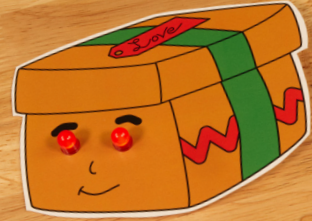


Winter Season Paper Circuits

Includes Templates
and Instructions!



BROWN DOG *Gadgets*

BrownDogGadgets.com

Winter Season Paper Circuits

Each of the cards in this eBook can be made using Maker Tape and 10mm Jumbo LEDs, which can be found in our **Paper Circuits Kit**. Each card includes a ready-to-go full-color version as well as black & white version that can be colored by hand. Print each card as a double sided print and then cut them out with scissors.

Guides for each of these projects (and many more!) can be found at learn.BrownDogGadgets.com



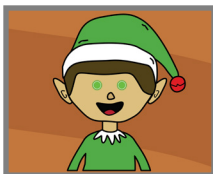
Reinald the Reindeer

Full Color: Pages 3-4
Black & White: Pages 5-6



Hot Cocoa

Full Color: Pages 23-24
Black & White: Pages 25-26



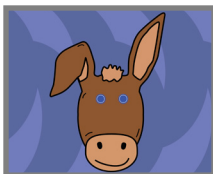
Danny the Elf

Full Color: Pages 7-8
Black & White: Pages 9-10



Olivia the Owl

Full Color: Pages 27-28
Black & White: Pages 29-30



Dominick the Donkey

Full Color: Pages 11-12
Black & White: Pages 13-14



Hailey the Hat

Full Color: Pages 31-32
Black & White: Pages 33-34



Gary the Giftbox

Full Color: Pages 15-16
Black & White: Pages 17-18



Stella Star

Full Color: Pages 35-36
Black & White: Pages 37-38



Gingerbread Gene

Full Color: Pages 19-20
Black & White: Pages 21-22

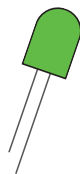


Polar Bear

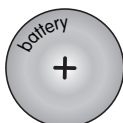
Full Color: Pages 39-40
Black & White: Pages 41-42



Maker Tape



LED



Battery



New to paper circuits? Check out our *Getting Started with Paper Circuits* video available at:

<https://youtu.be/BxOqugaHIZE>



Reginald the Reindeer


Make a light up reindeer paper circuit using an LED, a CR2032 battery, and some Maker Tape. You can find all these parts in our Paper Circuits Kit.

💡 We recommend printing on a heavier paper like cardstock, but regular weight paper will also work.

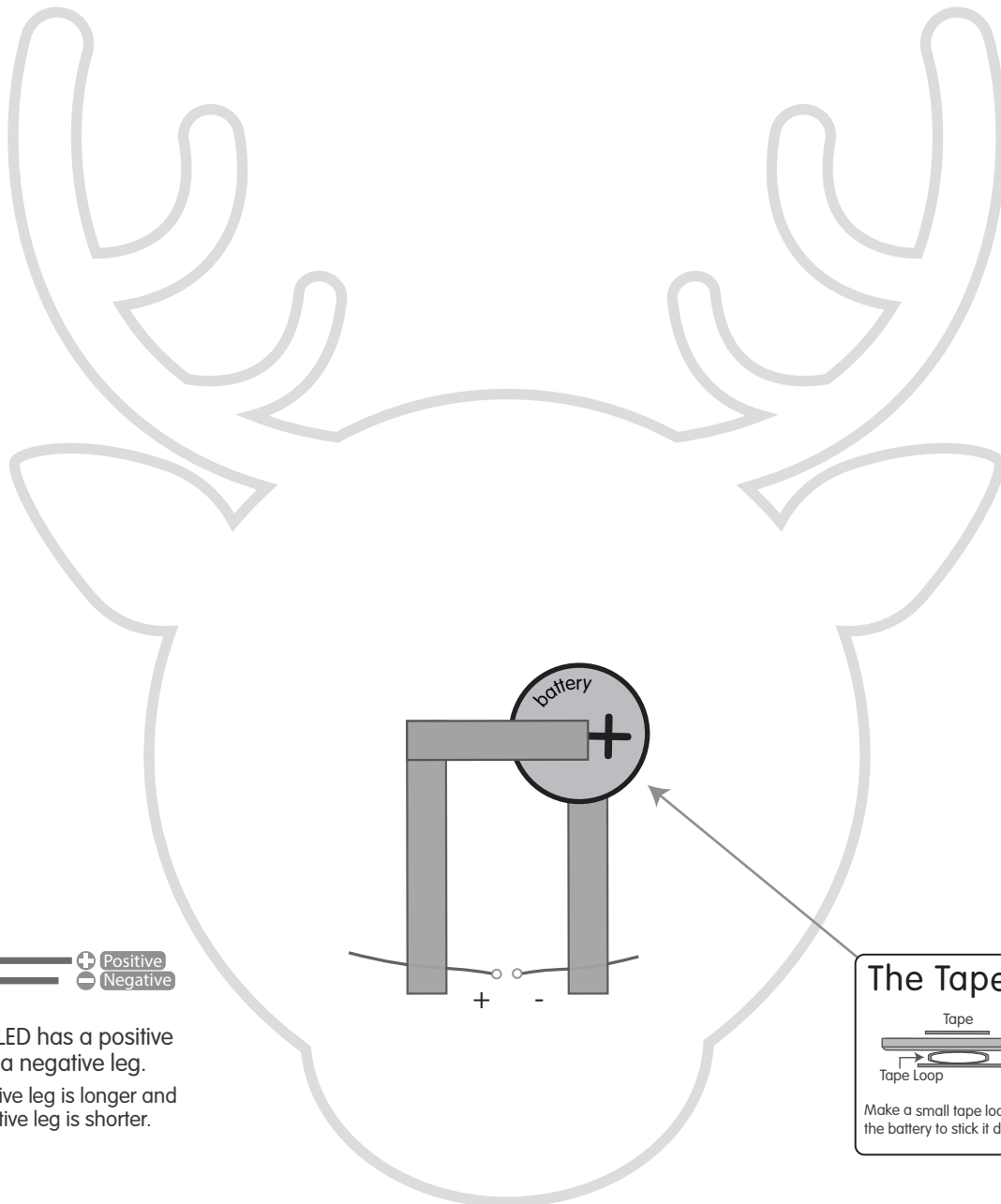
💡 It makes things easier if you can print double sided, but you can just print the front and use the back side as a guide to build your circuit.


💡 We know of at least one reindeer that has a red nose, but maybe Reginald has a blue nose, or a green nose! Use whatever color LED you prefer to help Reginald the Reindeer light up the night sky!



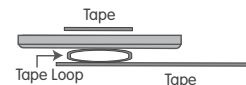
- 1 Cut out the reindeer.**
(For best results cut from the front side in case your print doesn't line up properly with the back.)
-  **Note:** If you are using the black & white version you may want to color it before you cut it out.
- 2 Poke holes through the front for the LED legs.**
(We recommend using a safety pin or paper clip.)
- 3 Insert the LED legs through the front, making sure the negative leg matches up with the negative sign.**
(The shorter LED leg is the negative one.)

- 4 Bend the LED legs flat against the back side.**
- 5 Add the negative piece of Maker Tape to the LED leg.**
(This will connect the negative leg to the negative side of the battery.)
- 6 Add a tape loop to the negative piece of tape, then stick the battery down to it.**
(Make sure you stick the negative side of the battery down.)
- 7 Add additional pieces of Maker Tape to connect the positive LED leg to the top of the battery.**
(Your LED should light up as soon as you connect the tape.)



 **Tip!** An LED has a positive leg and a negative leg. The positive leg is longer and the negative leg is shorter.

The Tape Loop



Make a small tape loop underneath the battery to stick it down to the tape

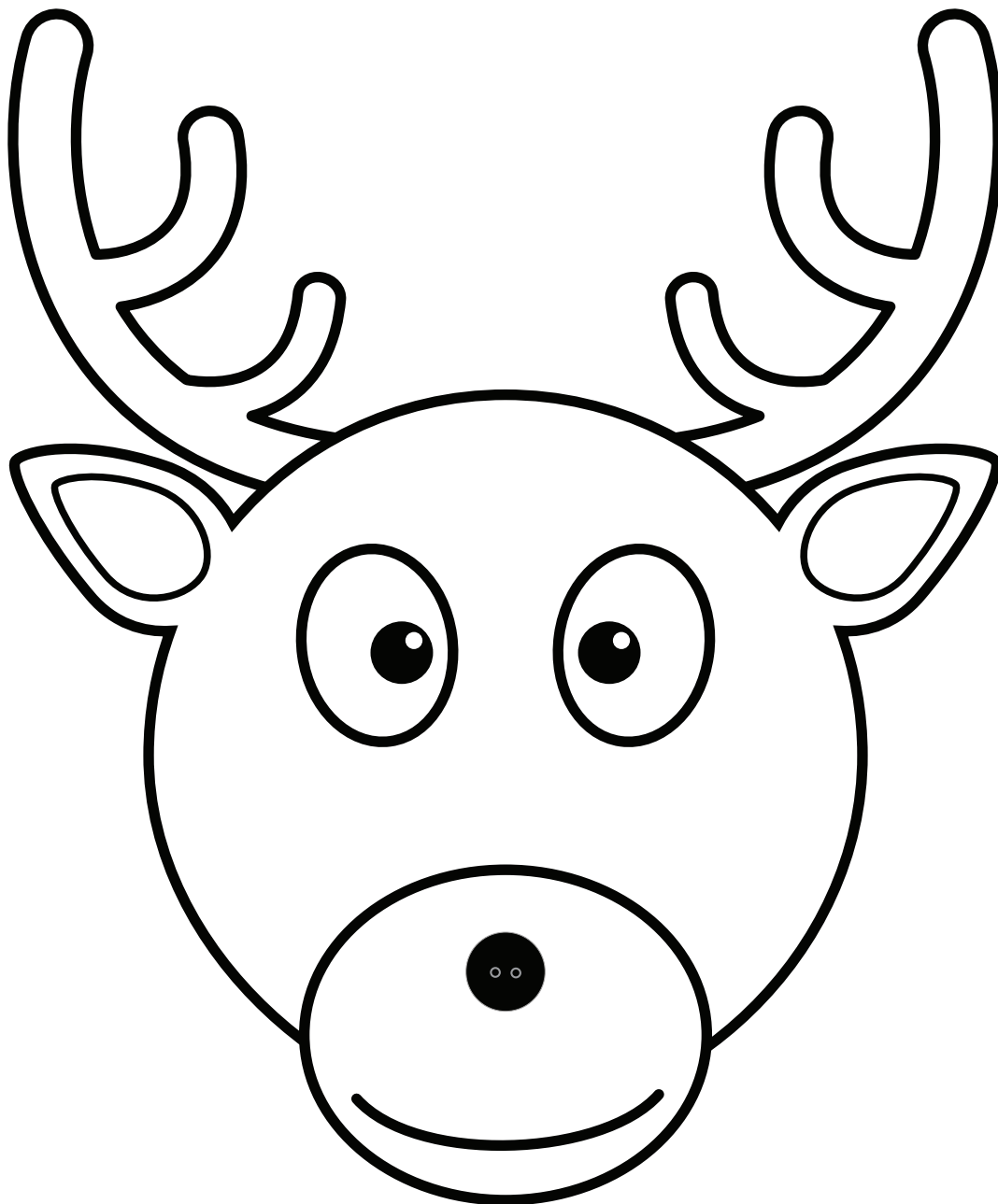
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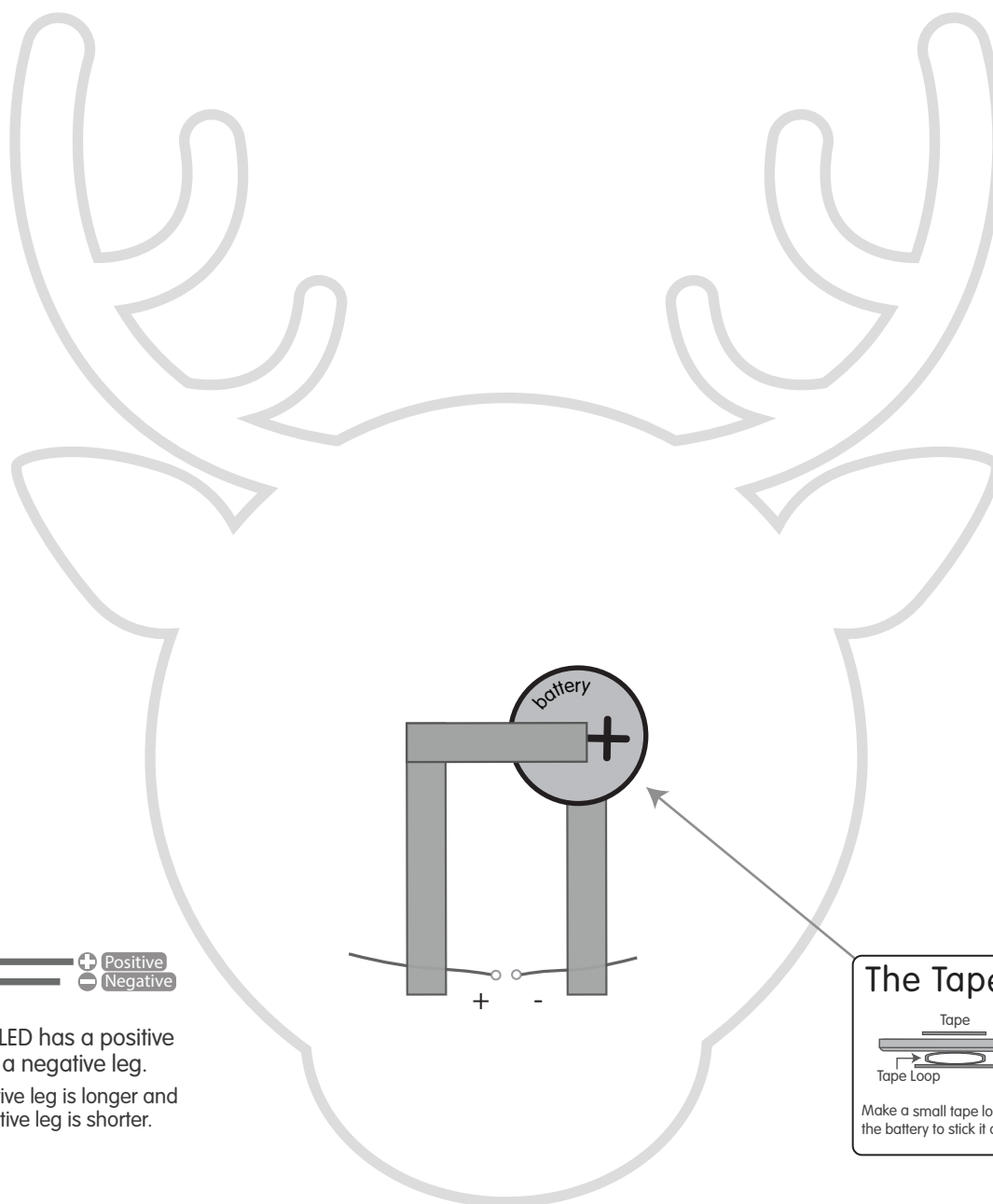
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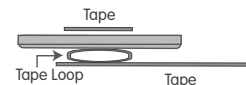
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 **Tip!** An LED has a positive leg and a negative leg. The positive leg is longer and the negative leg is shorter.

The Tape Loop



Make a small tape loop underneath the battery to stick it down to the tape

Danny the Elf


Make a light up elf paper circuit using two LEDs, a CR2032 battery, and some Maker Tape. You can find all these parts in our Paper Circuits Kit.

💡 We recommend printing on a heavier paper like cardstock, but regular weight paper will also work.

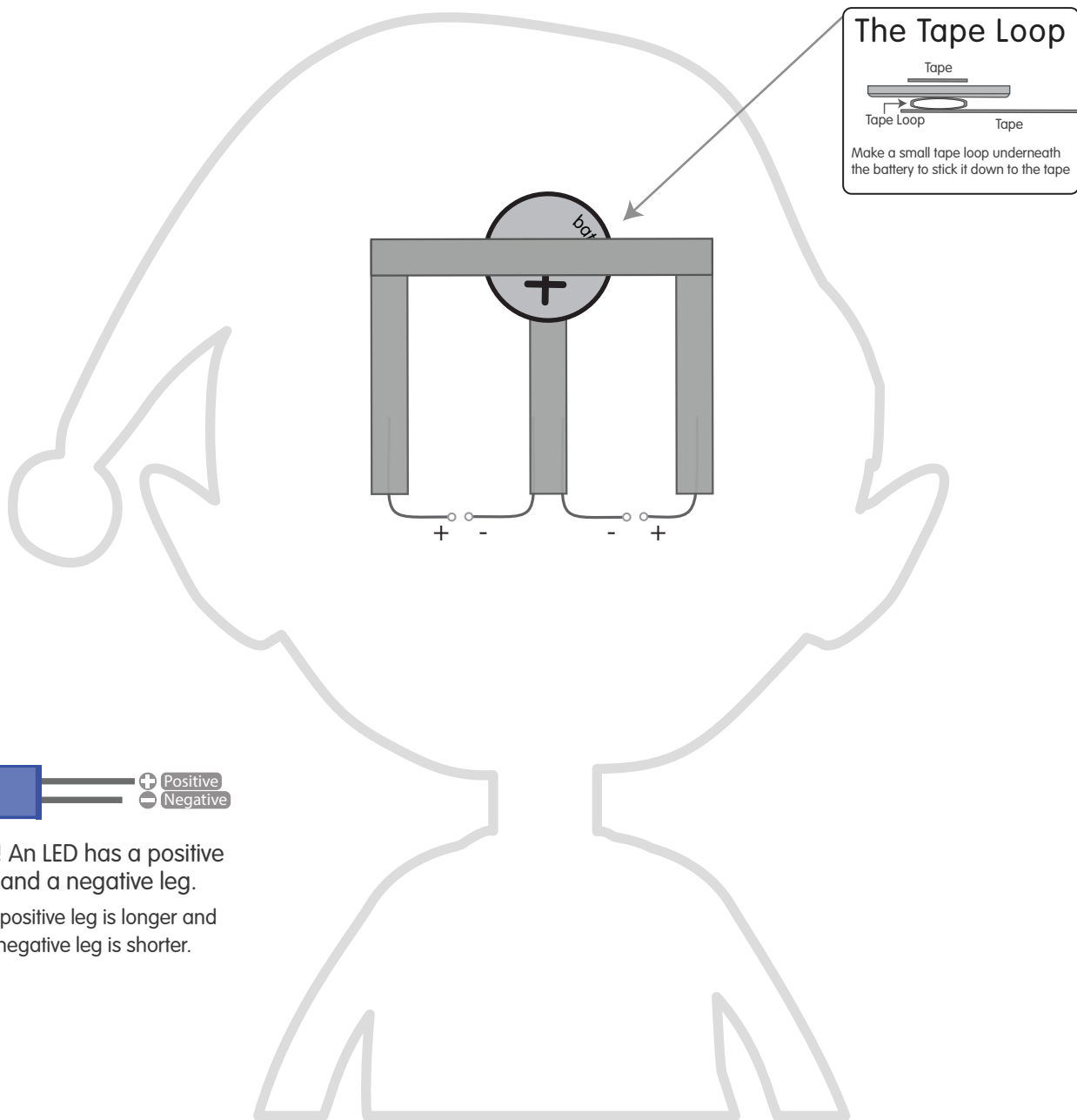
💡 You can use any color LED that you like. Different colors might convey different moods. What does the elf look like with blue eyes? What do red or green eyes look like?


