



BROWN DOG *Gadgets*

TUBES OF TERROR



3D Halloween Circuitry Projects

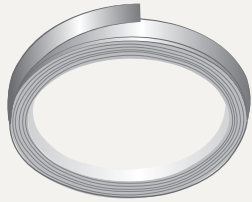
ABOUT THESE TUBES

Who knew cylinders could be so terrifying!? We're kidding, of course. However, every project in this Halloween E-Book DOES start with the same shape. Tubes or cylinders are just one of many basic 3D shapes you can make with paper and we turned them into fun, spooky characters that light up and move! Using the printable templates provided and materials from your Origami Circuits Kit, you can make them too!

PROJECT INDEX

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- Page 3 Materials and Printing Instructions
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- Pages 6-7 Vampire Tube Uncolored
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- Pages 10-11 Tube O Lantern and Frankentube Uncolored
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- Pages 14-15 Ghost Tube Uncolored
- Page 16 Stubby Tube Templates
- Page 17 Ping Pong Ball Topper Instructions
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WHAT YOU'LL NEED



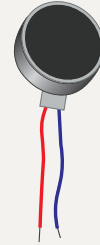
A. 1/4" Maker Tape



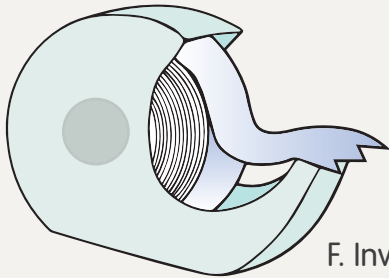
B. CR2032 Battery



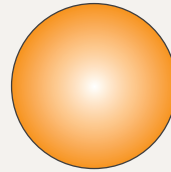
C. Jumbo LED



D. Self-Stick Motor



F. Invisible Tape



E. Colored Ping Pong Balls

All projects in this guide use different combinations of these four components. Look for which ones are used below each project's title.

You will also need the following tools

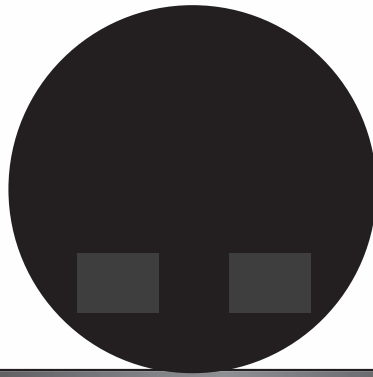
- Scissors
- Hot glue Gun/Glue
- Xacto knife
- Black Permanent Marker

TO BEGIN

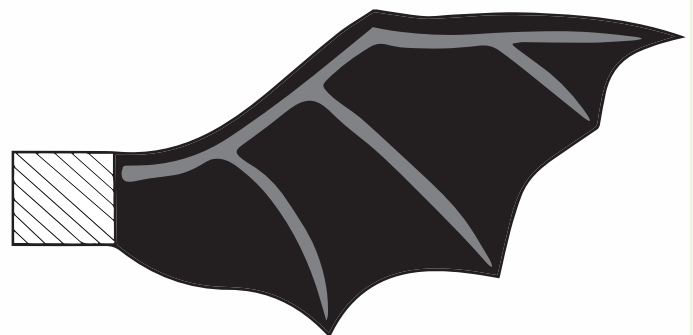
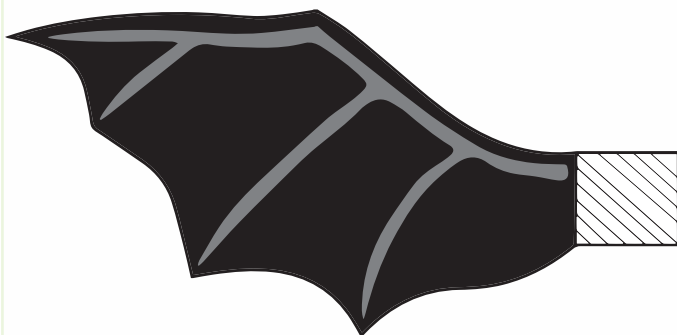
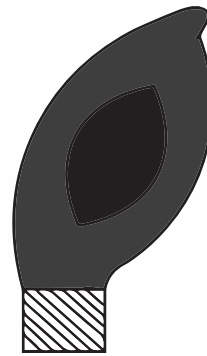
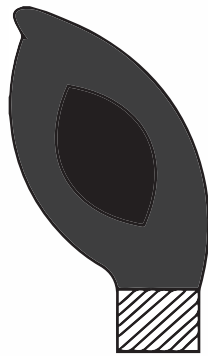
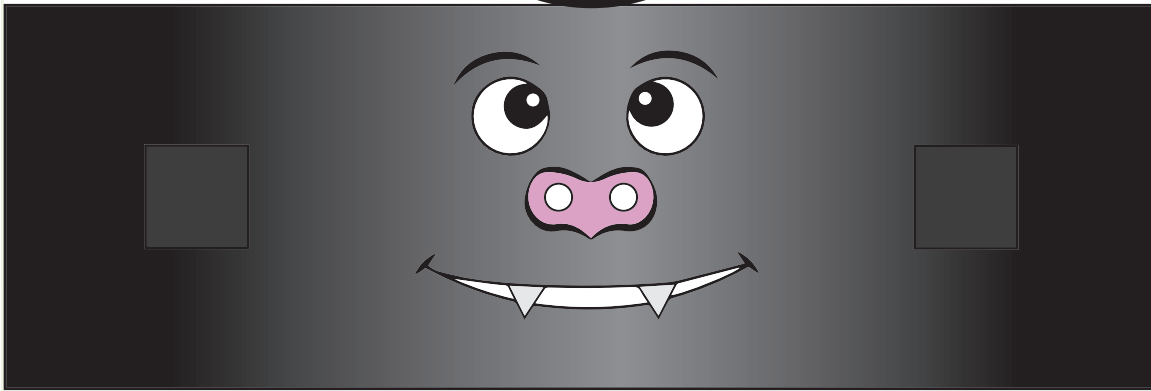
- **Find** the pages of the project you want to make.
- **Use** your choice of paper (we prefer 100# cardstock).
- **Print** those pages double-sided EXCEPT the Stubby Tube with Ping Pong Ball Topper (print those two individually).
- **Gather** materials and tools needed.
- **Follow** the instructions & circuit diagram on the template.

