

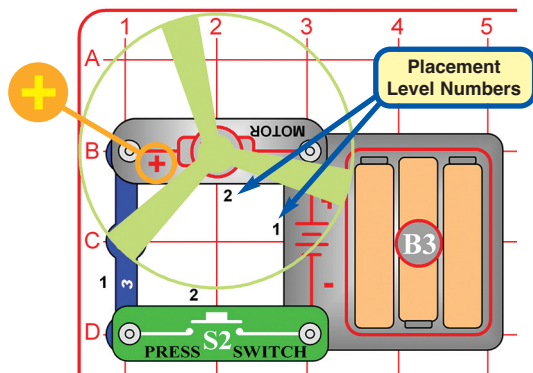
WARNING: Always check your wiring before turning on a circuit. Never leave a circuit unattended while the batteries are installed. Never connect additional batteries or any other power sources to your circuits.

Flying Saucer Plus

Model SCP-09



WARNING: SHOCK HAZARD -
Never connect Snap Circuits® to the electrical outlets in your home in any way!



Project 1 Flying Saucer



WARNING: Moving parts. Do not touch the motor or fan during operation. Do not lean over the motor. Fan may not rise until switch is released. Do not launch fan at people, animals, or objects. Eye protection is recommended.

Snap Circuits® uses electronic blocks that snap onto a base grid to build different circuits. These blocks have different colors and numbers on them so that you can easily identify them. Build the circuit shown by placing all the parts with a black 1 next to them on the clear base grid first. Then, assemble parts marked with a 2. Install three (3) “AA” batteries (not included) into the battery holder (B3). Place the glow fan on the motor (M1).

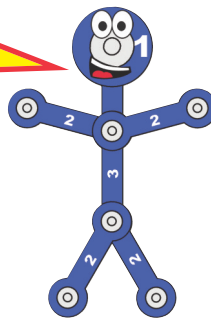
When you press the press switch (S2), the motor will slowly increase in speed. When the motor has reached maximum rotation, release the press switch. The fan should rise and float through the air like a flying saucer. Be careful not to look directly down on the fan while it is spinning.

The glow fan will glow in the dark. It will glow best after absorbing sunlight for a while. The glow fan is made of plastic, so be careful not to let it get hot enough to melt. The glow looks best in a dimly lit room.

In this project, the air is being blown down through the blade and the motor rotation locks the fan on the shaft. When the motor is turned off, the blade unlocks from the shaft and is free to act as a propeller and fly through the air. If the speed of rotation is too slow, the fan will remain on the motor shaft because it does not have enough lift to propel it. The motor will spin faster when the batteries are new.

The motor converts electricity into mechanical motion. Electricity is closely related to magnetism, and an electric current flowing in a wire has a magnetic field similar to that of a very, very tiny magnet. Inside the motor is are three coils of wire with many loops. If a large electric current flows through the loops, the magnetic effects become concentrated enough to move the coils. The motor has a magnet inside so, as the electricity moves the coils to align them with the permanent magnet, the shaft spins.

The battery voltage is like electrical pressure, pushing electricity through the circuit.



Project 2 Fan

Rebuild the circuit from project #1, but reverse the polarity on the motor so the positive (+) on the motor goes to the positive (+) on the battery holder (B3). Place the fan on the motor and press the press switch (S2). Current flows from the batteries through the motor (M1), making it spin the fan. The fan blows air up and away from the motor, just like an electric fan in your home. The fan will not fly off.

Project 3 Hypnotic Pattern

Rebuild the circuit from project #1, but reverse the polarity on the motor (M1) so the positive (+) on the motor goes to the positive (+) on the battery holder (B3).

Cut out the printed pattern from the cardboard along the dotted line with scissors and tape it to the fan blade. Spin the pattern by briefly pressing the press switch (S2). You will see the most interesting effects when the pattern is spinning slowly.

Project 4 Spin Draw

Use the circuit from project #3. Using the fan as a guide, draw a circle on a piece of cardboard or paper. Cut the circle out with scissors and tape it to the fan blade so it can be easily removed later (you may remove the red spiral pattern first). Obtain some thin and thick marking pens to use as drawing tools.

Spin the paper by pressing and holding the press switch (S2) down. Gently press the marker on the paper to form rings. To make spiral drawings, release the press switch and as the motor approaches a slow speed, move the marker from the inside outward quickly.

Change the colors often and avoid using too much black to get hypnotic effects. Another method is to make colorful shapes on the disc then spin the disc and watch them blend into each other.