💡 It makes things easier if you can print double sided, but you can just print the front and use the back side as a guide to build your circuit.



- 1 Cut out the elf.**
(For best results cut from the front side in case your print doesn't line up properly with the back.)
-  **Note:** If you are using the black & white version you may want to color it before you cut it out.
- 2 Poke holes through the front for the LED legs.**
(We recommend using a safety pin or paper clip.)
- 3 Insert the LED legs through the front, making sure the negative legs are towards the center.**
(The shorter LED leg is the negative one.)

- 4 Bend the LED legs flat against the back side.**
- 5 Add the center piece of Maker Tape to the LED legs.**
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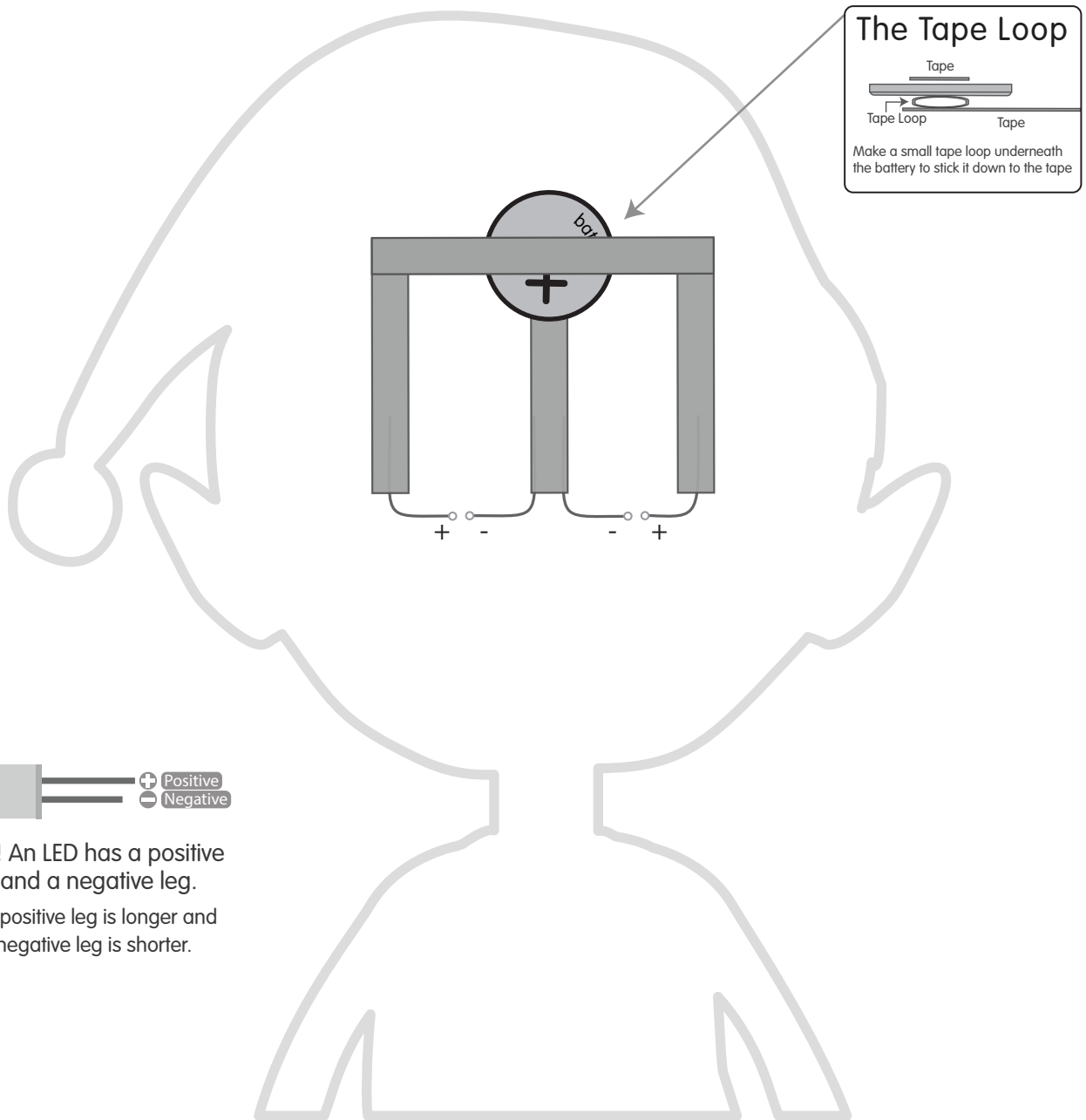
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The Tape Loop

Make a small tape loop underneath the battery to stick it down to the tape

 **Tip!** An LED has a positive leg and a negative leg.
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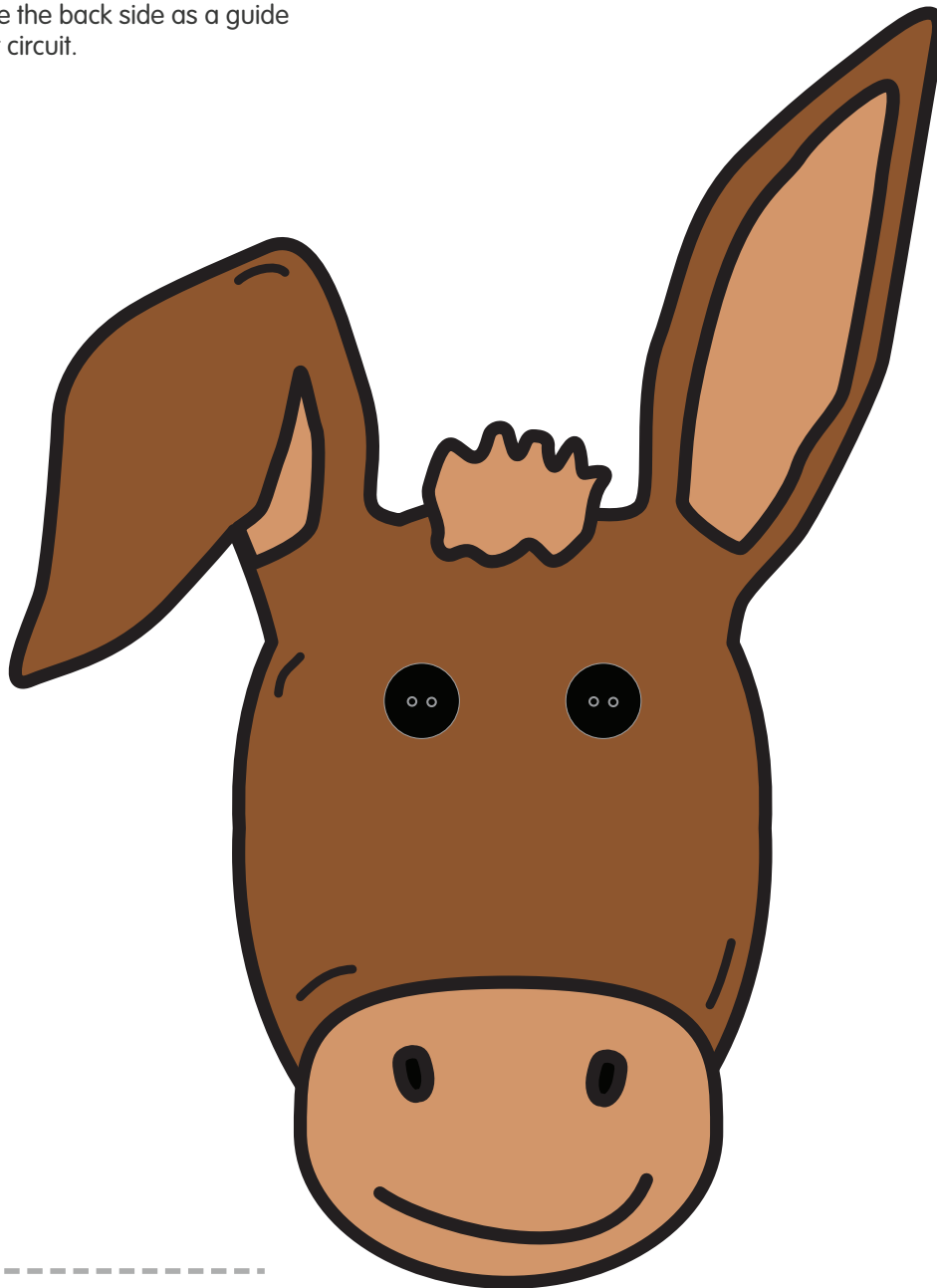
Dominick the Donkey

Make a light up donkey paper circuit using two LEDs, a CR2032 battery, and some Maker Tape. You can find all these parts in our Paper Circuits Kit.

💡 We recommend printing on a heavier paper like cardstock, but regular weight paper will also work.


💡 It makes things easier if you can print double sided, but you can just print the front and use the back side as a guide to build your circuit.

💡 You can use any color LED that you like. Different colors might convey different moods. What does the donkey look like with blue eyes? What do red or green eyes look like?



1 Cut out the donkey.

(For best results cut from the front side in case your print doesn't line up properly with the back.)

 **Note:** If you are using the black & white version you may want to color it before you cut it out.

2 Poke holes through the front for the LED legs.

(We recommend using a safety pin or paper clip.)

3 Insert the LED legs through the front, making sure the negative legs are towards the center.

(The shorter LED leg is the negative one.)

4 Bend the LED legs flat against the back side.

5 Add the center piece of Maker Tape to the LED legs.

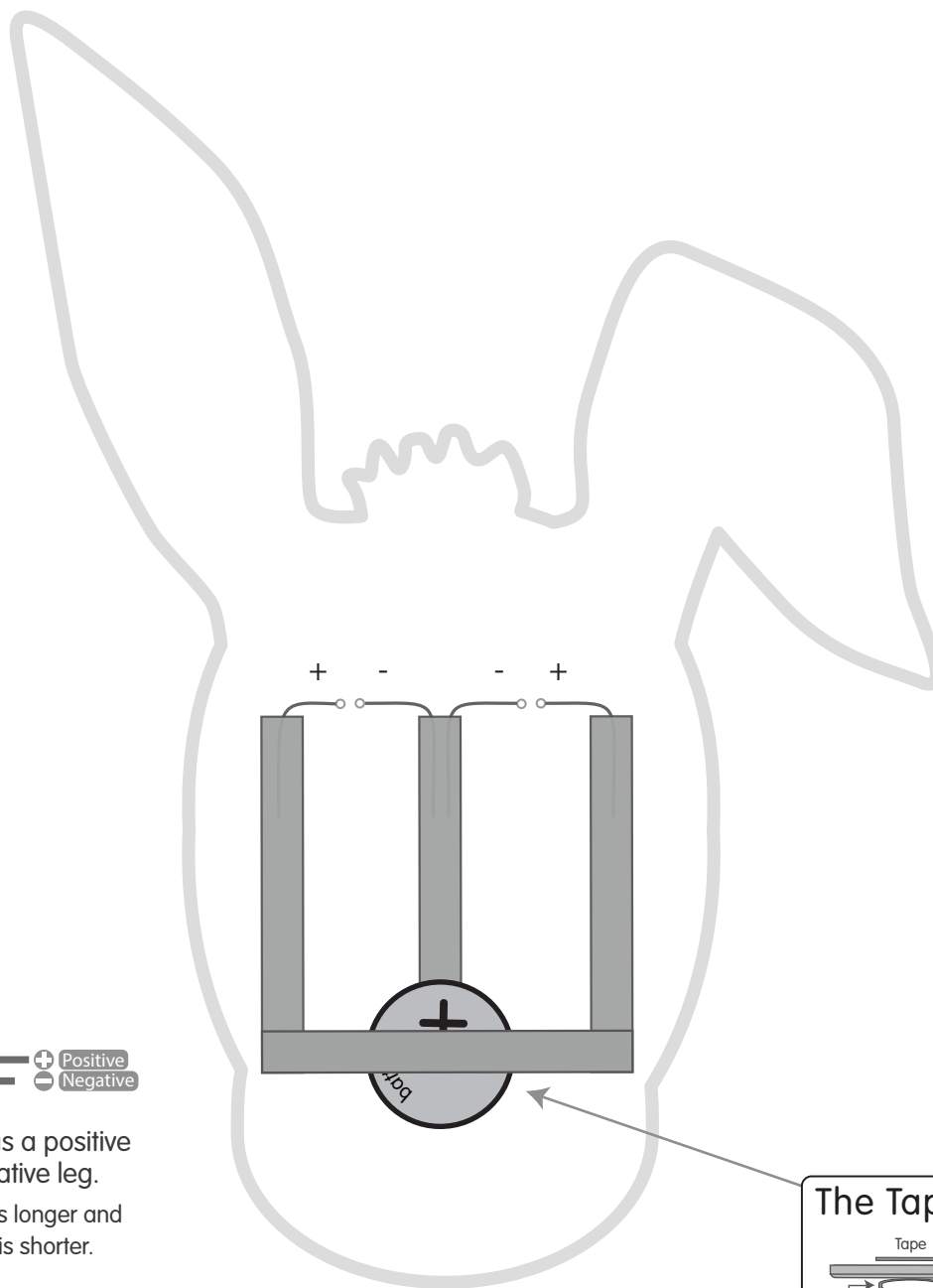
(This will connect the negative legs to the negative side of the battery.)


6 Add a tape loop to the center piece of tape, then stick the battery down to it.

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7 Add additional pieces of Maker Tape to connect the positive LED legs to the top of the battery.

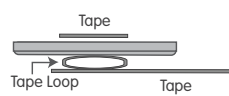
(Your LEDs should light up as soon as you connect the tape.)



 **Tip!** An LED has a positive leg and a negative leg.

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The Tape Loop



Make a small tape loop underneath the battery to stick it down to the tape

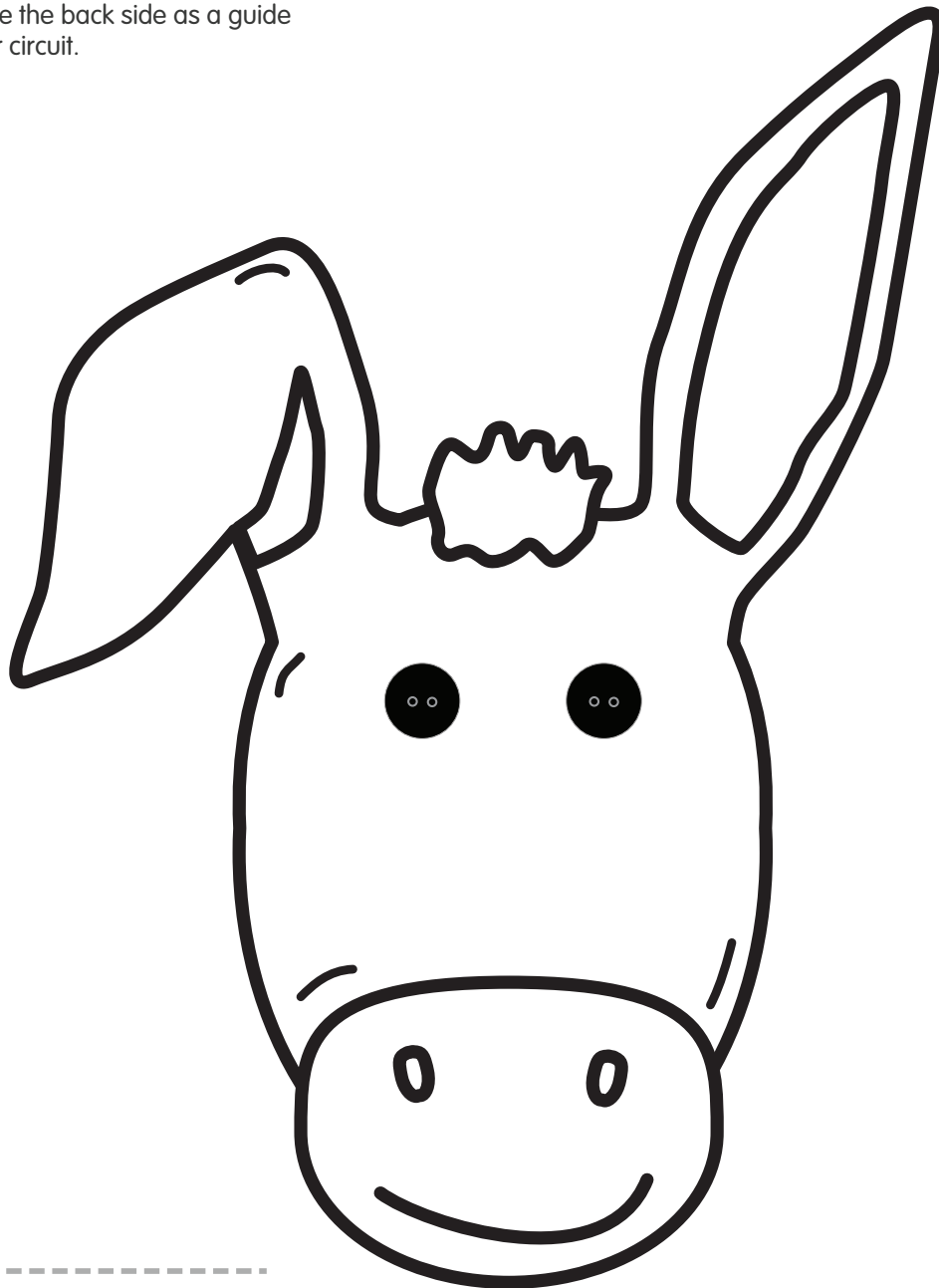
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💡 You can use any color LED that you like. Different colors might convey different moods. What does the donkey look like with blue eyes? What do red or green eyes look like?



1 Cut out the donkey.

(For best results cut from the front side in case your print doesn't line up properly with the back.)

 **Note:** If you are using the black & white version you may want to color it before you cut it out.

2 Poke holes through the front for the LED legs.

(We recommend using a safety pin or paper clip.)

3 Insert the LED legs through the front, making sure the negative legs are towards the center.

(The shorter LED leg is the negative one.)