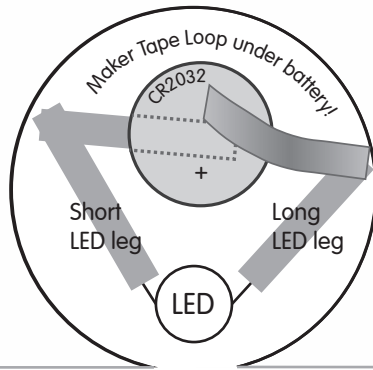
Vampire Tube

Materials Needed:
A,B,C,F

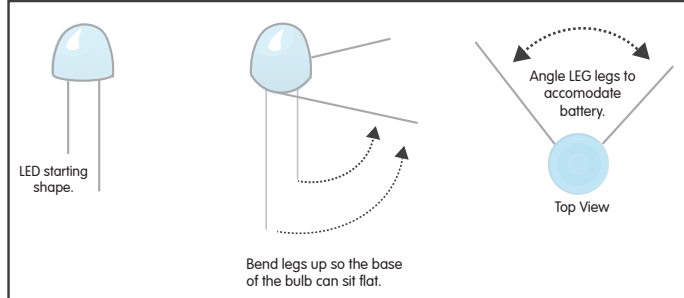


- Use a scissors to cut out your shape taking care to leave the circular cap attached to the lower rectangle.
- Use an Xacto knife to cut out the white parts.
- Curl into a tube shape and secure back seam with a piece of transparent tape.
- Follow diagram on back of circle to assemble light circuit.
- Fold tabs of ears & wings/glue in place.



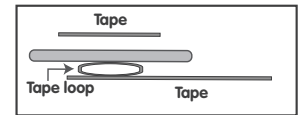


Preparing the LED legs



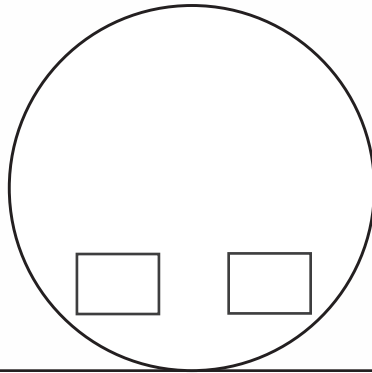
*Stick tape to battery to turn on; peel back to turn off.