If you have any problems, contact Elenco®

Project 5 Strobe the House Lights

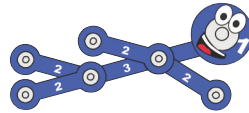
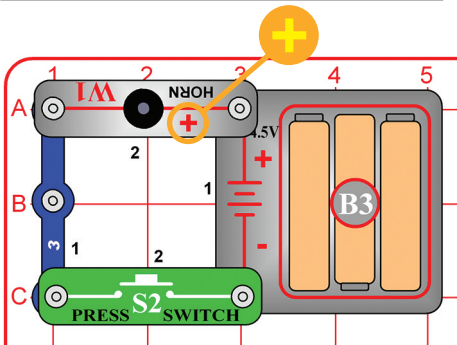
You need an old fluorescent light for this project. Use the circuit from project #4. Using a blank cutout, draw several straight lines from the edges through the center, evenly spaced like spokes on a bicycle wheel. Place the cutout on the fan and place atop the motor.

Place the circuit under a fluorescent light in your home and spin the disc slowly. As the speed changes, you may notice the lines first seem to move in one direction, then they start moving in another direction. This effect is because the lights are blinking 120 times a second and the changing speed of the motor is acting like a strobe light to catch the motion at certain speeds. This project won't work with most new fluorescent lights, because they use an electronic ballast that produces a constant light.

Project 6 Horn

Push the press switch (S2) to hear the horn (W1).

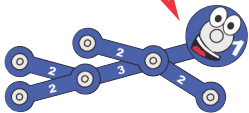
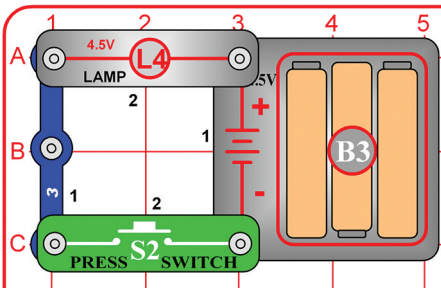
The horn converts electricity into sound by making mechanical vibrations. These vibrations create variations in air pressure which travel across the room. You "hear" when your ears feel these air pressure variations.



Project 7 Lamp

Push the switch (S2) to light the lamp (L4).

A light bulb, such as in this lamp, contains a special thin high-resistance wire. When a lot of electricity flows through, this wire gets so hot it glows bright. Voltages above the bulb's rating can burn out the wire.



Project 8 Spectrum of Light

Use the circuit from project 7, but look at the lamp (L4) through the prismatic film. Prismatic film is the approximately 1.5" x 1" plastic sheet that is included in this kit. Next, view different light sources in and around your home through the prismatic film.

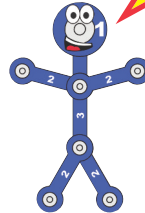
Prismatic film



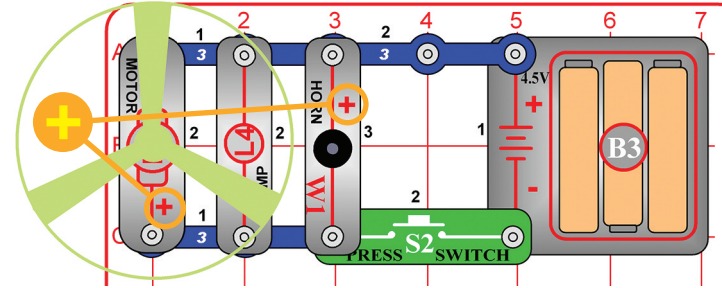
Prismatic film separates light into different colors, and can make interesting light effects. White light is a combination of all colors.

Project 9 Light, Sound, & Motion

Here the motor, horn, and lamp are connected in parallel; if one or two of them burn out, the other(s) will still work. The switch is connected in series with all of them; if it breaks, nothing will work. Electricity flows out of the batteries, through either the motor, horn, or lamp, then back to the batteries through the switch.



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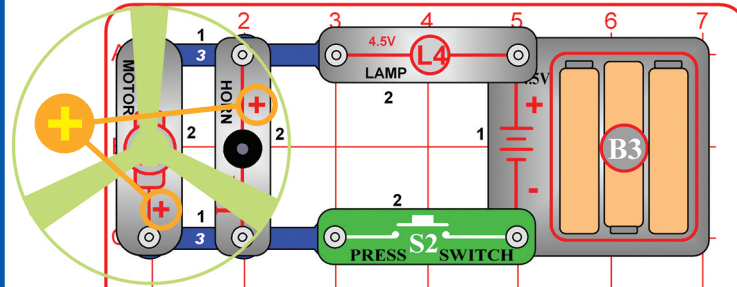


This circuit is the one shown on the box cover, use that as a guide in building it. Push the press switch (S2) to light the lamp (L4), sound the horn (W1), and spin the motor (M1). When you release the switch, the glow fan may rise into the air if it is spinning fast enough. If the fan does not fly when released at full speed then replace your batteries. If you do not want the fan to fly off then reverse the position of the motor.

