

Classroom kits for CIRCUIT ART

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Please contact us, our Technical Support Team is standing by.

Email us at support@booleangirl.org

Make sure to check your SPAM folder for our reply.

Check the FAQ microbitkit.com/support

You can also give us a call:

202-996-8241 from 9-4 EST (email is your best bet).

A Digital version of this
guide is at:
<https://booleangirl.org/ed/resources/#papercircuits>

Contents may differ from photos.

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Classroom kits for **CIRCUIT ART**

Funding for this
provided by



the alice + eugene
ford foundation

1

Kits designed to light up art projects

These kits are designed to light up projects for the DCPS Enchanted City/Build Day Cornerstone. They can be used in a variety of art projects. Each kit contains 100 LEDs, 25 battery cases, 25 coin batteries, and a bunch of strips of conductive tape.



2

Battery Case

The battery case holds the coin battery. It has a positive (+) and negative (-) terminal. It also has an on/off switch. All the components snap in to Lego.



3

Coin battery

The coin battery is the source of voltage. Insert the battery into the case. The positive side (+) goes up.



4

LED

The LED or Light Emitting Diode is the light or resistance in the circuit. It also has a + and - terminal.

A coin battery will power multiple LEDs



5

Conductive Tape

Conductive tape is like a wire and is used to connect the power (coin battery) to the LED so it lights up.

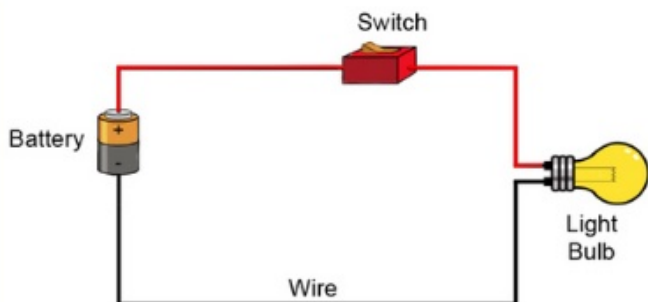


5 steps to building a SIMPLE CIRCUIT

1

Build a simple circuit

Start by creating a simple circuit. In science we learn that a circuit is the path that an electric current travels on.



A simple circuit contains three components necessary to have a functioning electric circuit, namely, a source of voltage, a conductive path, and a resistor.



2

Collect supplies

Conductive tape, an LED, a battery case, a coin battery. Use a piece of cardboard as the base.

3

Insert the battery into the case

Insert the battery into the case. The positive side (+) goes up.



5

Turn on the light

Move the switch to on and the light should light.

4

Build the circuit

Run tape from the + side of the battery case to the + side of the LED. Run a second piece of tape from the negative side of the battery to the negative side of the LED.

Troubleshooting

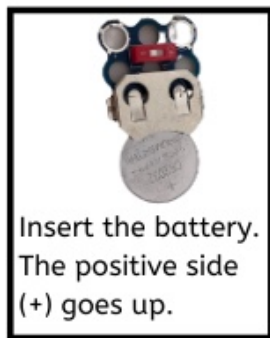
- 1) Make sure the tape has a good connection to the LED and battery pack.
- 2) Make sure the tape goes + to + and - to -.
- 3) Is the battery in + side up?
- 4) Is the battery working?
- 5) Is the + tape touching the - tape?

5 steps to create CIRCUIT ART

1

Create the art work

Start by creating your art work designed so that you can add a light later.



Insert the battery.
The positive side
(+) goes up.

2

Collect supplies

Conductive tape, an LED, a battery case, a coin battery. Maybe some regular tape. Insert the battery into the case.

3

Insert the LED through the paper

Insert the LED through the paper.

You can use more than one LED.



4

Build the Circuit

Connect the tape and battery case to the back of the drawing. We used masking tape to hold the battery case in place.

If you add more than one LED make sure the lines do not cross.

5

Make sure the tape does not cross

If the tape is touching, that creates a “short circuit” and the LED will not light.

Make sure you can trace the circuit.

Trace the circuit



5 steps to create pipe cleaner CIRCUIT ART

Pipe cleaners are also conductors so you can use them to create a circuit instead of conductive tape

1

Build a simple circuit

Collect the parts:

Pipe cleaners, an LED, a battery case, a battery.