The Tape Loop

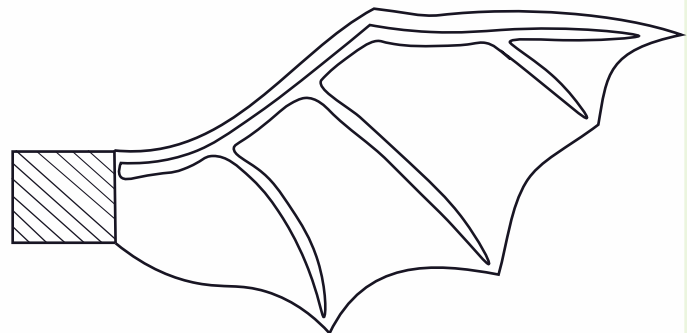
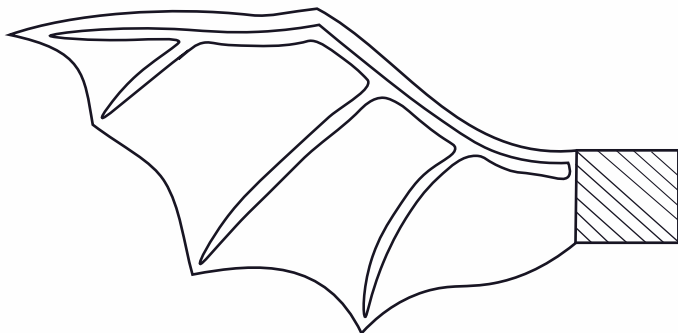
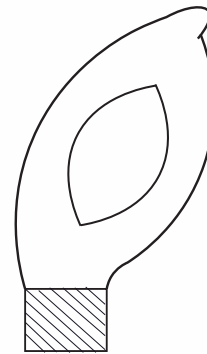
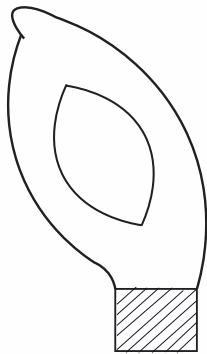
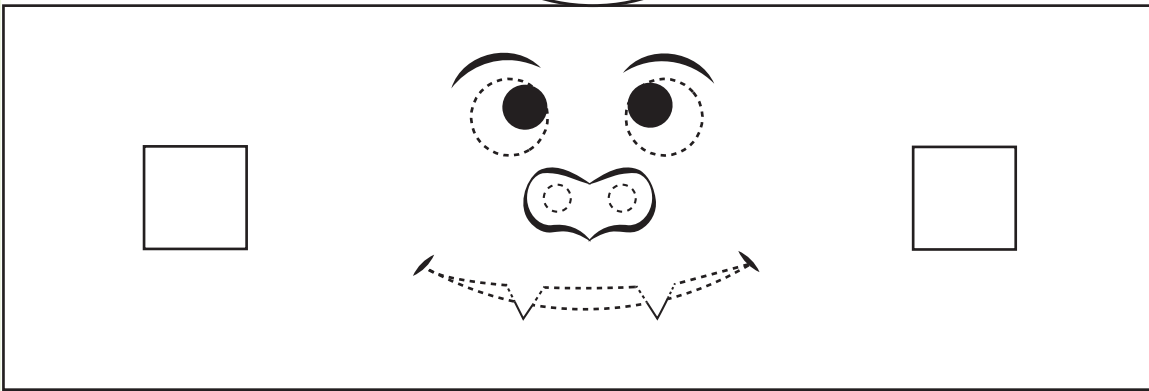


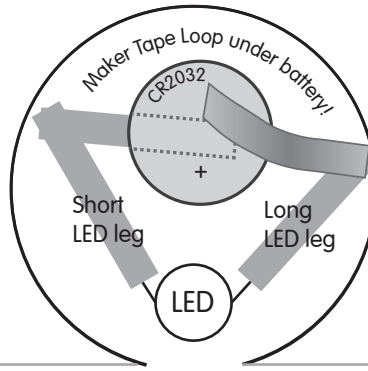
Vampire Tube

Materials Needed:
A,B,C,F

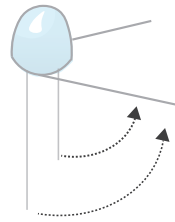


- Use a scissors to cut out your shape taking care to leave the circular cap attached to the lower rectangle/ Color as you wish.
- Use an Xacto knife to cut out the dotted parts.
- Curl into a tube shape and secure back seam with a piece of transparent tape.
- Follow diagram on back of circle to assemble light circuit.
- Fold tabs of ears & wings/glue in place.

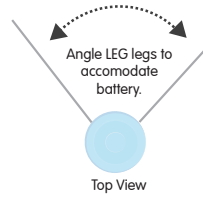




Preparing the LED legs

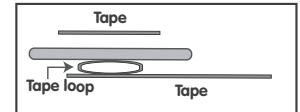


Bend legs up so the base of the bulb can sit flat.