Project 10 Combination

Push the press switch (S2) to light the lamp (L4), sound the horn (W1), and spin the motor (M1). The fan probably will not rise into the air as it did in project 9, because the motor isn't spinning it as fast now.

Now swap the locations of the motor (M1) and lamp (L4); the motor can be oriented in either direction. Compare the performance.

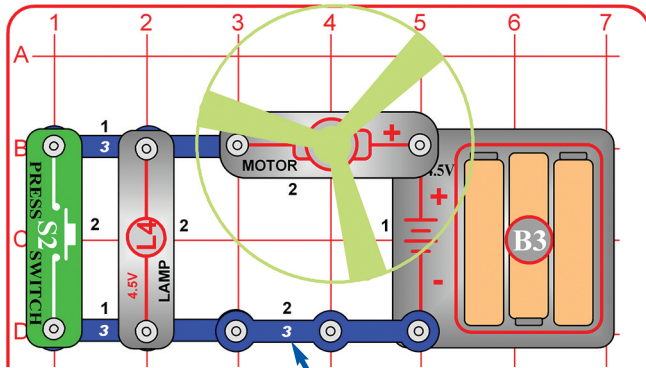


This circuit is similar to project 9, except here all the electricity from the batteries flows through the lamp, then the motor and horn, then back to the batteries through the switch. The battery voltage is split between the lamp, motor, and horn, making the motor slower, the horn quieter, and the lamp dimmer. The batteries will last longer now, because electricity isn't flowing out of them as fast as in project 9.



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Project 11 Two-Speed Fan



Install this piece last

The lamp (L4) lights and the motor (M1) starts spinning when you install the last 3-snap wire. Push the switch (S2) to bypass the lamp and make the fan speed up.

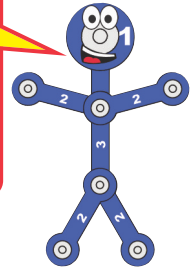
You can swap the locations of the lamp and motor to make a lamp with 2 brightness levels, but be careful not to touch the fan when pressing the switch.

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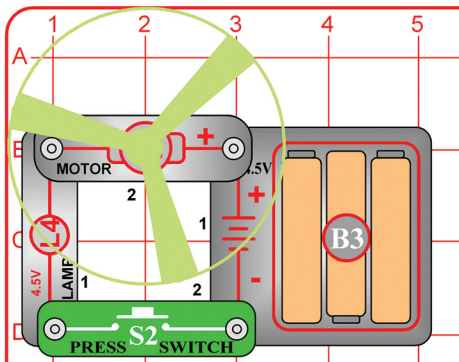
Project 13 Light Dimmer

Use the preceding circuit, but remove the glow fan from the motor (M1). Push the switch, and watch how the lamp starts out bright, but gets dim as the motor speeds up. Next, hold the motor top with your fingers so it can't spin, then push the switch and see how bright the lamp is.

The faster the motor is spinning, the less electricity it needs. The more electricity flows, the brighter the lamp gets. The motor needs the most electricity when it starts up, making the lamp brightest. Without the fan, the motor can spin fast and needs little electricity, making the lamp dim.



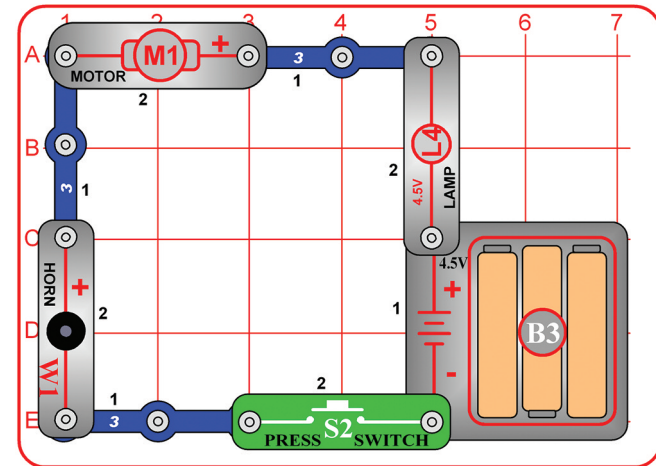
Project 12 Light & Motion



Push the switch (S2) to light the lamp (L4) and spin the motor (M1). Notice how the lamp gets a little less bright as the motor speeds up.