4 Bend the LED legs flat against the back side.

5 Add the center piece of Maker Tape to the LED legs.

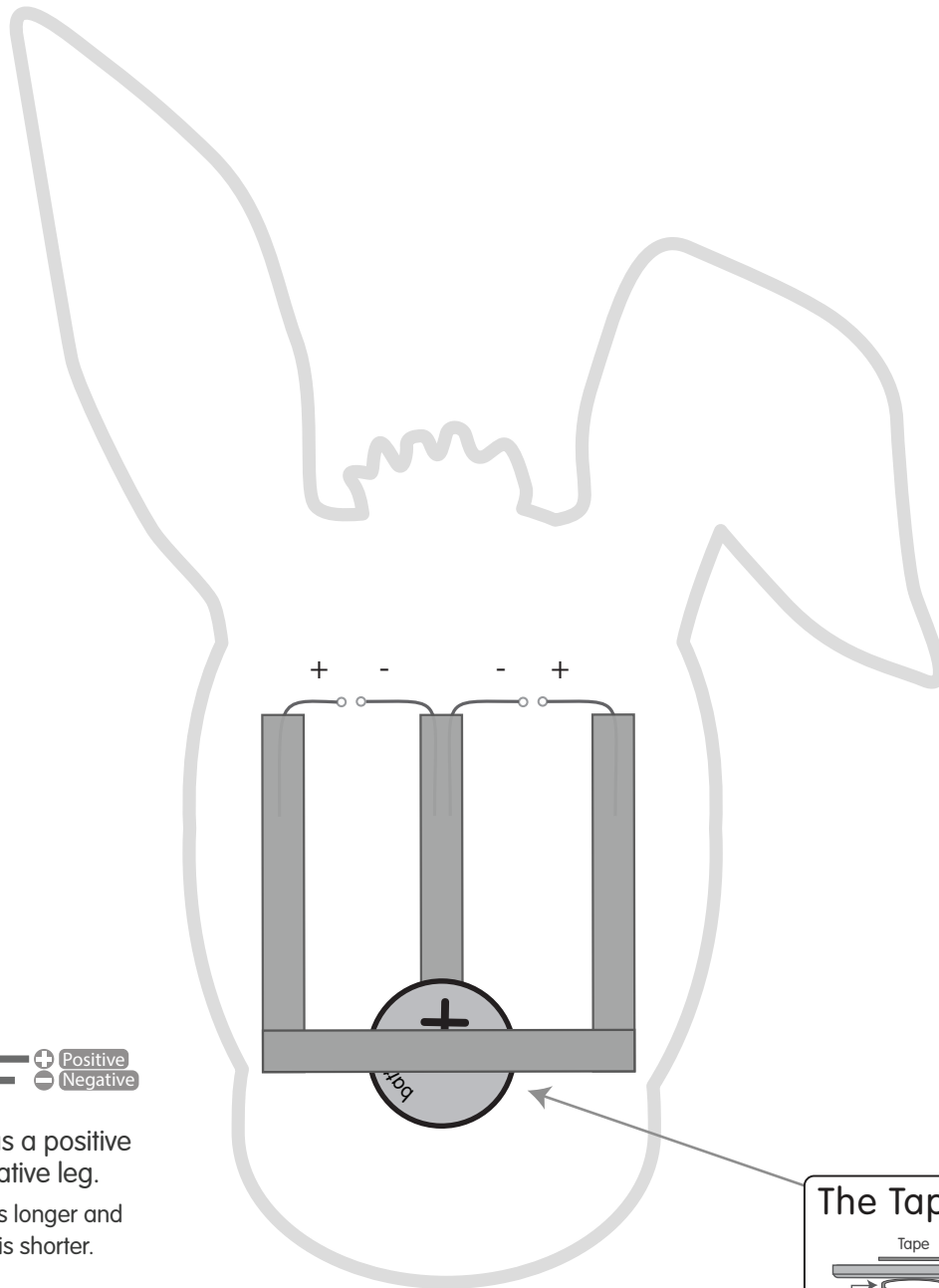
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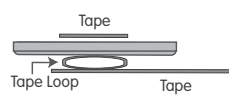
(Your LEDs should light up as soon as you connect the tape.)



 **Tip!** An LED has a positive leg and a negative leg.

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The Tape Loop



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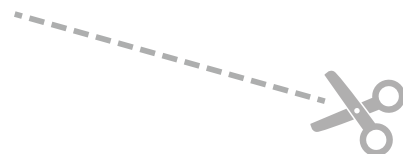
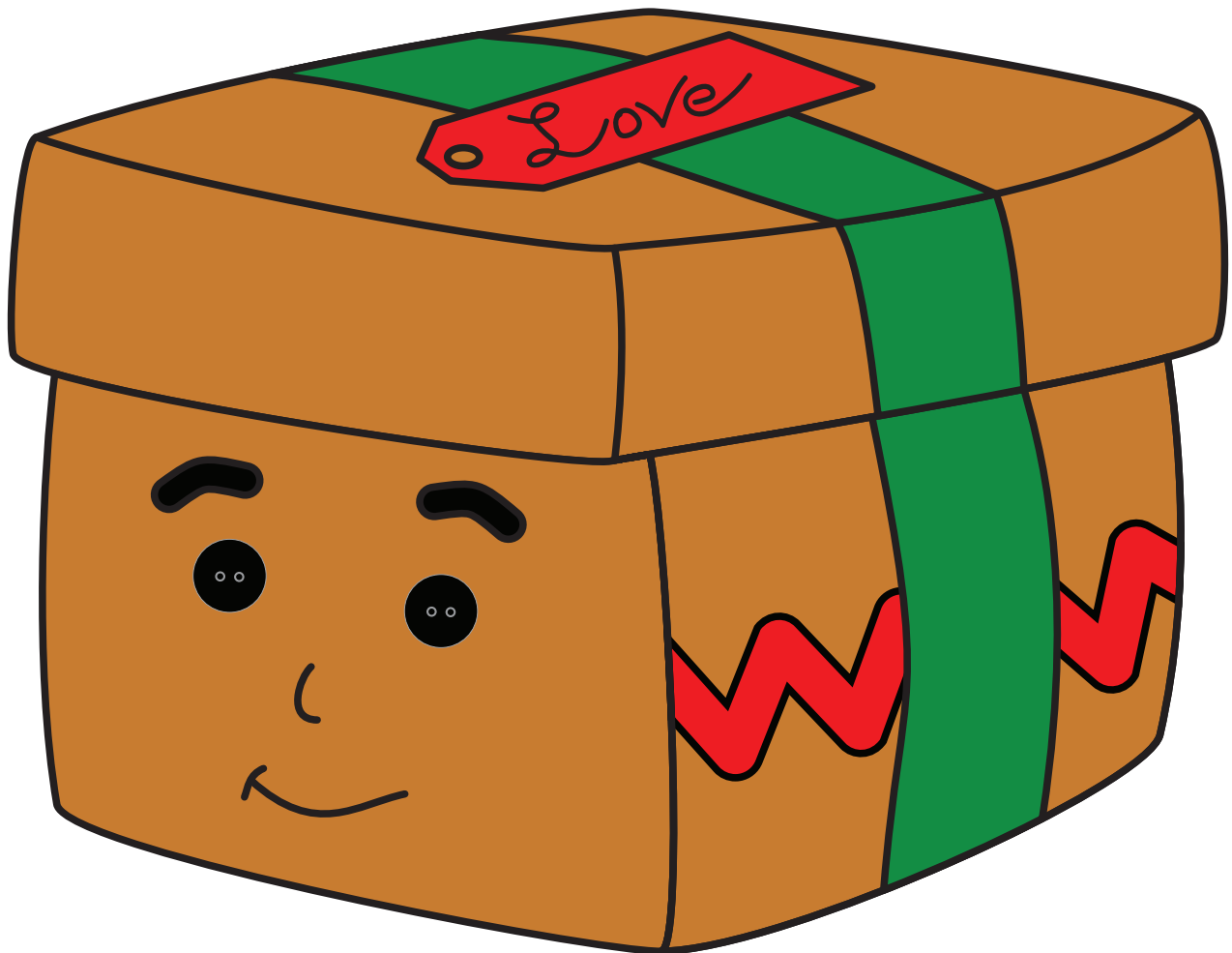
Gary the Giftbox


Make a light up giftbox paper circuit using two LEDs, a CR2032 battery, and some Maker Tape. You can find all these parts in our Paper Circuits Kit.

💡 We recommend printing on a heavier paper like cardstock, but regular weight paper will also work.

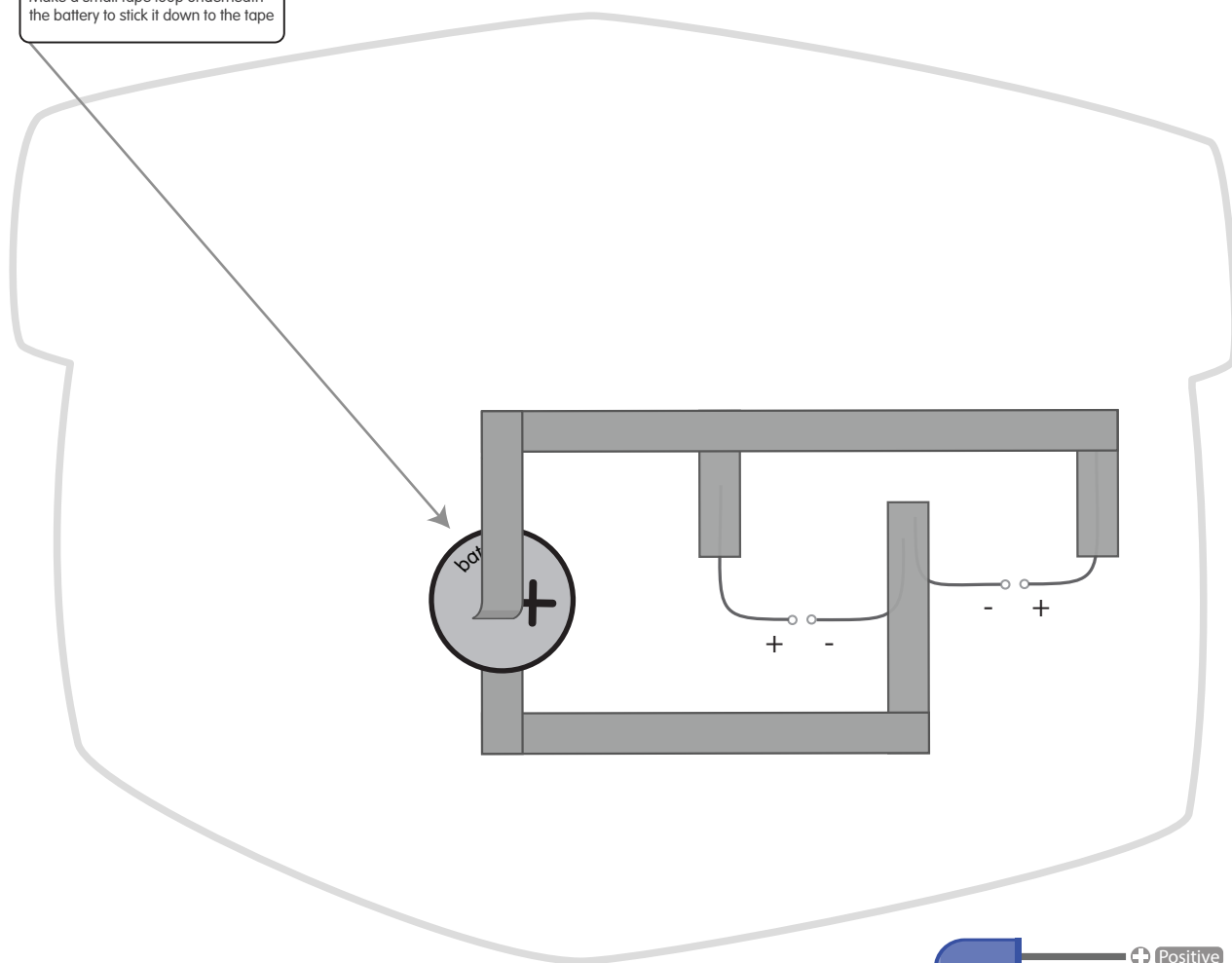
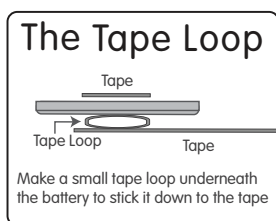
💡 You can use any color LED that you like. Different colors might convey different moods. What does the box look like with green eyes? What do blue or red eyes look like?


💡 It makes things easier if you can print double sided, but you can just print the front and use the back side as a guide to build your circuit.



- 1 Cut out the giftbox.**
(For best results cut from the front side in case your print doesn't line up properly with the back.)
-  **Note:** If you are using the black & white version you may want to color it before you cut it out.
- 2 Poke holes through the front for the LED legs.**
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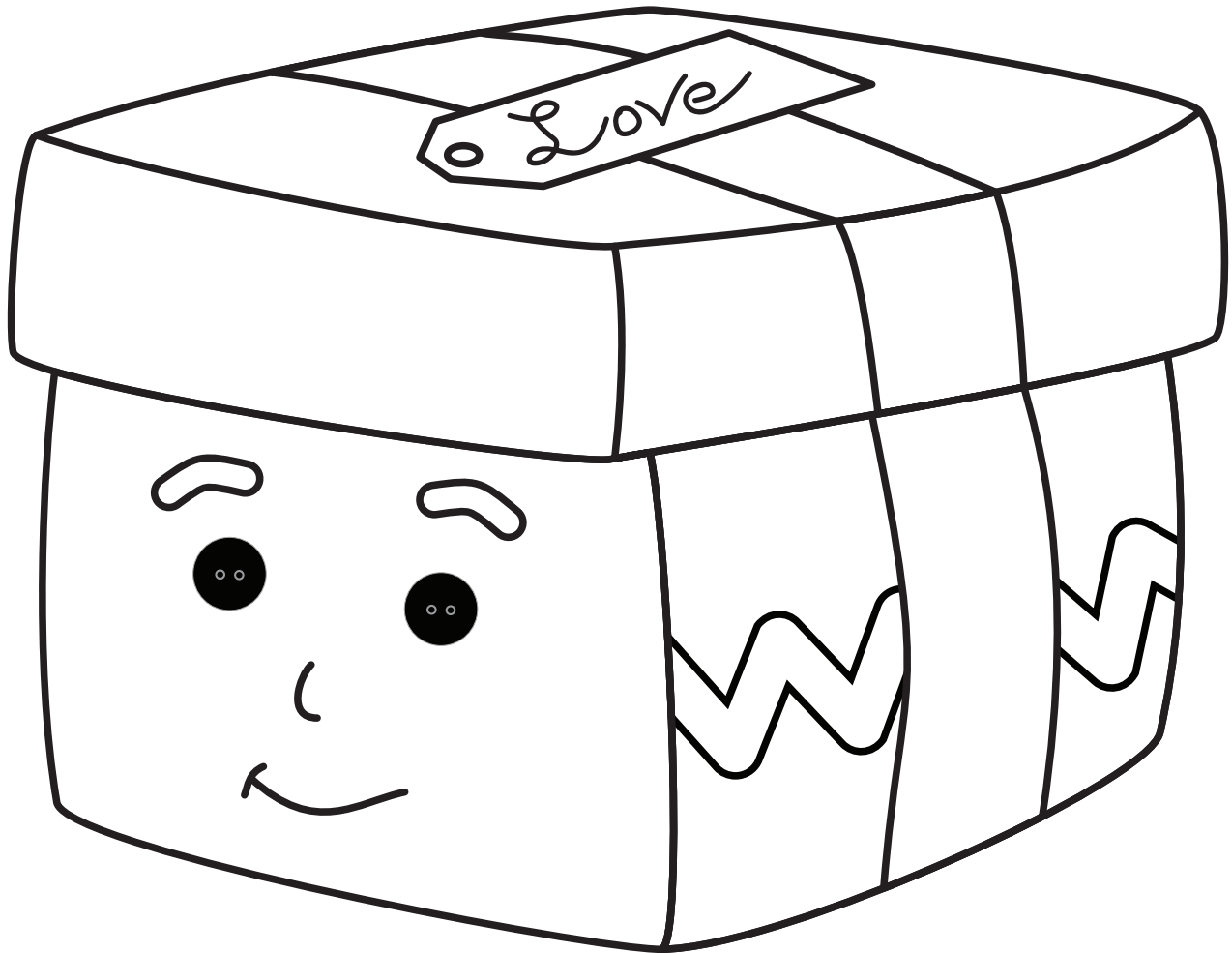
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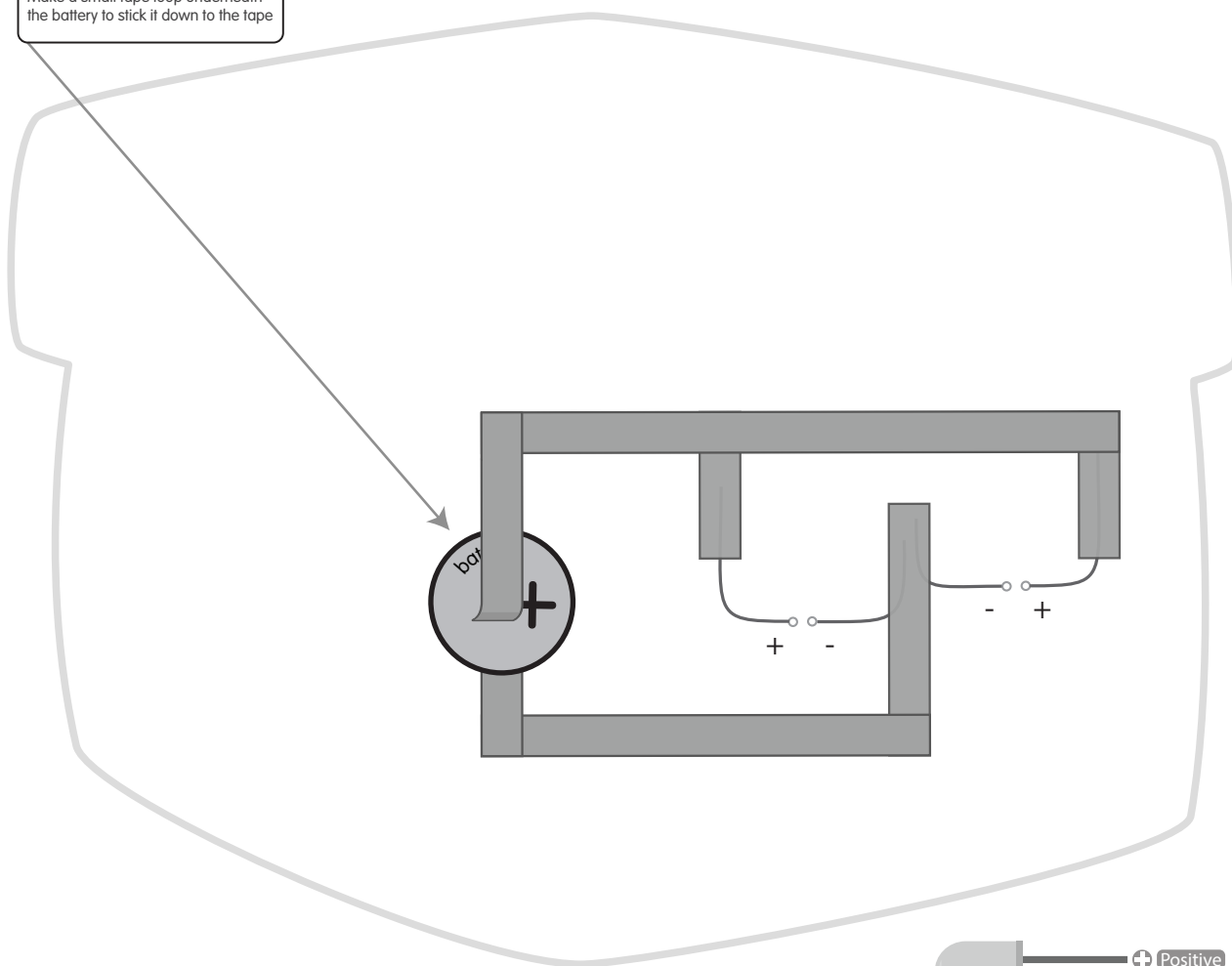
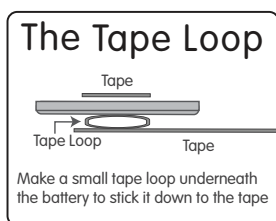
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
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Gingerbread Gene


Make a light up gingerbread friend paper circuit using two LEDs, a CR2032 battery, and some Maker Tape. You can find all these parts in our Paper Circuits Kit.