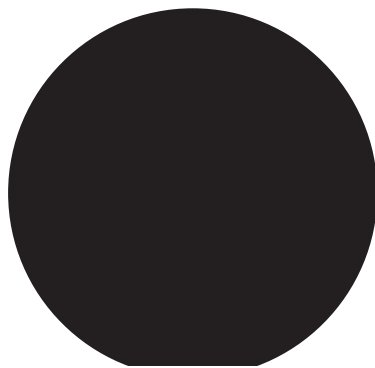
*Stick tape to battery to turn on; peel back to turn off.

The Tape Loop



Franken Tube

Materials Needed:
A,B,C,F

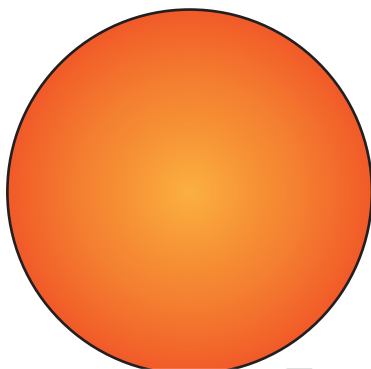


- Use a scissors to cut out your shape taking care to leave the circular cap attached to the lower rectangle.
- Use an Xacto knife to cut out the white parts.
- Curl into a tube shape and secure back edge with a piece of transparent tape.
- Follow diagram on back of circle to assemble light circuit.



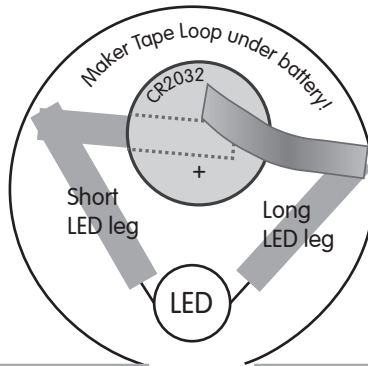
Tube -O- Lantern

Materials Needed:
A,B,C,F

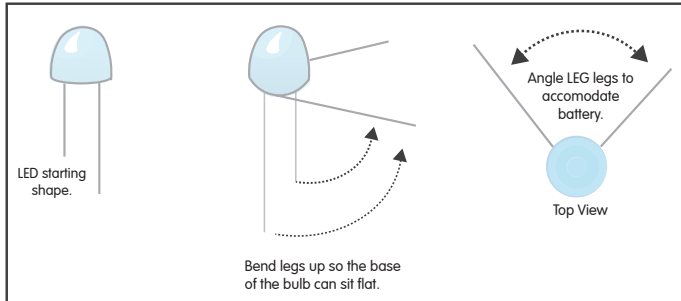


- Use a scissors to cut out your shape taking care to leave the circular cap attached to the lower rectangle.
- Use an Xacto knife to cut out the white parts.
- Curl into a tube shape and secure back edge with a piece of transparent tape.
- Follow diagram on back of circle to assemble light circuit.



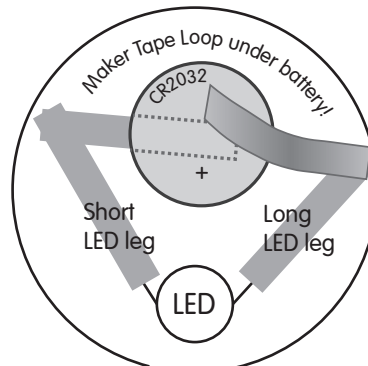
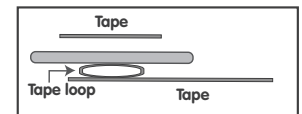


Preparing the LED legs

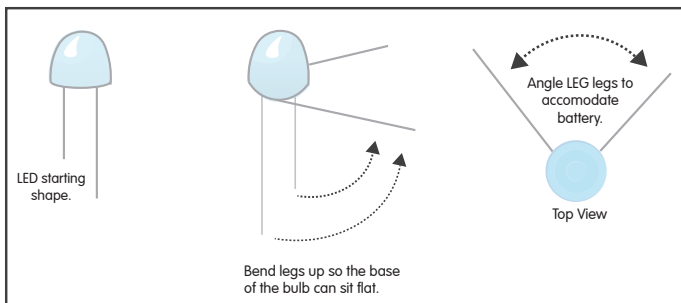


*Stick tape to battery to turn on; peel back to turn off.

