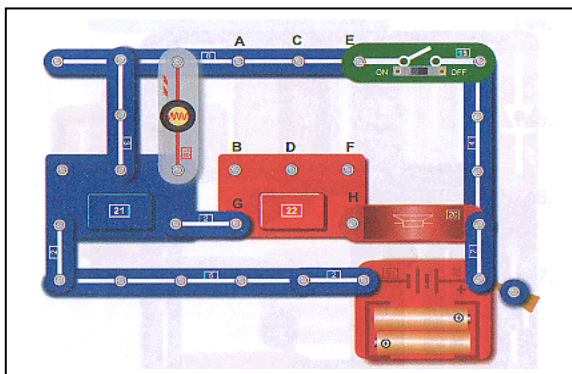
## Glowing LED (Light Emitting Diode)

A diode is a unidirectional semiconductor. An LED emits light when a current passes through it. Assemble as illustrated. Turn on the slide switch (15). The LED (17) glows brightly while the 2.5V lamp (18) either remains dark or glows faintly. This is because the LED requires a smaller amount of current (1-10mA) than does the lamp (300mA).



## Reed Relay Circuit

The reed relay (13) is a magnetically controlled switch. Assemble as illustrated. Turn on the slide switch (15). The LED (17) glows brightly while the lamp (18) either remains dark or glows faintly. Bring the magnet close to the reed relay (13). The lamp (18) glows brightly while the LED (17) goes out. Because it is a semi-conductor, the LED has greater resistance than the closed reed relay. The current takes the easier route, by-passing the LED.



## Light Activated Light Machine Gun Sound

Assemble as illustrated. Connect points CD and FH using a 3-snap connector (3), a 2-snap connector (2) and a 1-snap connector (1). Turn on the slide switch (15). Expose the photo sensor (16) to light after the sound has stopped. The sound begins again. If the light is blocked, the sound stops.

There are many experimental examples of circuit boards which when activated by magnet, water, light, touch or sound will produce different kinds of reactions, such as flashing bulb, motorized fan, flying disc and various sound effects.