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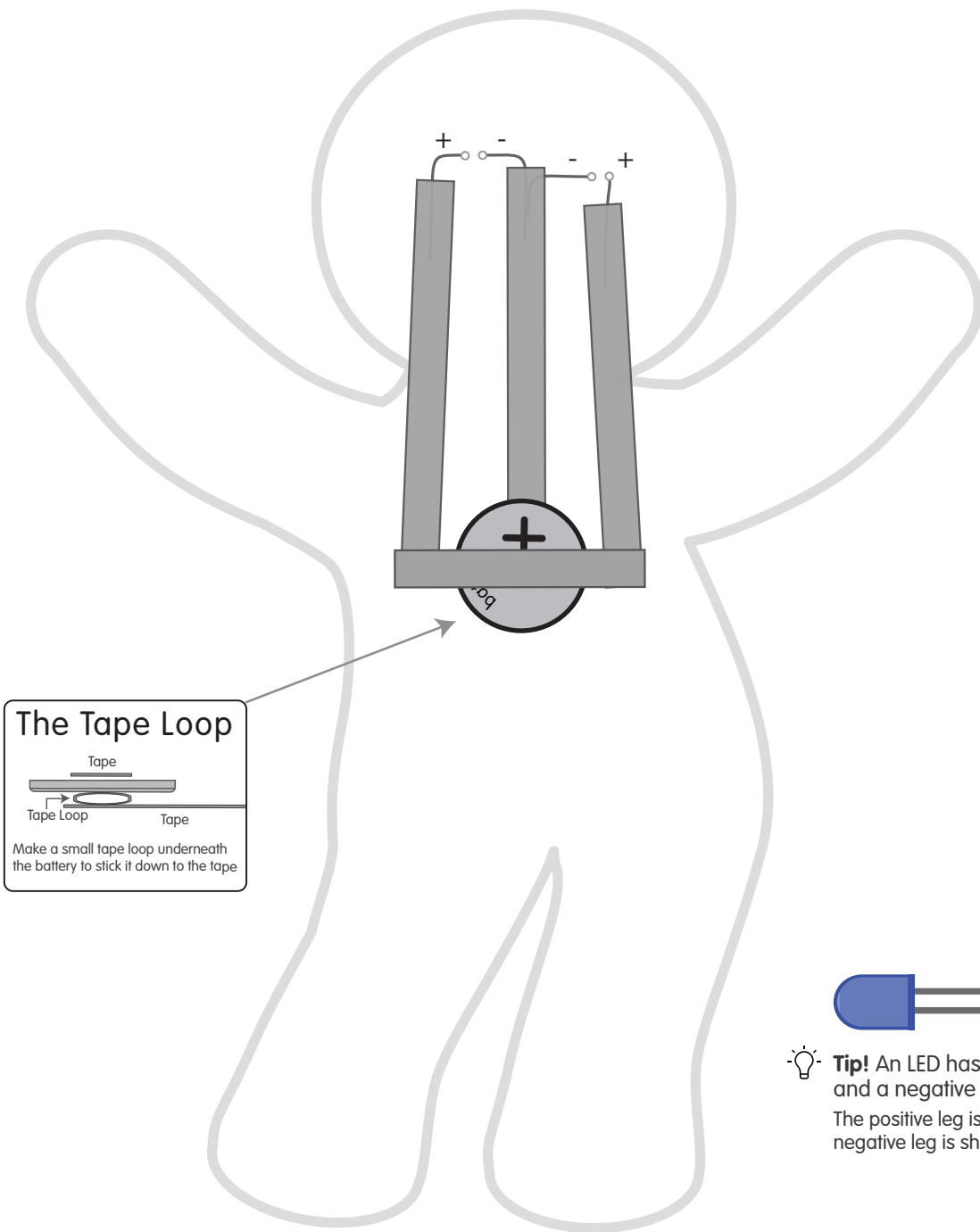
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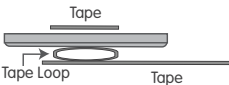


- 1 Cut out the gingerbread person.**
(For best results cut from the front side in case your print doesn't line up properly with the back.)
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The Tape Loop



Make a small tape loop underneath the battery to stick it down to the tape



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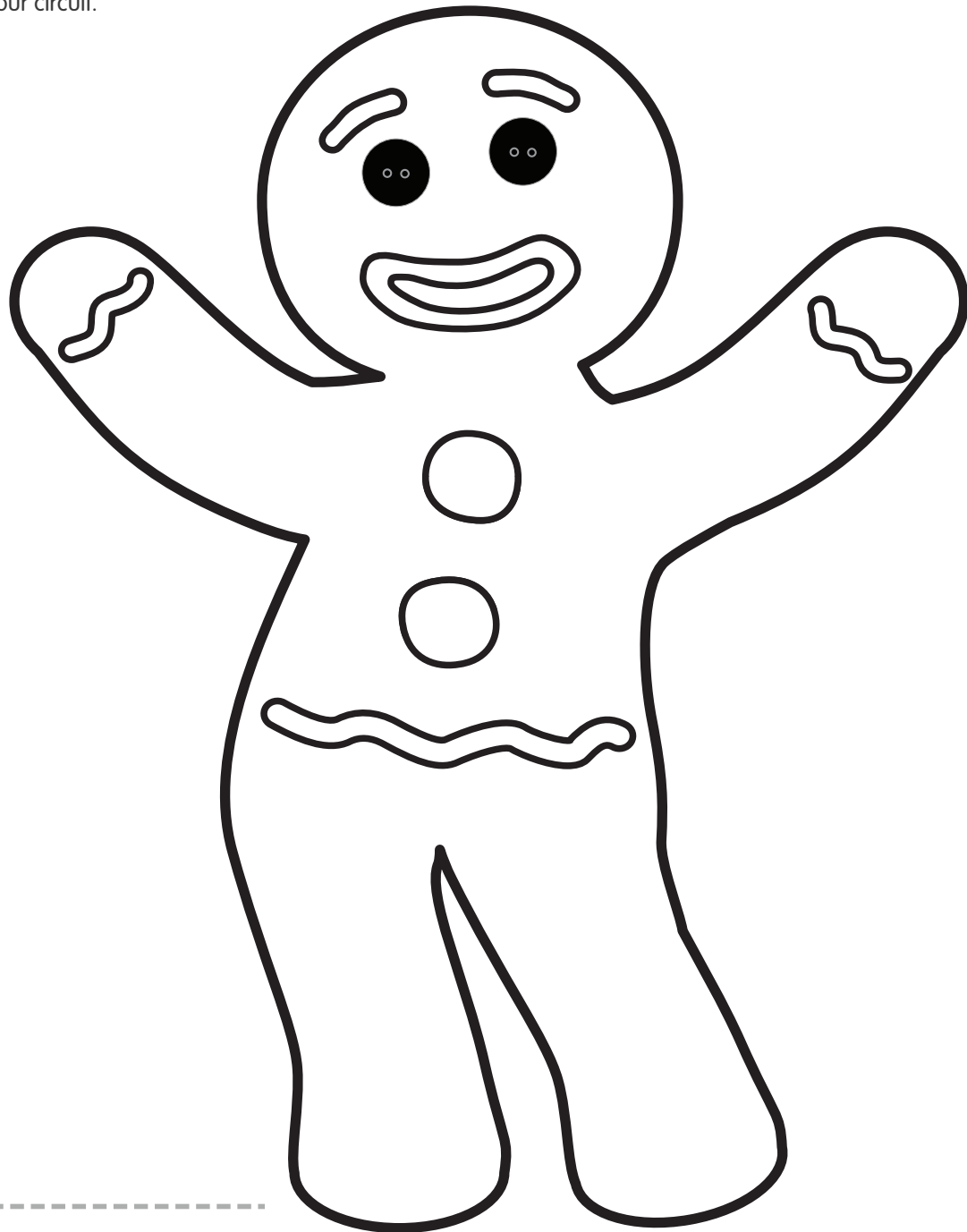
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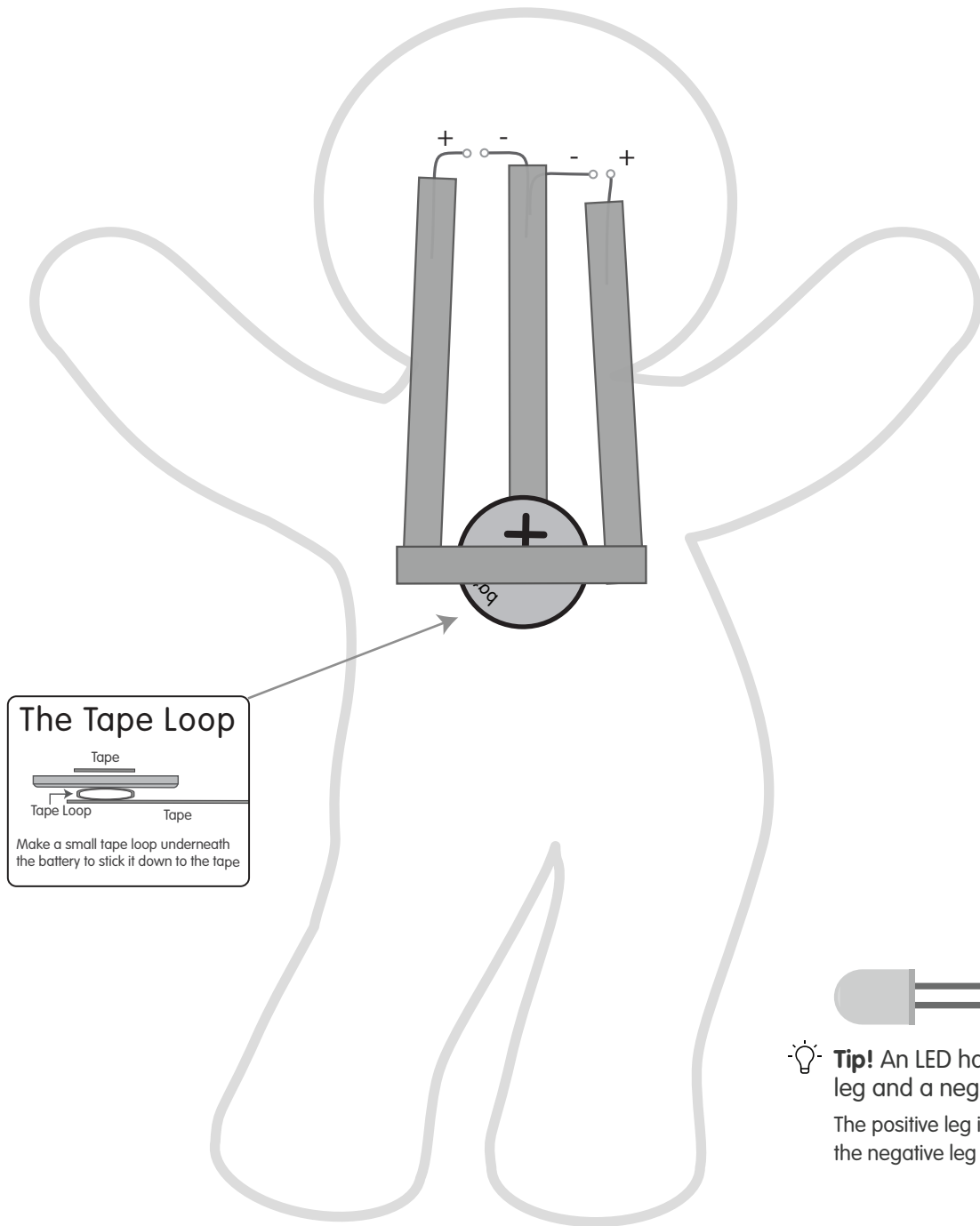
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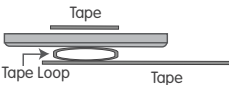


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The Tape Loop



Make a small tape loop underneath the battery to stick it down to the tape



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Hot Cocoa

Make a light up mug paper circuit using two LEDs, a CR2032 battery, and some Maker Tape. You can find all these parts in our Paper Circuits Kit.

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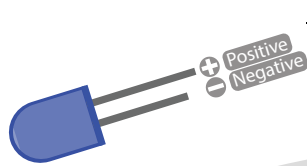
(This will connect the negative legs to the negative side of the battery.)


6 Add a tape loop to the center piece of tape, then stick the battery down to it.

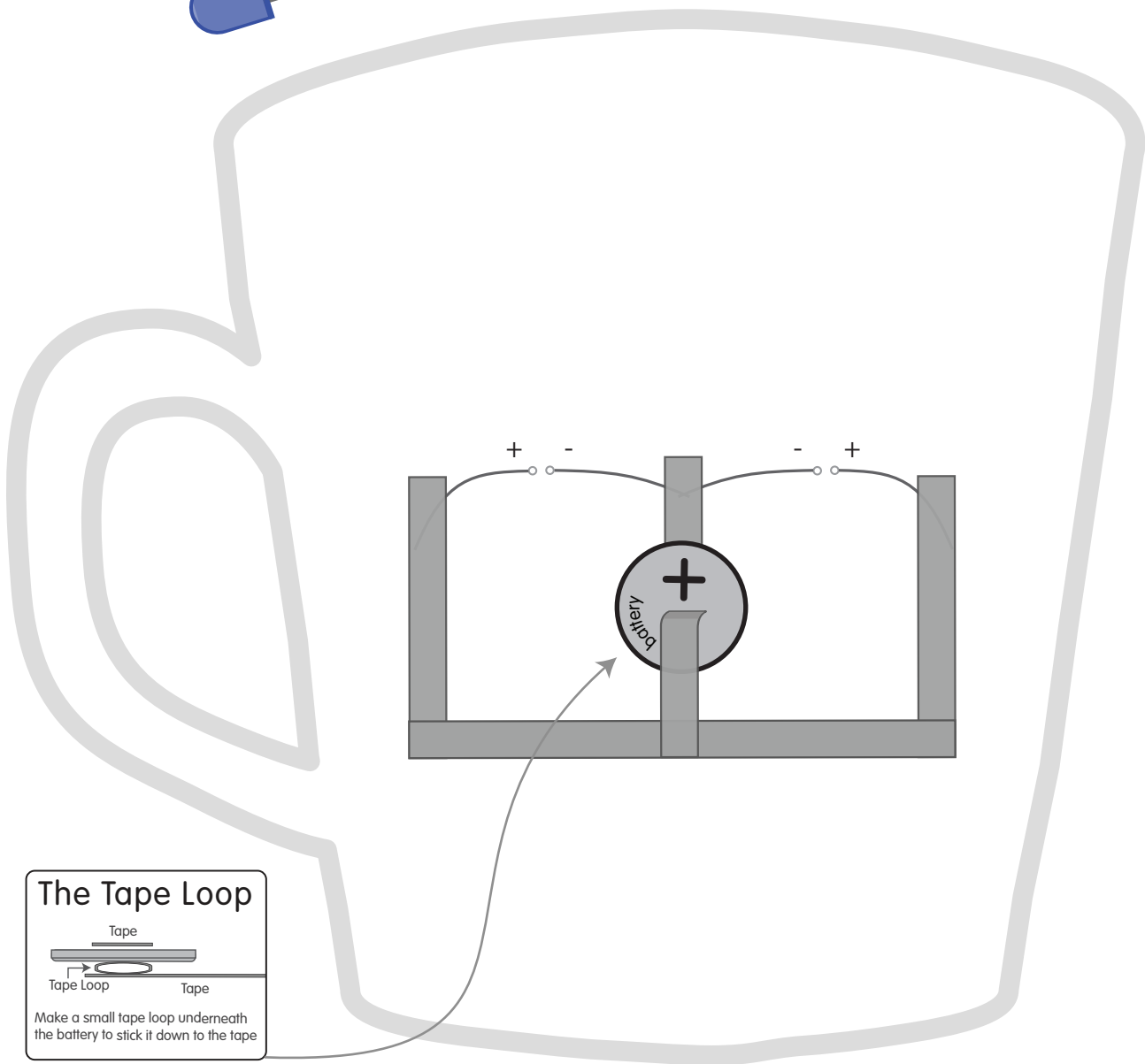
(Make sure you stick the negative side of the battery down.)

7 Add additional pieces of Maker Tape to connect the positive LED legs to the top of the battery.

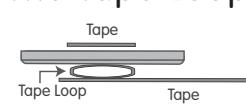
(Your LEDs should light up as soon as you connect the tape.)