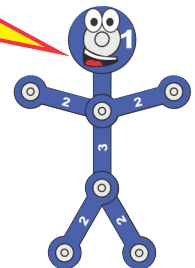
WARNING: Moving parts. Do not touch the motor or fan during operation. Do not lean over the motor. Fan may not rise until switch is released. Do not launch fan at people, animals, or objects. Eye protection is recommended.

Project 14 Limiter



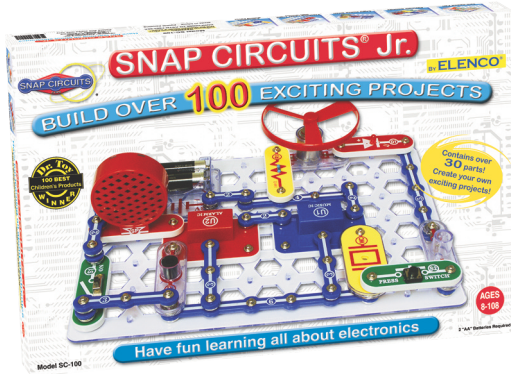
Push the switch (S2) and you hear the horn (W1), but the lamp (L4) will not light and the motor (M1) will not spin.

The horn doesn't need much electricity, but it limits how much can flow through the circuit, not allowing enough to light the lamp or spin start the motor.



OTHER SNAP CIRCUITS® PRODUCTS!

Contact Elenco® to find out where you can purchase these products.



Snap Circuits® Jr. Model SC-100

Build over 100 projects, contains over 30 parts.



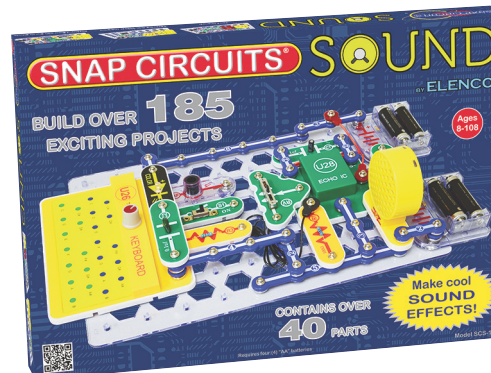
Snap Circuits® Light Model SCL-175

Build over 175 projects, contains over 55 parts.



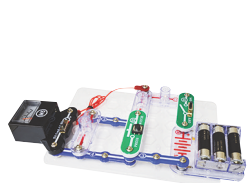
Snap Circuits® Green Model SCG-125

Build over 125 projects, contains over 40 parts.

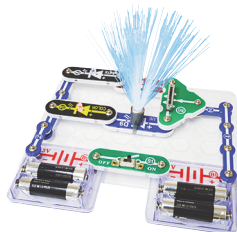


Snap Circuits® Sound Model SCS-185

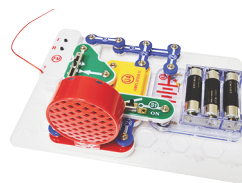
Build over 185 projects, contains over 40 parts.



Basic Electricity
Model SCP-10



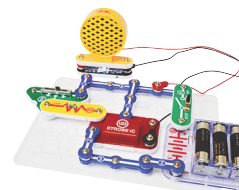
LED Fun
Model SCP-11



FM Radio
Model SCP-12



Motion Detector
Model SCP-13



Strobe Light & Sound
Model SCP-14

PARTS LIST

Qty.	ID	Name	Part #
□ 3	3	3-snap wire	6SC03
□ 1	B3	Battery holder	6SCB3
□ 1		Base grid	6SCBGMF
□ 1		Prismatic film	6SCFILM
□ 1	L4	4.5V Lamp	6SCL4
□ 1	M1	Motor	6SCM1
□ 1		Cardboard pattern	6SCM1C
□ 1		Glow fan	6SCM1FG
□ 1	S2	Press switch	6SCS2
□ 1	W1	Horn	6SCW1

Important: If any parts are missing or damaged, **DO NOT RETURN TO RETAILER.** Call toll-free (800) 533-2441 or e-mail us at: help@elenco.com.
Customer Service • 150 Carpenter Ave. • Wheeling, IL 60090 U.S.A.

You may order additional / replacement parts at our website: www.snapcircuits.net

BATTERIES:

- Use only 1.5V AA type, alkaline batteries (not included).
- Insert batteries with correct polarity.
- Non-rechargeable batteries should not be recharged. Rechargeable batteries should only be charged under adult supervision, and should not be recharged while in the product.
- Do not mix alkaline, standard (carbon-zinc), or rechargeable (nickel-cadmium) batteries.
- Do not mix old and new batteries.
- Remove batteries when they are used up.
- Do not short circuit the battery terminals.
- Never throw batteries in a fire or attempt to open its outer casing.
- Batteries are harmful if swallowed, so keep away from small children.