Estimate the length of the pipe cleaners, then cut them about $\frac{1}{2}$ inch longer.



2

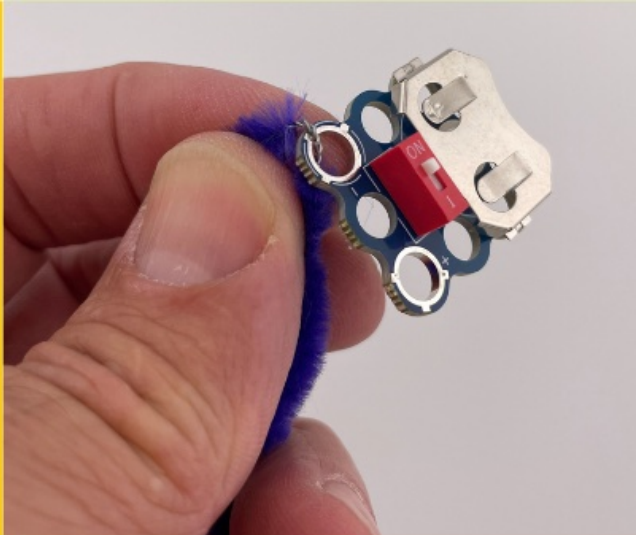
Remove the Fuzz

Remove the fuzz near the ends of the pipe cleaners. It is easier to twist on if you leave a little fuzz at the ends!

3

Connect the circuit

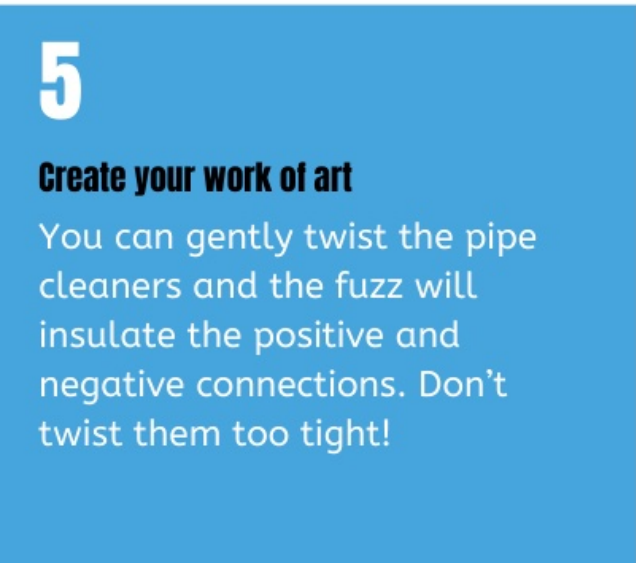
Twist the ends of the pipe cleaners around the LED and battery pack connection points. Make sure it is positive to positive and negative to negative



4

Make the connection

Twist the pipe cleaner so the connection is nice and tight



5

Create your work of art

You can gently twist the pipe cleaners and the fuzz will insulate the positive and negative connections. Don't twist them too tight!



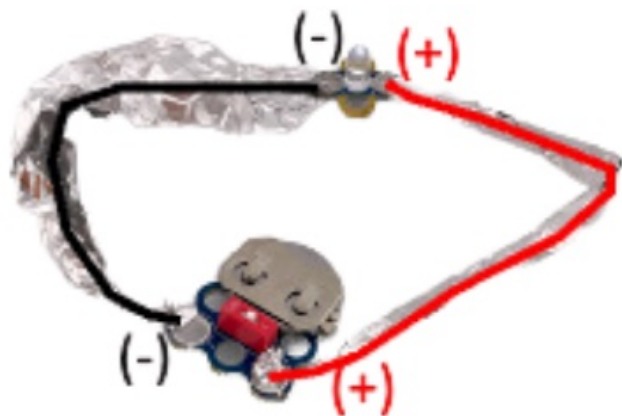
Other Ideas for CIRCUIT ART

Find other items that conduct to create art. Paper clips, conductive thread, and lots of household items conduct electricity

1

Tin foil is a great conductor

Just be careful that the piece of foil don't touch and short out the circuit.



2

Trace your circuit

Always make sure you can trace a clean circuit.