 **Tip!** An LED has a positive leg and a negative leg. The positive leg is longer and the negative leg is shorter.



The Tape Loop



Make a small tape loop underneath the battery to stick it down to the tape

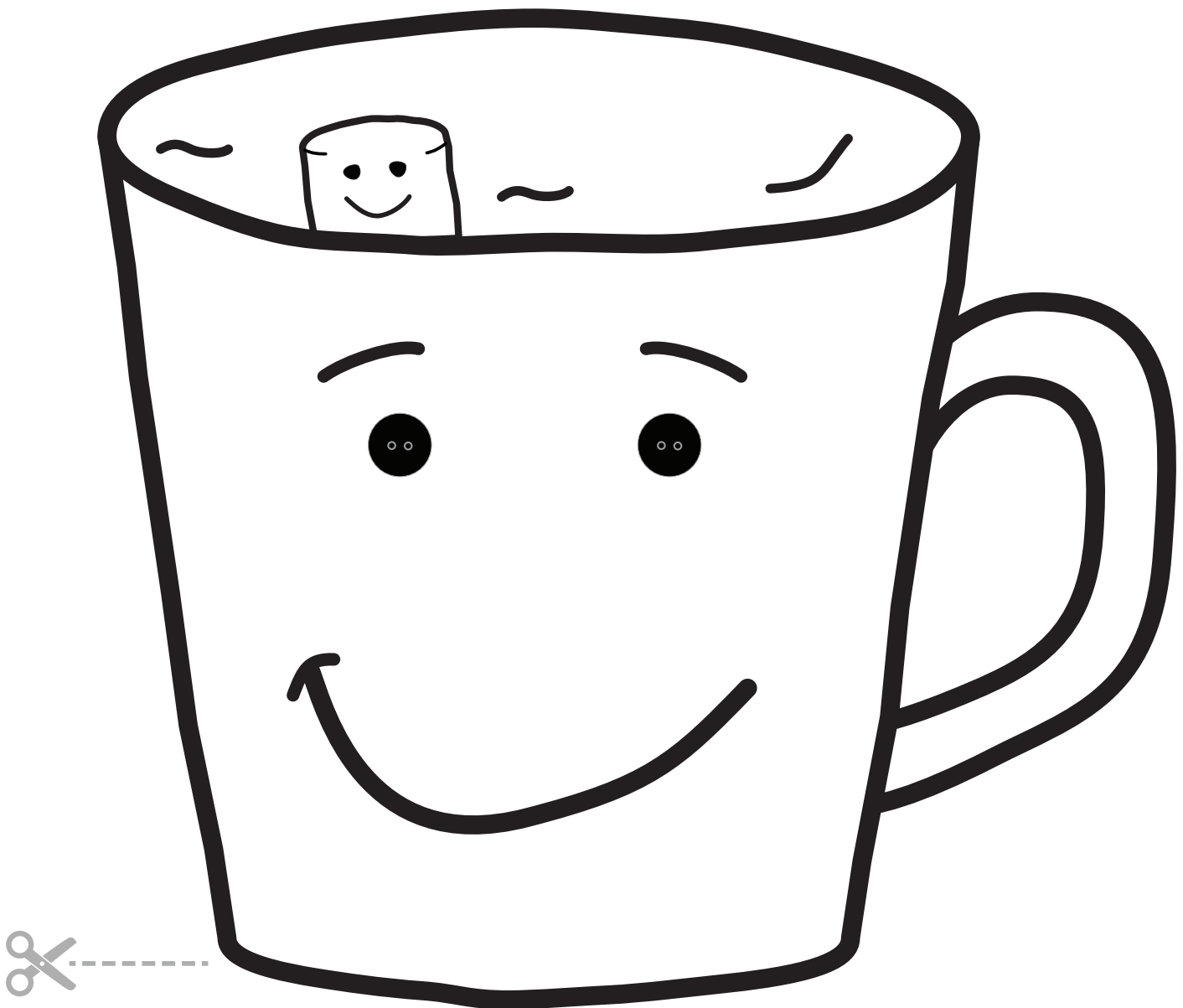
Hot Cocoa

Make a light up mug paper circuit using two LEDs, a CR2032 battery, and some Maker Tape. You can find all these parts in our Paper Circuits Kit.

💡 We recommend printing on a heavier paper like cardstock, but regular weight paper will also work.


💡 You can use any color LED that you like. Different colors might convey different moods. What does the face look like with blue eyes? What do red or green eyes look like?

💡 It makes things easier if you can print double sided, but you can just print the front and use the back side as a guide to build your circuit.



1 Cut out the mug.

(For best results cut from the front side in case your print doesn't line up properly with the back.)

 **Note:** If you are using the black & white version you may want to color it before you cut it out.

2 Poke holes through the front for the LED legs.

(We recommend using a safety pin or paper clip.)

3 Insert the LED legs through the front, making sure the negative legs are towards the center.

(The shorter LED leg is the negative one.)

4 Bend the LED legs flat against the back side.

5 Add the center piece of Maker Tape to the LED legs.

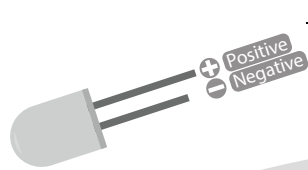
(This will connect the negative legs to the negative side of the battery.)


6 Add a tape loop to the center piece of tape, then stick the battery down to it.

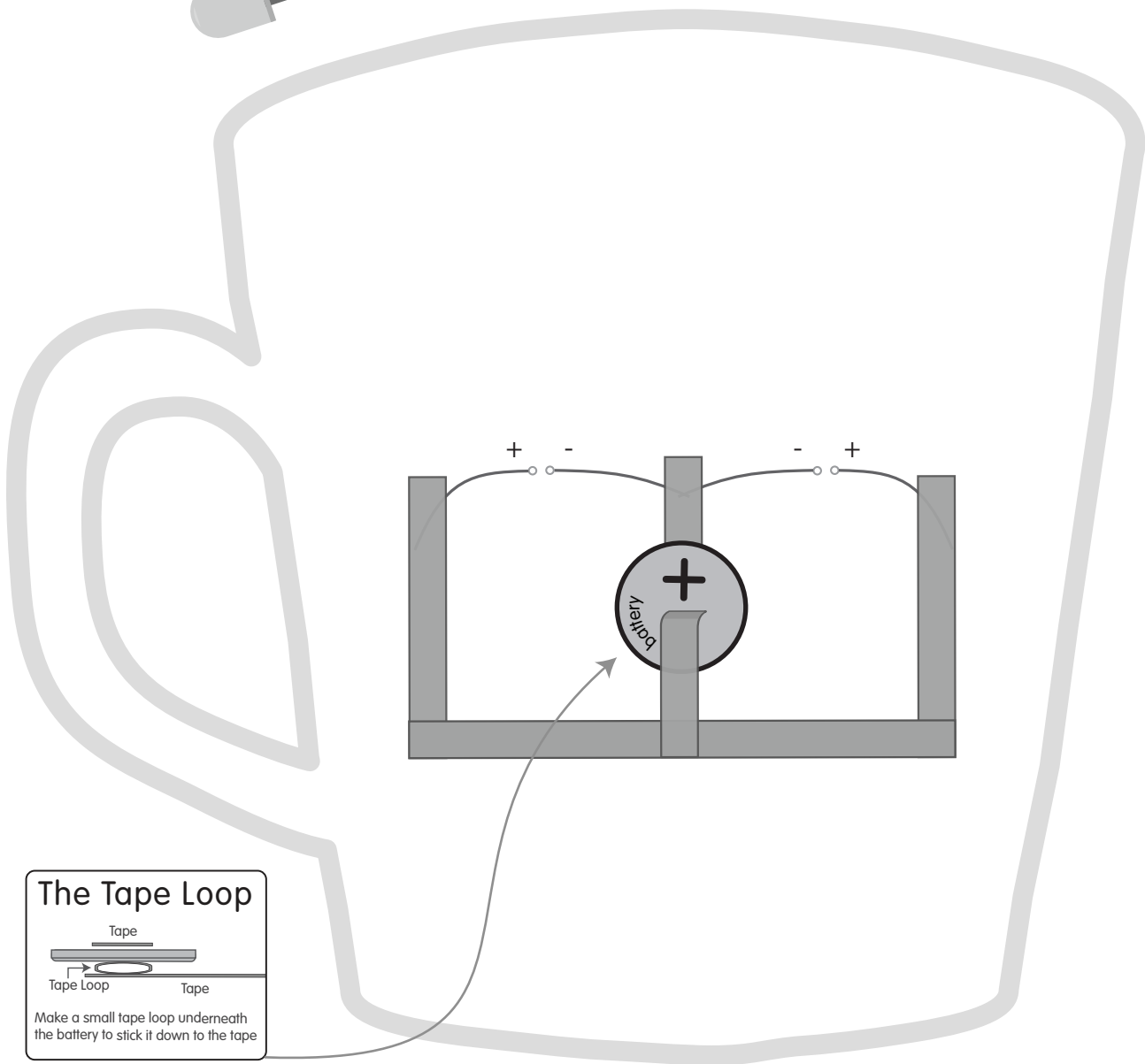
(Make sure you stick the negative side of the battery down.)

7 Add additional pieces of Maker Tape to connect the positive LED legs to the top of the battery.

(Your LEDs should light up as soon as you connect the tape.)



 **Tip!** An LED has a positive leg and a negative leg. The positive leg is longer and the negative leg is shorter.



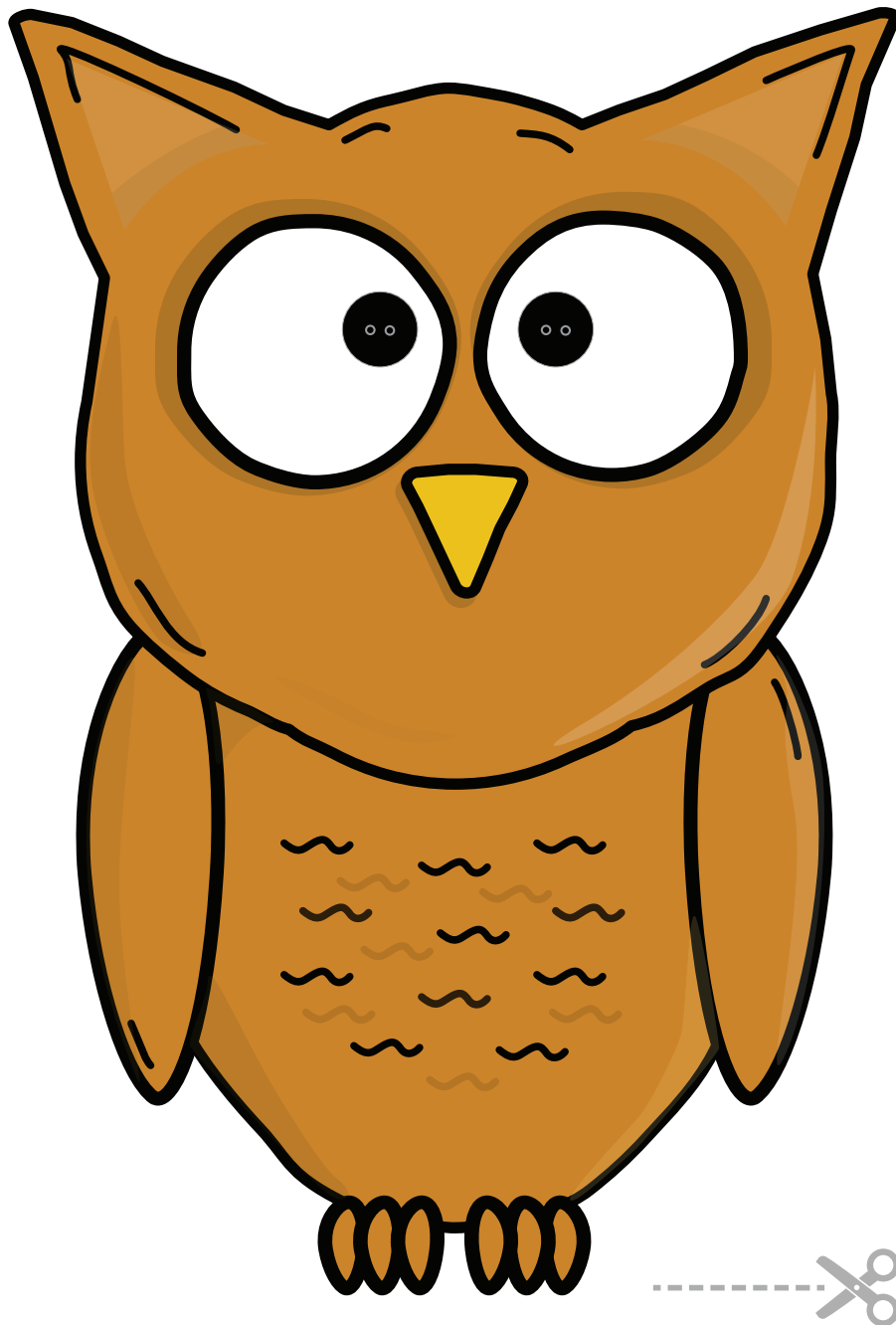
Olivia the Owl

Make a light up owl paper circuit using two LEDs, a CR2032 battery, and some Maker Tape. You can find all these parts in our Paper Circuits Kit.

💡 We recommend printing on a heavier paper like cardstock, but regular weight paper will also work.


💡 You can use any color LED that you like. Different colors might convey different moods. What does Olivia look like with blue eyes? What do red or green eyes look like?

💡 It makes things easier if you can print double sided, but you can just print the front and use the back side as a guide to build your circuit.



1 Cut out the owl.

(For best results cut from the front side in case your print doesn't line up properly with the back.)

 **Note:** If you are using the black & white version you may want to color it before you cut it out.

2 Poke holes through the front for the LED legs.

(We recommend using a safety pin or paper clip.)

3 Insert the LED legs through the front, making sure the negative legs are towards the center.

(The shorter LED leg is the negative one.)

4 Bend the LED legs flat against the back side.

5 Add the center piece of Maker Tape to the LED legs.

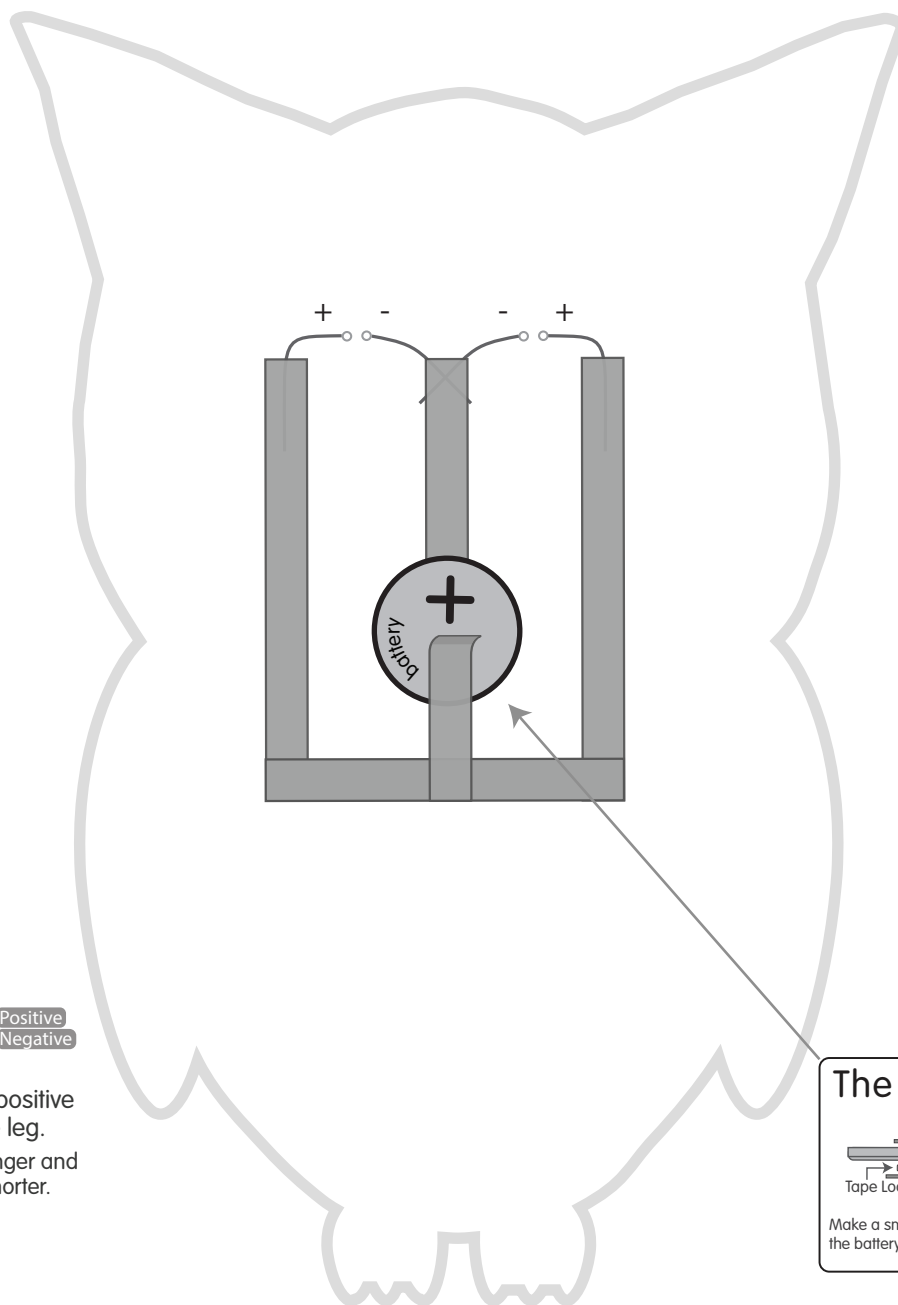
(This will connect the negative legs to the negative side of the battery.)


6 Add a tape loop to the center piece of tape, then stick the battery down to it.

(Make sure you stick the negative side of the battery down.)

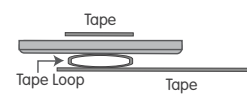
7 Add additional pieces of Maker Tape to connect the positive LED legs to the top of the battery.

(Your LEDs should light up as soon as you connect the tape.)



 **Tip!** An LED has a positive leg and a negative leg. The positive leg is longer and the negative leg is shorter.

The Tape Loop



Make a small tape loop underneath the battery to stick it down to the tape

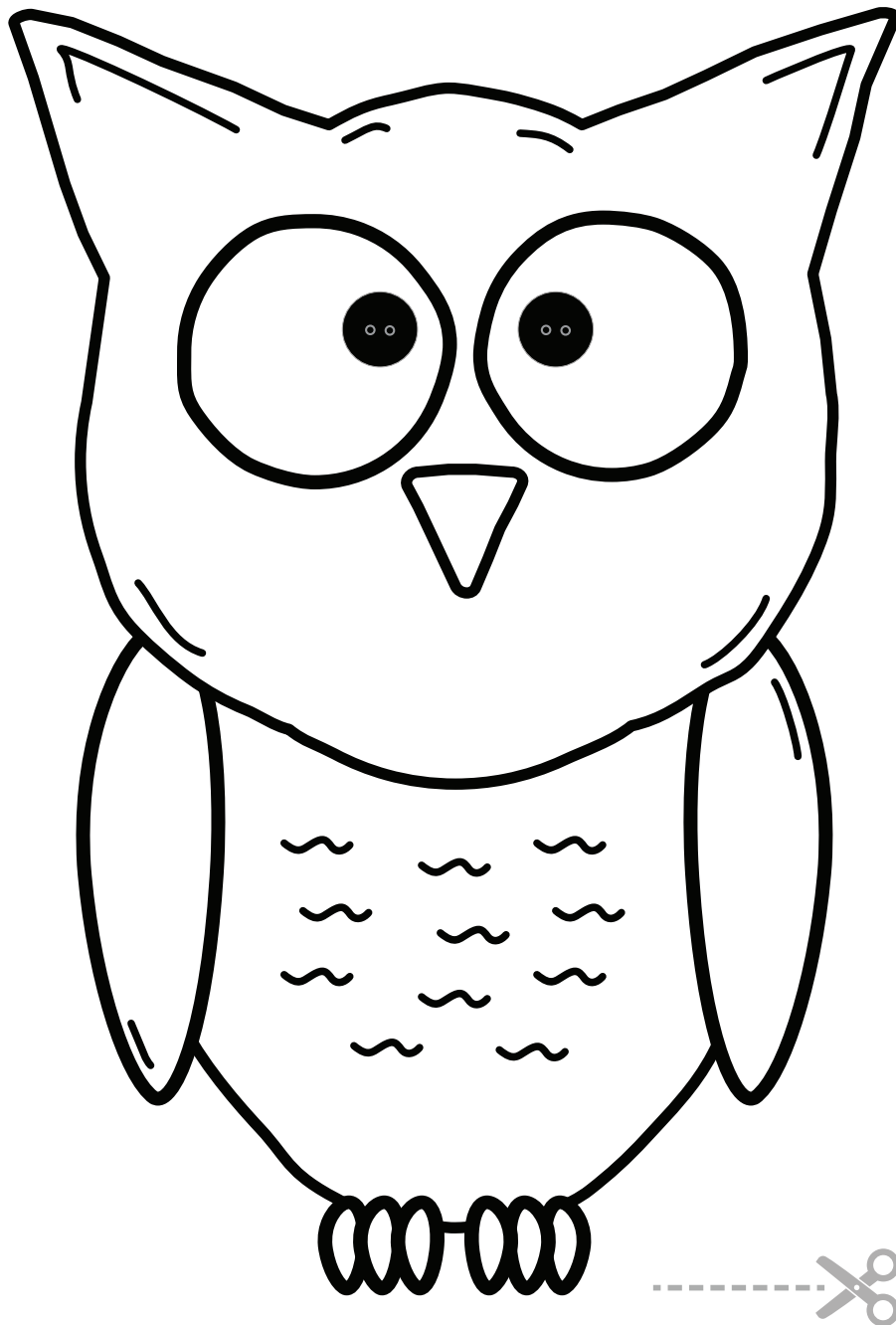
Olivia the Owl

Make a light up owl paper circuit using two LEDs, a CR2032 battery, and some Maker Tape. You can find all these parts in our Paper Circuits Kit.

💡 We recommend printing on a heavier paper like cardstock, but regular weight paper will also work.


💡 You can use any color LED that you like. Different colors might convey different moods. What does Olivia look like with blue eyes? What do red or green eyes look like?

💡 It makes things easier if you can print double sided, but you can just print the front and use the back side as a guide to build your circuit.



1 Cut out the owl.

(For best results cut from the front side in case your print doesn't line up properly with the back.)

 **Note:** If you are using the black & white version you may want to color it before you cut it out.

2 Poke holes through the front for the LED legs.

(We recommend using a safety pin or paper clip.)

3 Insert the LED legs through the front, making sure the negative legs are towards the center.

(The shorter LED leg is the negative one.)

4 Bend the LED legs flat against the back side.

5 Add the center piece of Maker Tape to the LED legs.

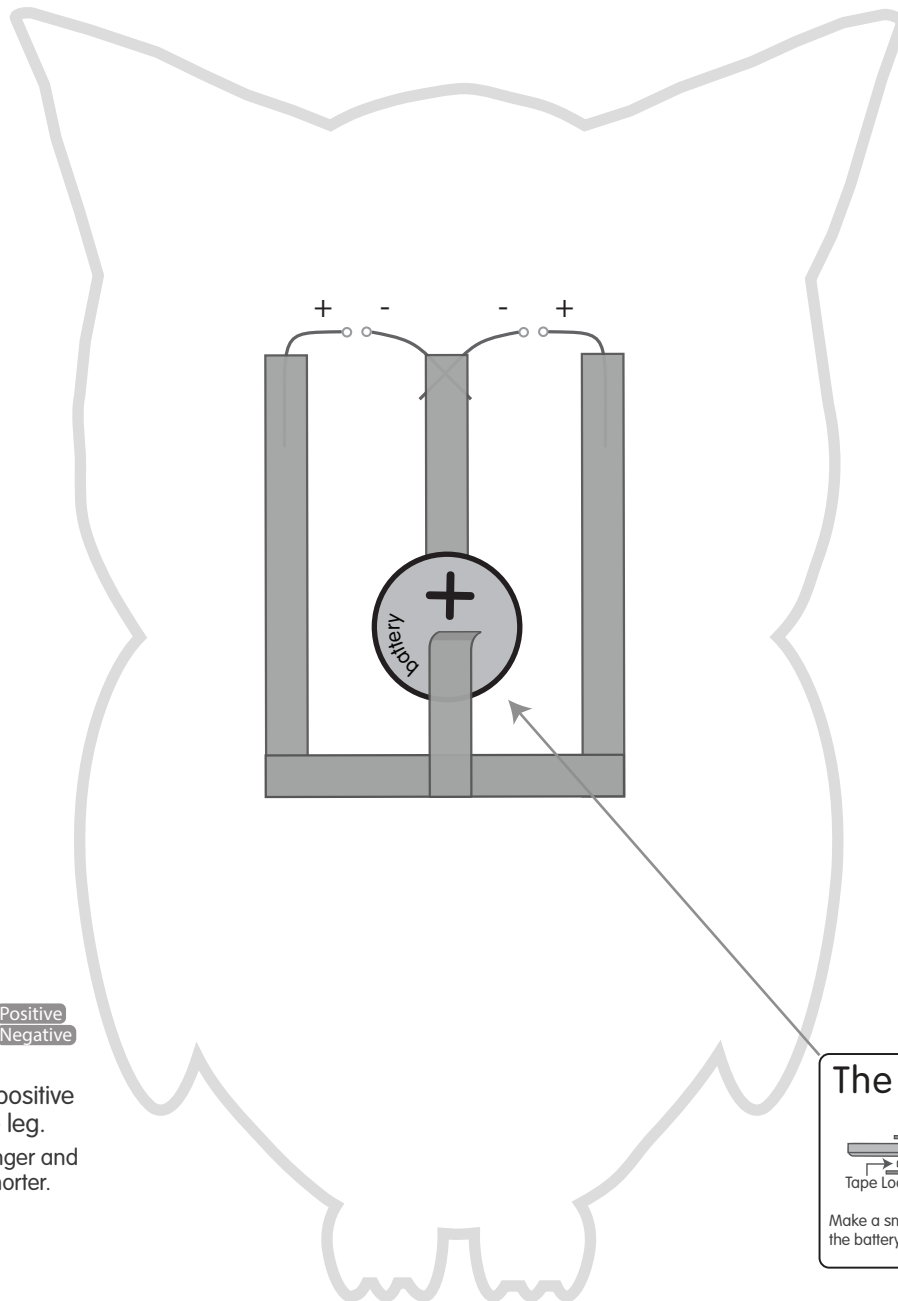
(This will connect the negative legs to the negative side of the battery.)


6 Add a tape loop to the center piece of tape, then stick the battery down to it.

(Make sure you stick the negative side of the battery down.)

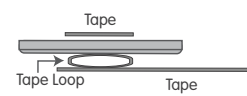
7 Add additional pieces of Maker Tape to connect the positive LED legs to the top of the battery.

(Your LEDs should light up as soon as you connect the tape.)



 **Tip!** An LED has a positive leg and a negative leg. The positive leg is longer and the negative leg is shorter.

The Tape Loop



Make a small tape loop underneath the battery to stick it down to the tape

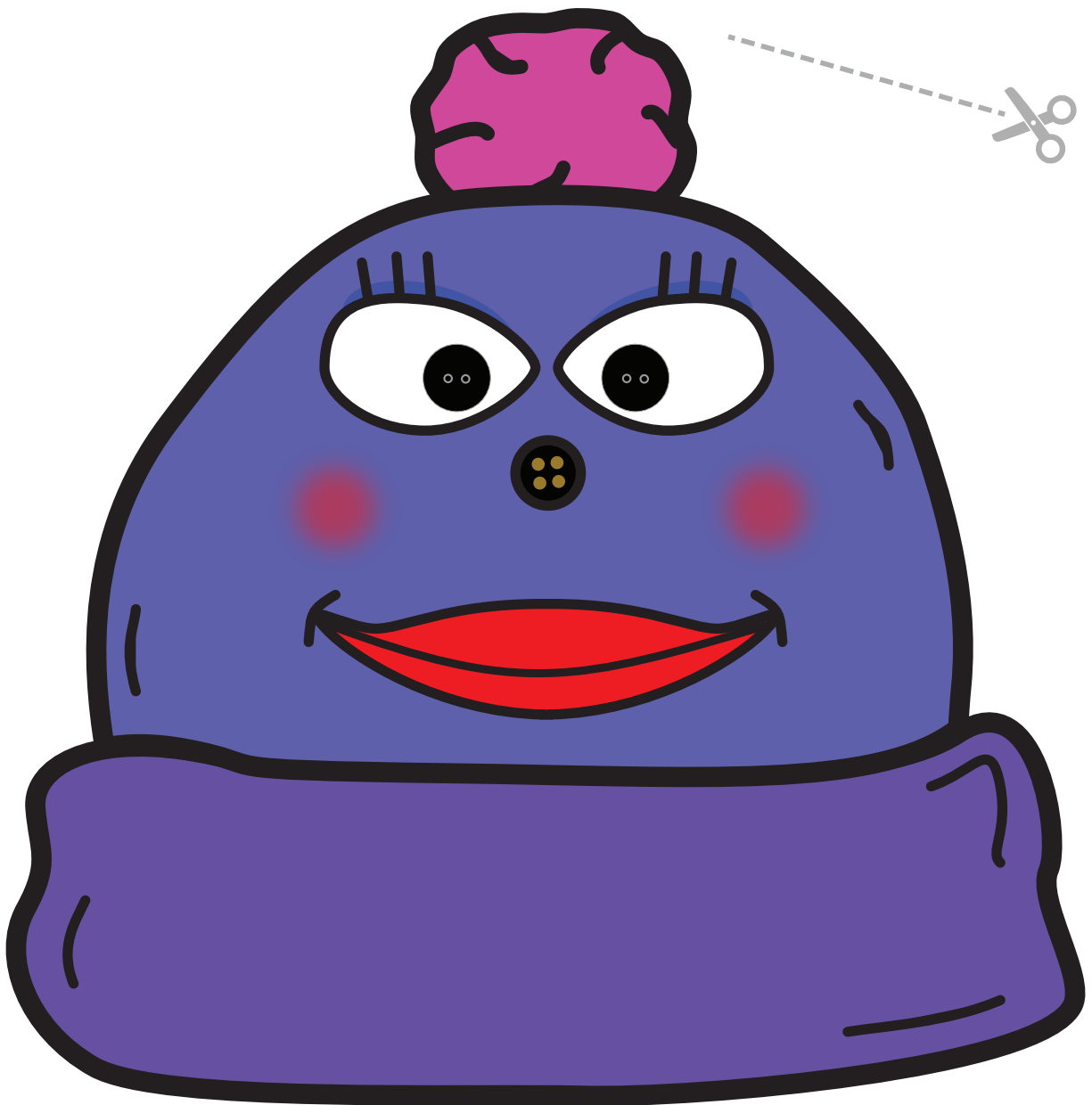
Hailey the Hat

Make a light up hat paper circuit using two LEDs, a CR2032 battery, and some Maker Tape. You can find all these parts in our Paper Circuits Kit.

💡 We recommend printing on a heavier paper like cardstock, but regular weight paper will also work.


💡 You can use any color LED that you like. Different colors might convey different moods. What does Hailey look like with blue eyes? What do red or green eyes look like?

💡 It makes things easier if you can print double sided, but you can just print the front and use the back side as a guide to build your circuit.



1 Cut out the hat.

(For best results cut from the front side in case your print doesn't line up properly with the back.)

 **Note:** If you are using the black & white version you may want to color it before you cut it out.

2 Poke holes through the front for the LED legs.

(We recommend using a safety pin or paper clip.)

3 Insert the LED legs through the front, making sure the negative legs are towards the center.

(The shorter LED leg is the negative one.)

4 Bend the LED legs flat against the back side.

5 Add the center piece of Maker Tape to the LED legs.

(This will connect the negative legs to the negative side of the battery.)


6 Add a tape loop to the center piece of tape, then stick the battery down to it.

(Make sure you stick the negative side of the battery down.)

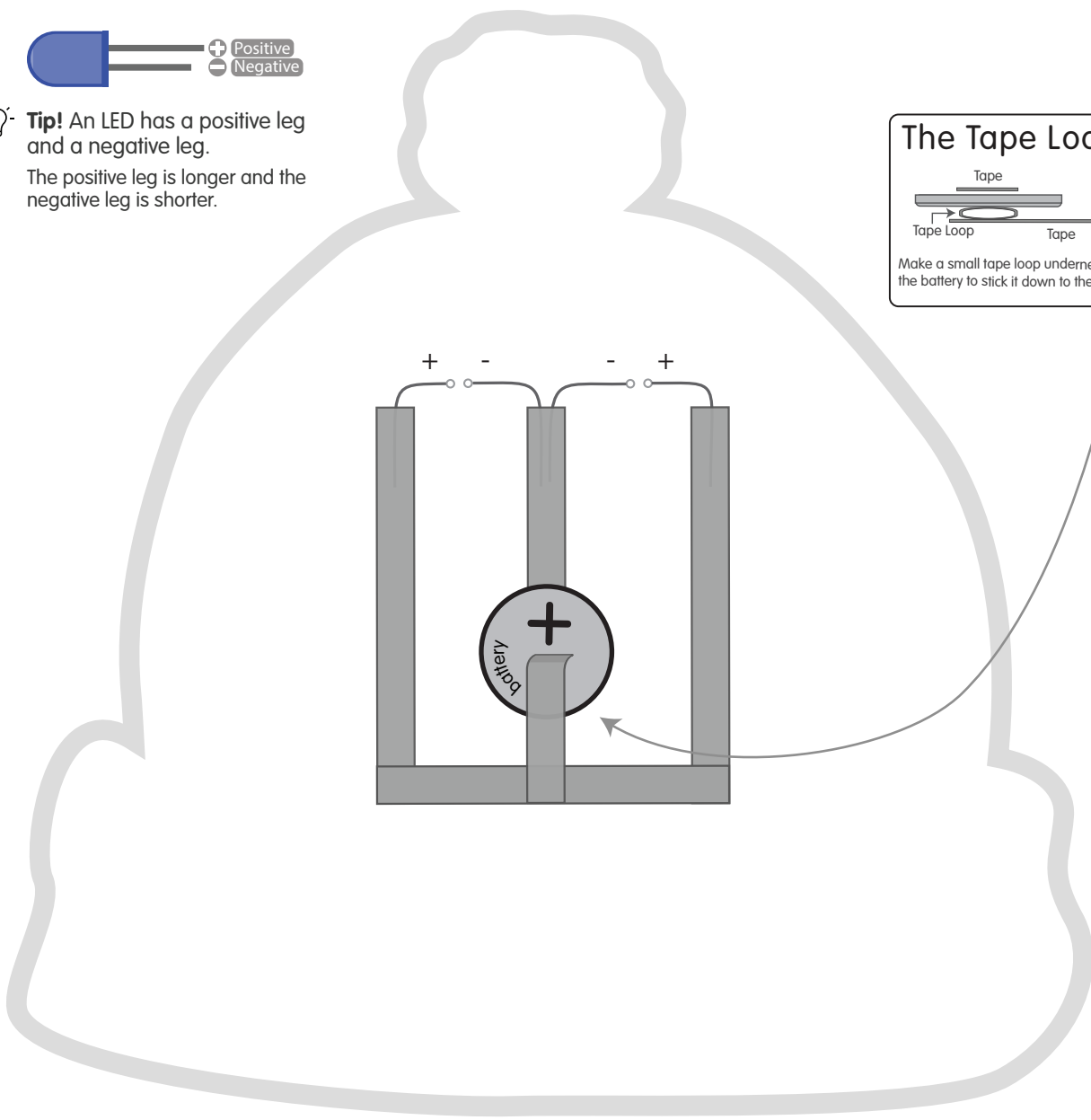
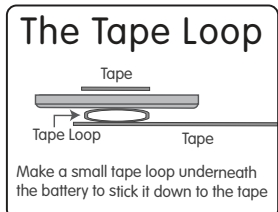
7 Add additional pieces of Maker Tape to connect the positive LED legs to the top of the battery.

(Your LEDs should light up as soon as you connect the tape.)



 **Tip!** An LED has a positive leg and a negative leg.

The positive leg is longer and the negative leg is shorter.



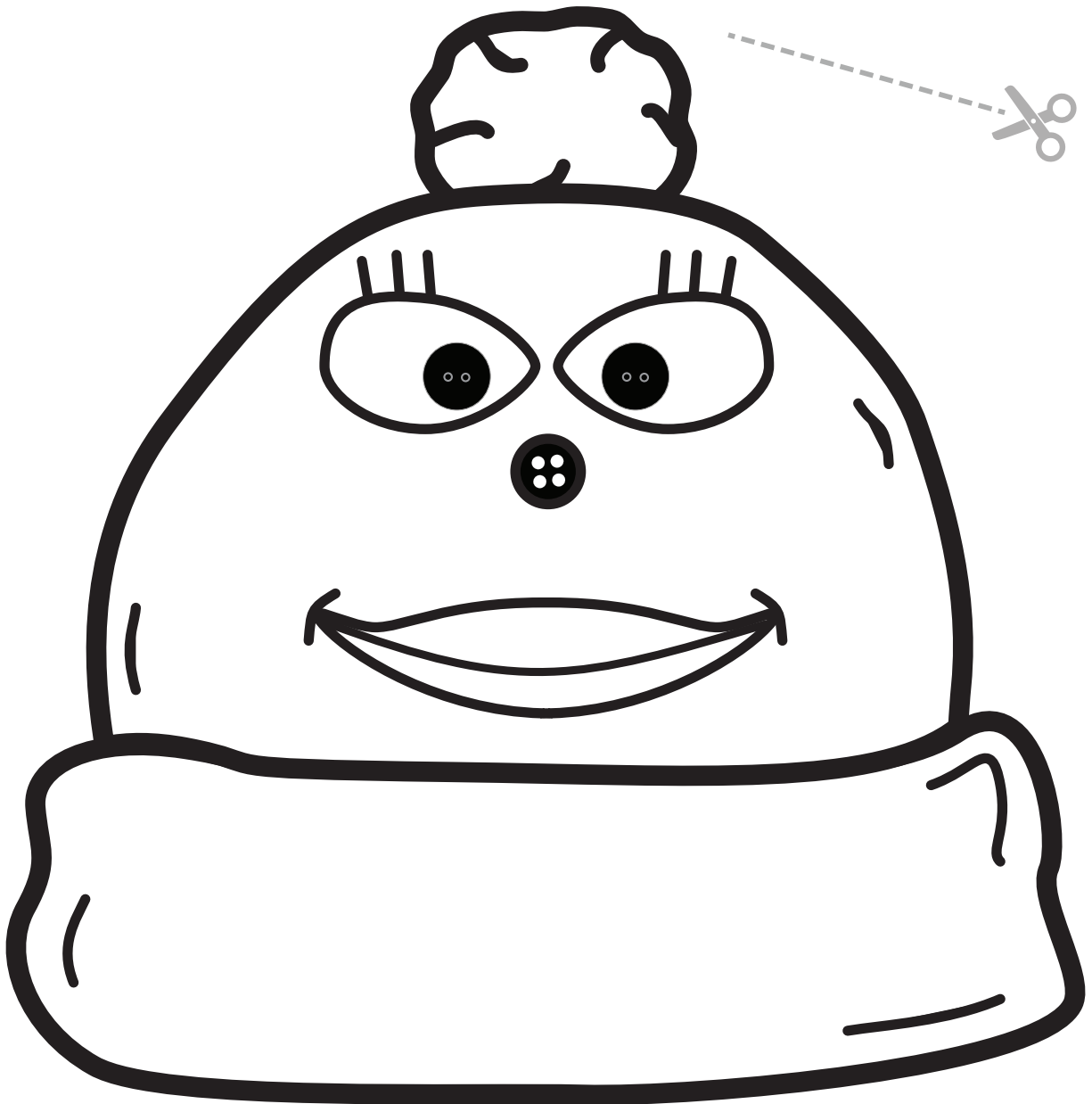
Hailey the Hat

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💡 We recommend printing on a heavier paper like cardstock, but regular weight paper will also work.


💡 You can use any color LED that you like. Different colors might convey different moods. What does Hailey look like with blue eyes? What do red or green eyes look like?

💡 It makes things easier if you can print double sided, but you can just print the front and use the back side as a guide to build your circuit.



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(The shorter LED leg is the negative one.)

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5 Add the center piece of Maker Tape to the LED legs.

(This will connect the negative legs to the negative side of the battery.)


6 Add a tape loop to the center piece of tape, then stick the battery down to it.

(Make sure you stick the negative side of the battery down.)

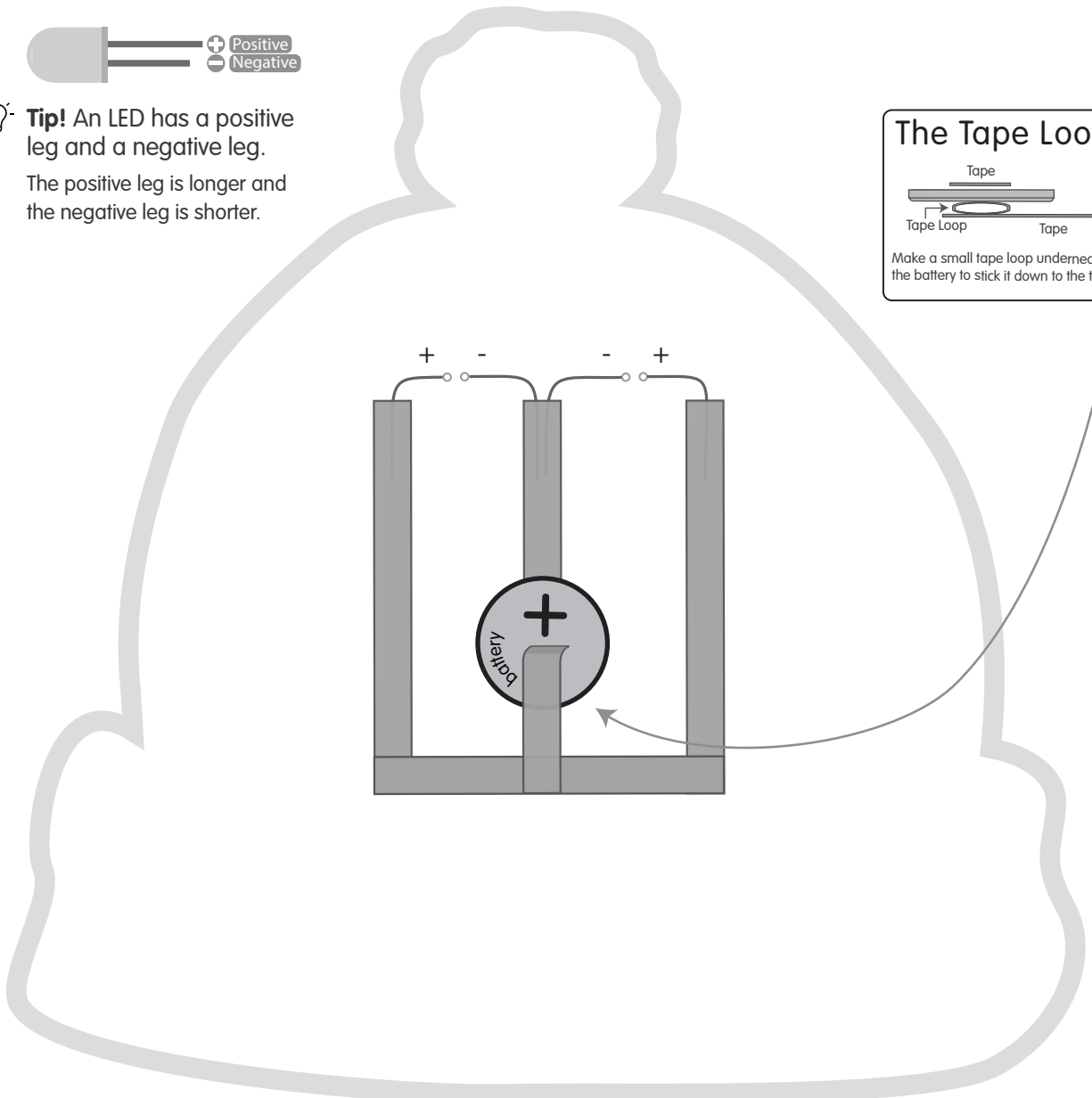
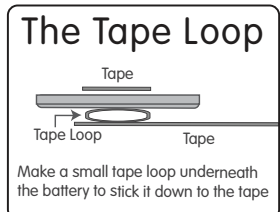
7 Add additional pieces of Maker Tape to connect the positive LED legs to the top of the battery.

(Your LEDs should light up as soon as you connect the tape.)



 **Tip!** An LED has a positive leg and a negative leg.

The positive leg is longer and the negative leg is shorter.



Stella Star


Make a light up star paper circuit using two LEDs, a CR2032 battery, and some Maker Tape. You can find all these parts in our Paper Circuits Kit.

💡 We recommend printing on a heavier paper like cardstock, but regular weight paper will also work.

💡 You can use any color LED that you like. Different colors might convey different moods. What does Stella look like with blue eyes? What do red or green eyes look like?


💡 It makes things easier if you can print double sided, but you can just print the front and use the back side as a guide to build your circuit.

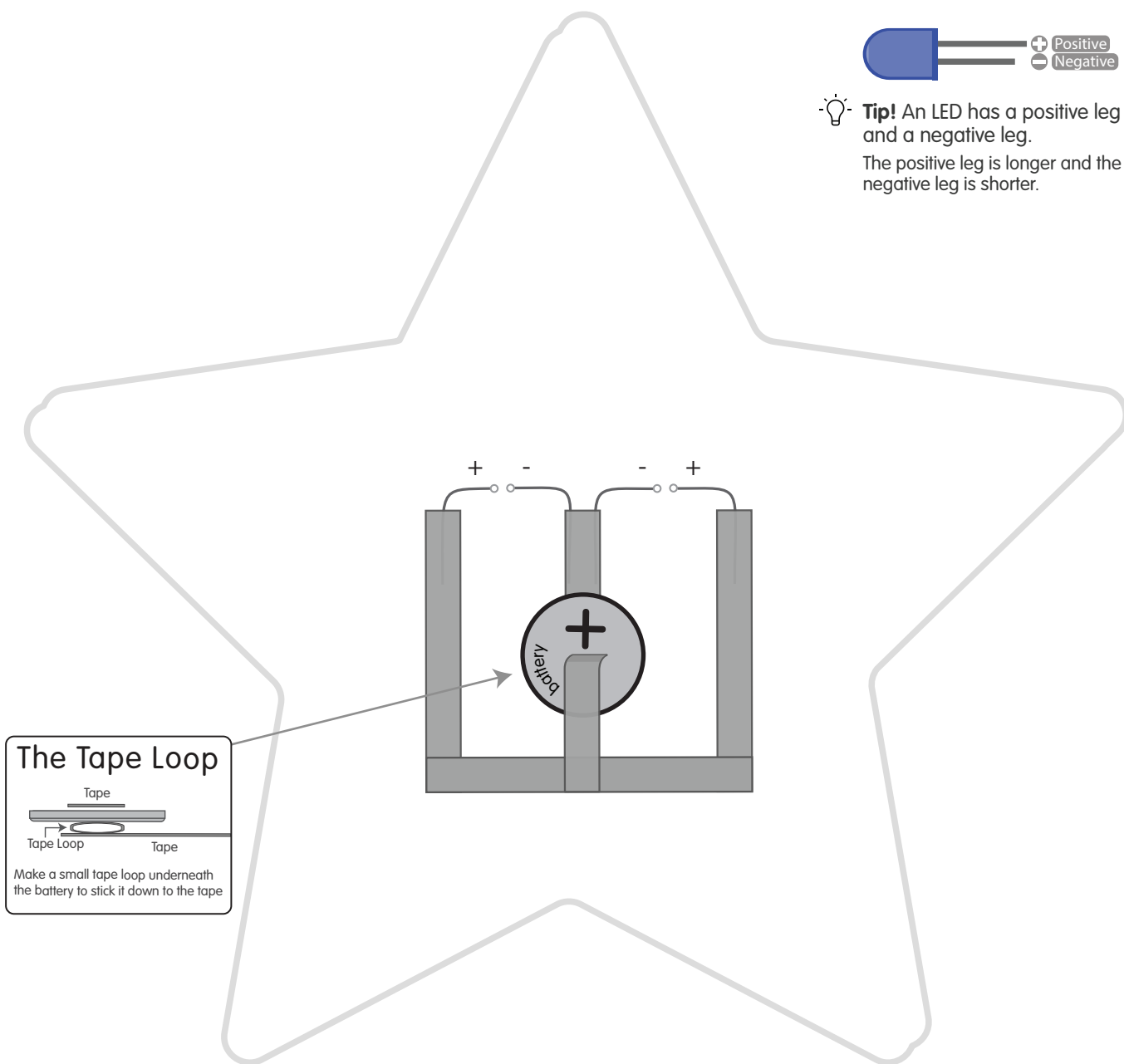


- 1 Cut out the star.**
(For best results cut from the front side in case your print doesn't line up properly with the back.)
-  **Note:** If you are using the black & white version you may want to color it before you cut it out.
- 2 Poke holes through the front for the LED legs.**
(We recommend using a safety pin or paper clip.)
- 3 Insert the LED legs through the front, making sure the negative legs are towards the center.**
(The shorter LED leg is the negative one.)

- 4 Bend the LED legs flat against the back side.**
- 5 Add the center piece of Maker Tape to the LED legs.**
(This will connect the negative legs to the negative side of the battery.)
- 6 Add a tape loop to the center piece of tape, then stick the battery down to it.**
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 **Tip!** An LED has a positive leg and a negative leg. The positive leg is longer and the negative leg is shorter.



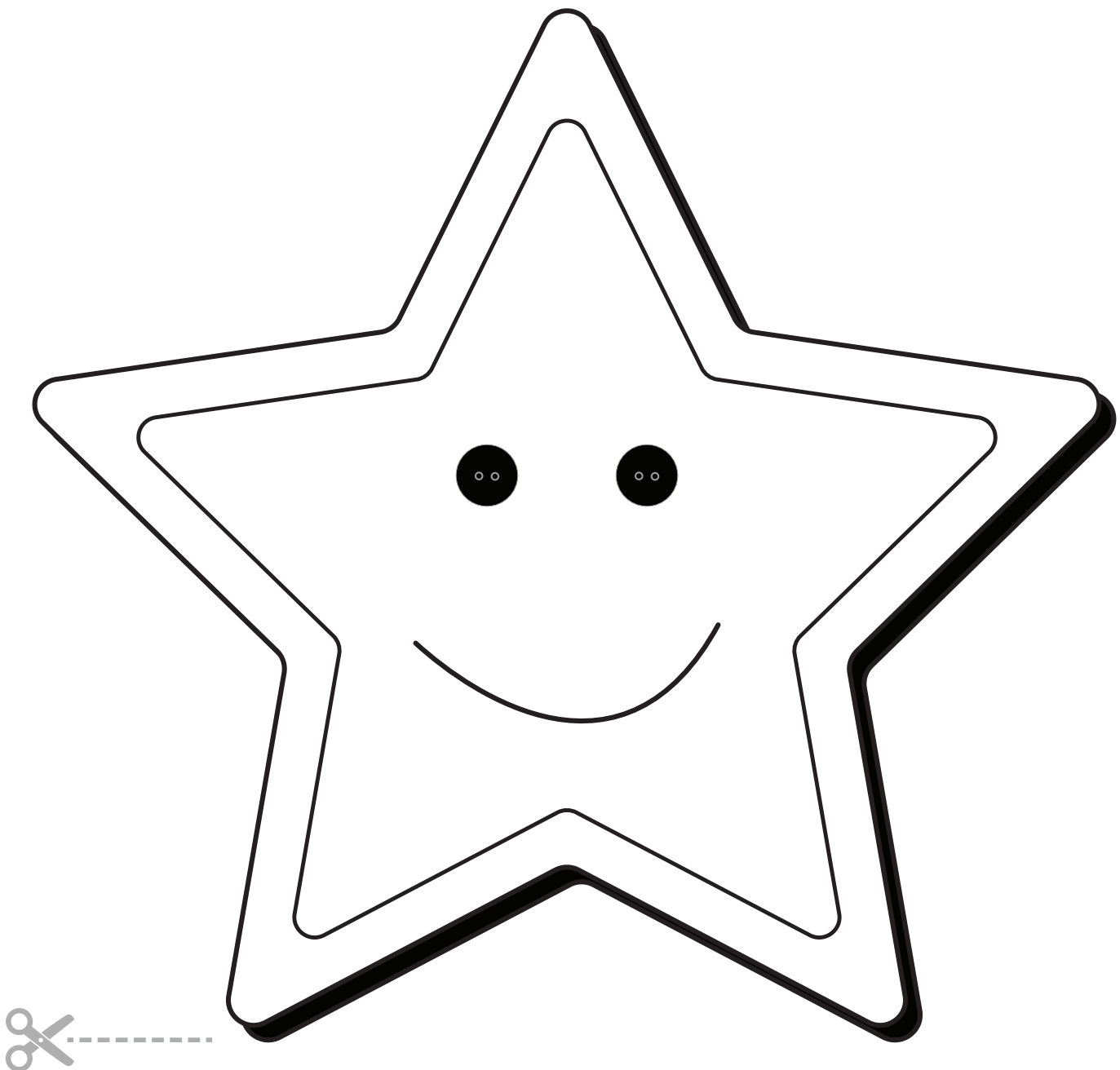
Stella Star


Make a light up star paper circuit using two LEDs, a CR2032 battery, and some Maker Tape. You can find all these parts in our Paper Circuits Kit.

💡 We recommend printing on a heavier paper like cardstock, but regular weight paper will also work.

💡 You can use any color LED that you like. Different colors might convey different moods. What does Stella look like with blue eyes? What do red or green eyes look like?


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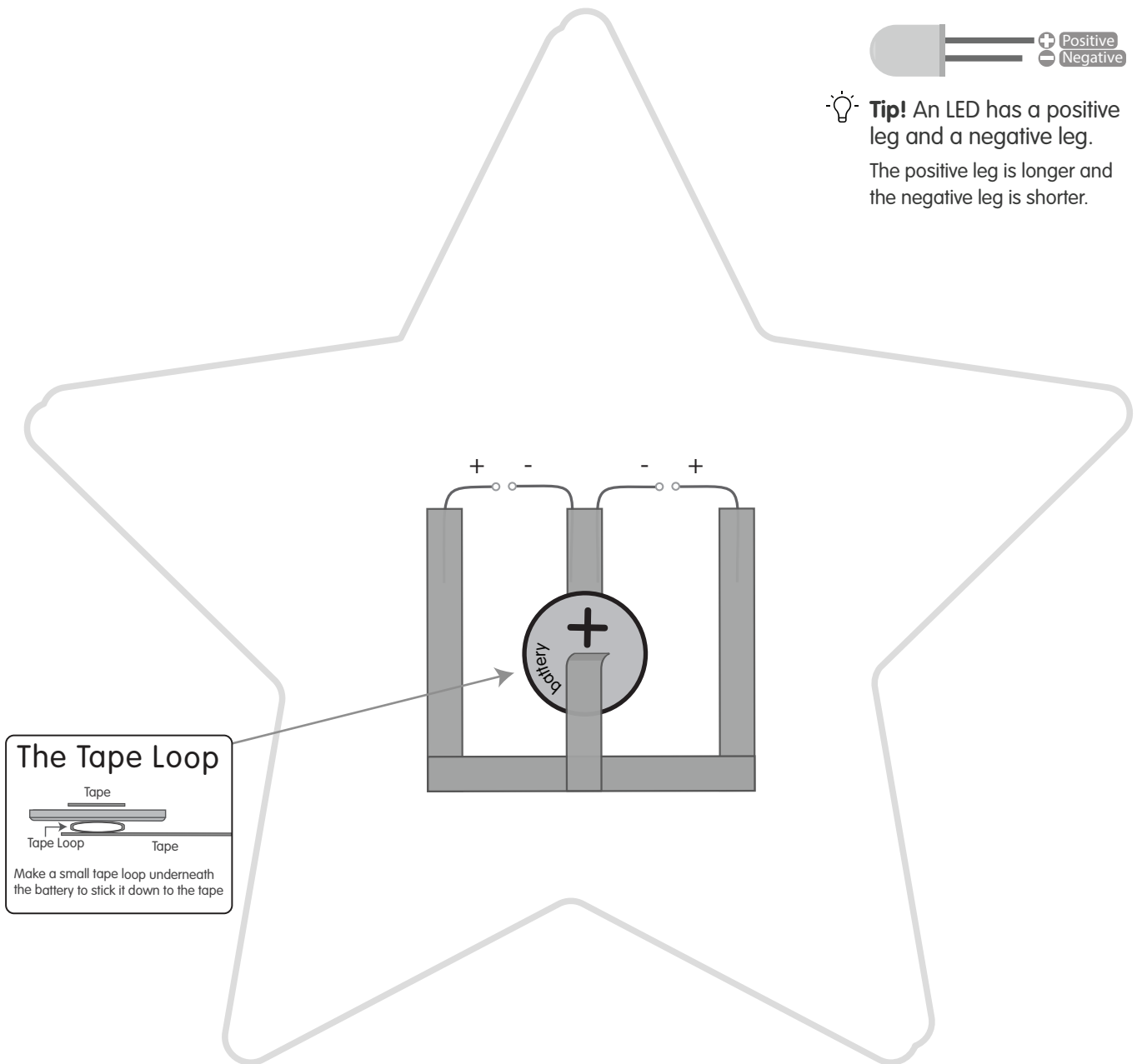


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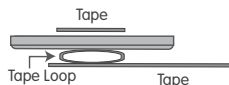
- 4 Bend the LED legs flat against the back side.**
- 5 Add the center piece of Maker Tape to the LED legs.**
(This will connect the negative legs to the negative side of the battery.)
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(Make sure you stick the negative side of the battery down.)
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(Your LEDs should light up as soon as you connect the tape.)



 **Tip!** An LED has a positive leg and a negative leg. The positive leg is longer and the negative leg is shorter.



The Tape Loop



Make a small tape loop underneath the battery to stick it down to the tape

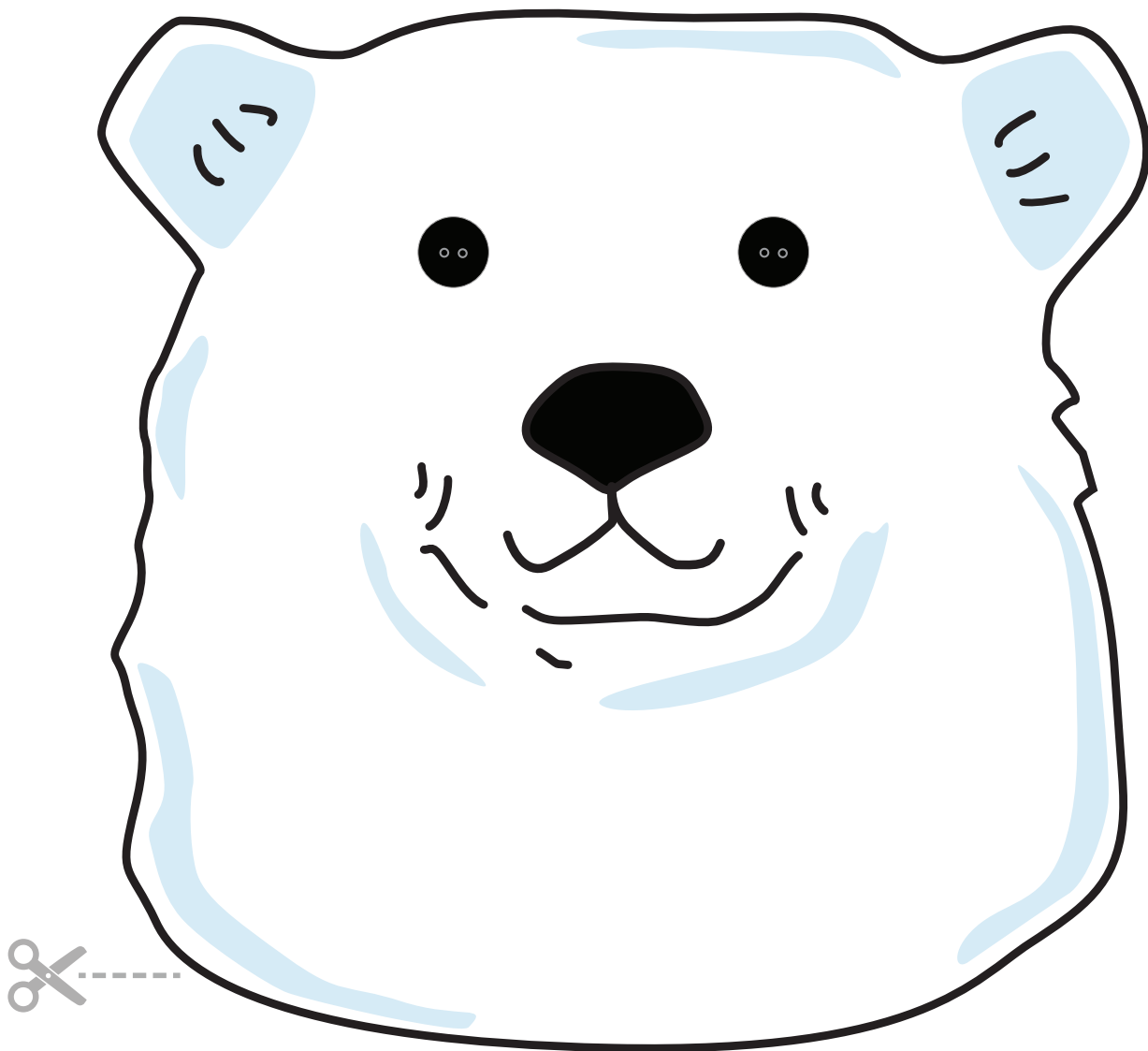
Polar Bear

Make a festive light up polar bear papercraft using two LEDs, a CR2032 battery, and some Maker Tape.

💡 We recommend printing the polar bear on a heavier paper like cardstock.

💡 It makes things easier if you can print double sided, but you can just print the front and use the back side as a guide to build your circuit.

💡 We like blue LEDs for our polar bear, but you can use any color LED that you like. Different colors convey different moods. What do red or green eyes look like?

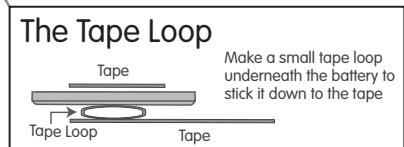
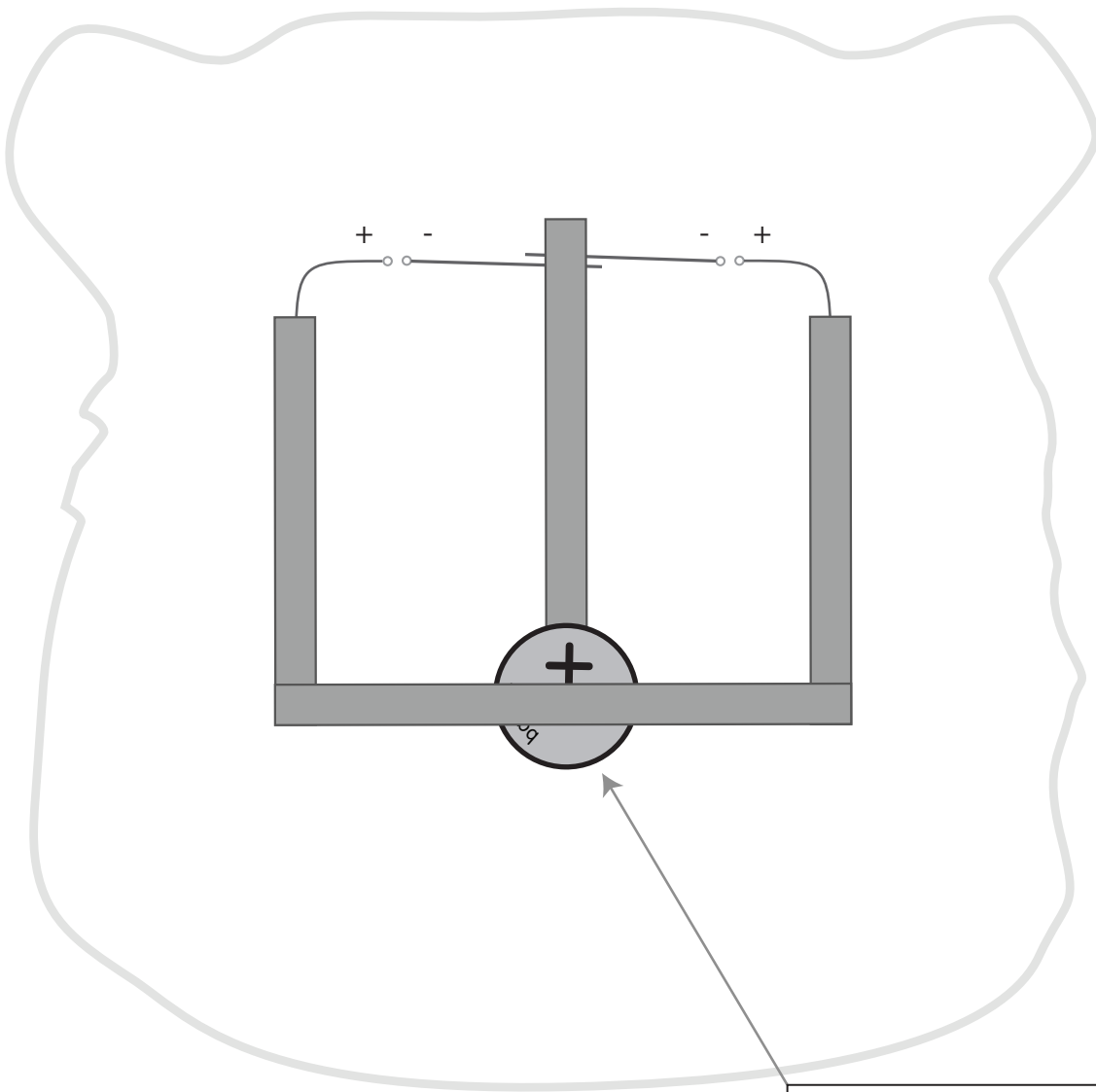


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Polar Bear

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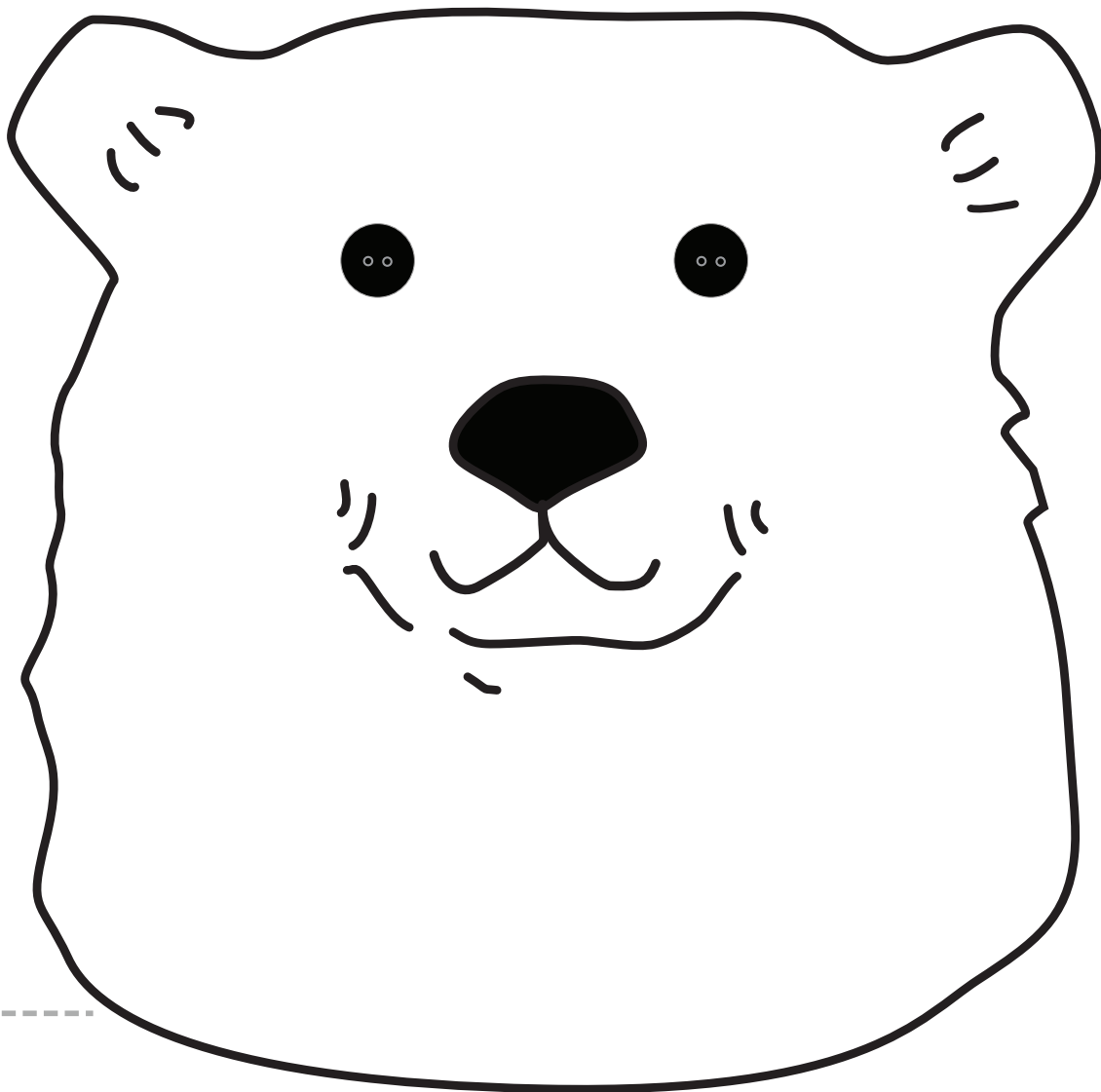
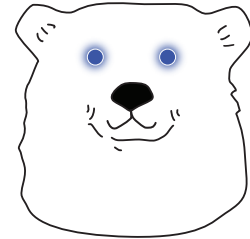
Polar Bear

Make a festive light up polar bear papercraft using two LEDs, a CR2032 battery, and some Maker Tape.

💡 We recommend printing the polar bear on a heavier paper like cardstock.

💡 It makes things easier if you can print double sided, but you can just print the front and use the back side as a guide to build your circuit.

💡 We like blue LEDs for our polar bear, but you can use any color LED that you like. Different colors convey different moods. What do red or green eyes look like?

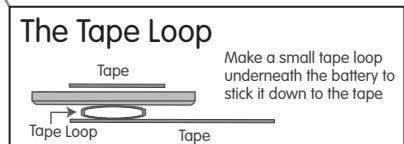
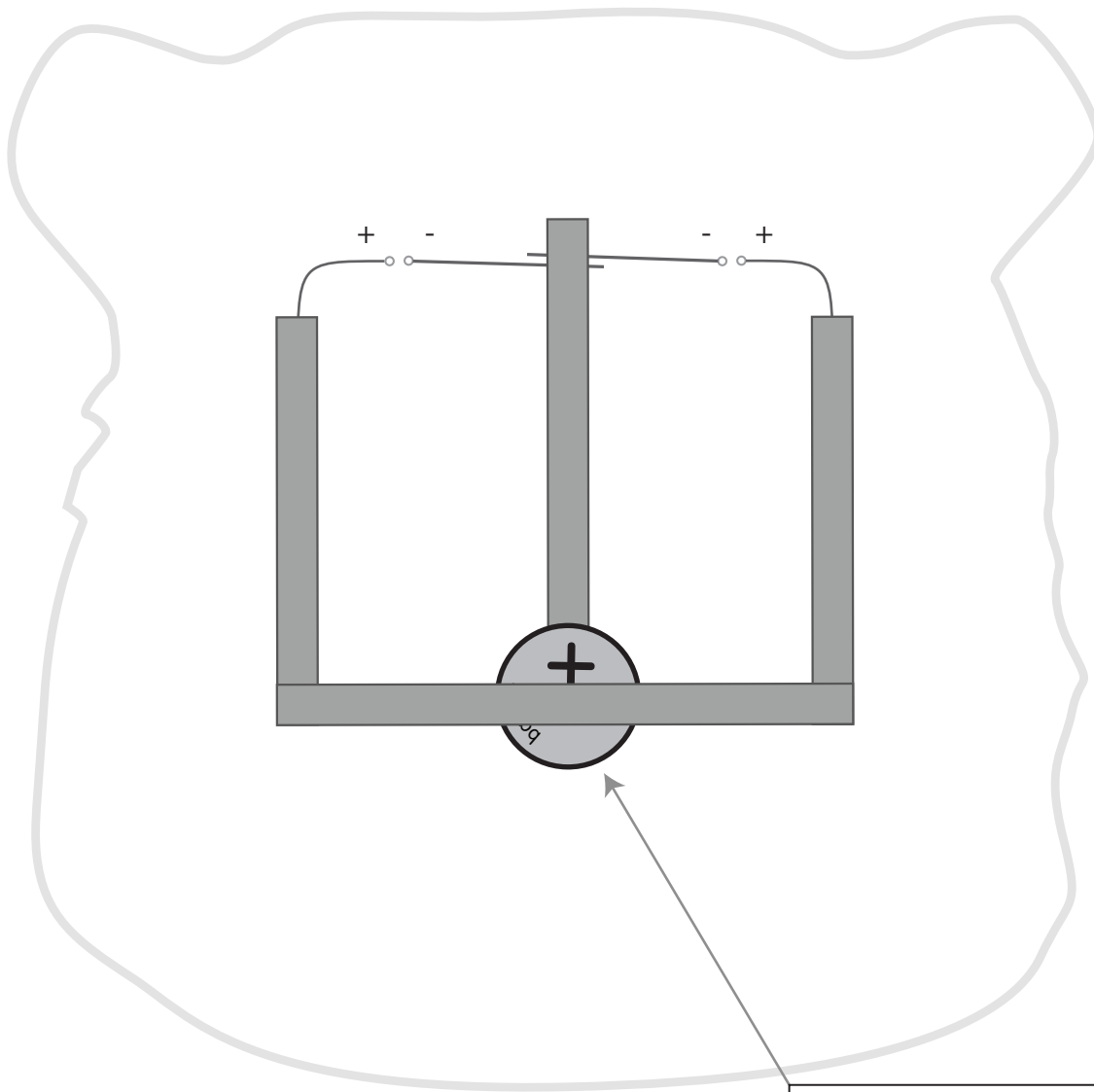


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Polar Bear

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- 7 Add additional pieces of Maker Tape to connect the positive LED legs to the top of the battery.**
(Your LEDs should light up as soon as you connect the tape.)



More Projects & Inspiration

Using Maker Tape allows you to build circuits on more surfaces than just paper!

This makes it a great material to design circuits on top of felt or other craft materials, like the LED bracelet below. It works great on cardboard, tabletops, even glass windows. With the same paper circuits techniques, you can build all kinds of projects! The possibilities are endless.



If you need paper circuits parts or supplies, pick up the Paper Circuits Kit from BrownDogGadgets.com

Light-Up Cards (Maker Tape, LEDs, Batteries, and Paper)



Light-Up Heart



Laser Cat



Birthday Candles



Light-Up Tree

Robots and Wearables (Maker Tape, LEDs, Motors, Batteries, Paper, Felt)



Tree Bracelet



Motor Robot Buddy



Motor Robot Vacuum



Monster Bracelet

These are just some of the projects to try next! Check out all of our free project templates and guides available to download at www.BrownDogGadgets.com



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Learn, Create, and Inspire—Even on a Budget

Creating a project from scratch can be difficult for the casual builder. Finding the right directions, the right parts, and the right tools—all at the right price—can be a major hurdle.

At Brown Dog Gadgets, we've created kits and projects for creators of all ages and budgets. Follow our step-by-step project directions and learn more with our classroom resources or find individual parts to dream up your own creations. No matter how or what you create, our products can help you learn the basics of electronics, circuitry, and solar energy.

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