The Tape Loop

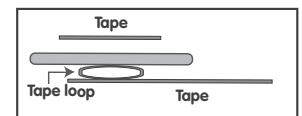


Preparing the LED legs



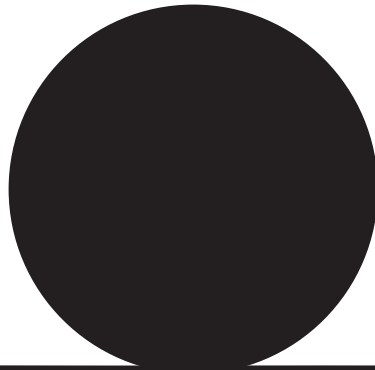
*Stick tape to battery to turn on; peel back to turn off.

The Tape Loop



Franken Tube

Materials Needed:
A,B,C,F



- Use a scissors to cut out your shape taking care to leave the circular cap attached to the lower rectangle/ Color as you wish.
- Use an Xacto knife to cut out the white parts.
- Curl into a tube shape and secure back edge with a piece of transparent tape.
- Follow diagram on back of circle to assemble light circuit.

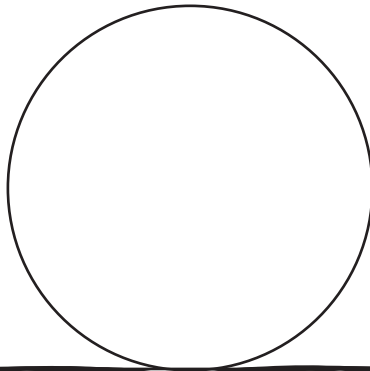


Tube

-O-

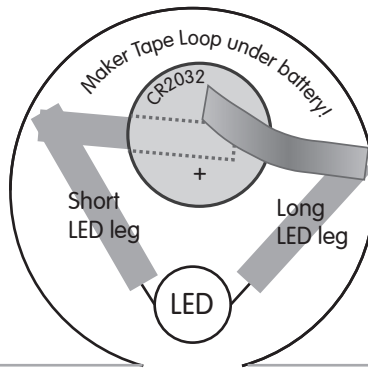
Lantern

Materials Needed:
A,B,C,F

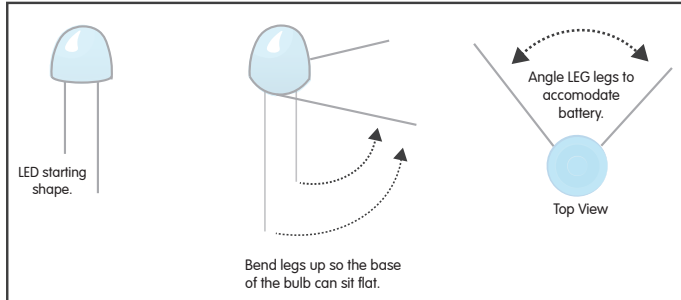


- Use a scissors to cut out your shape taking care to leave the circular cap attached to the lower rectangle/ Color as you wish.
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- Curl into a tube shape and secure back edge with a piece of transparent tape.
- Follow diagram on back of circle to assemble light circuit.



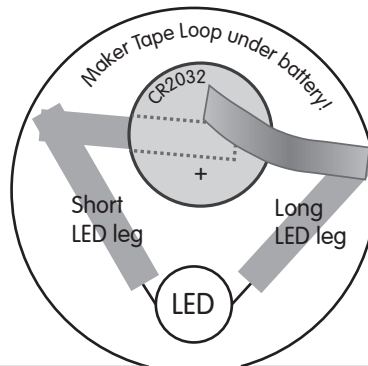
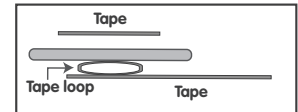


Preparing the LED legs

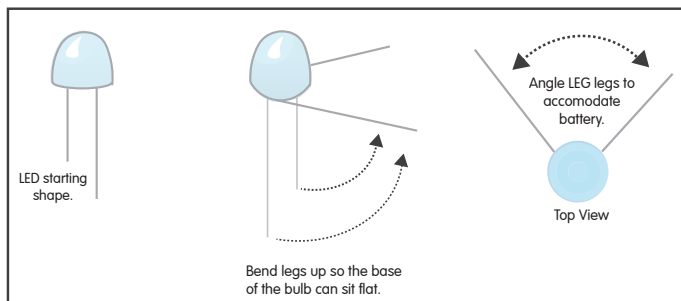


*Stick tape to battery to turn on; peel back to turn off.

The Tape Loop

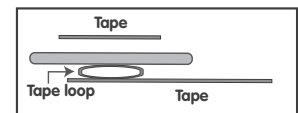


Preparing the LED legs



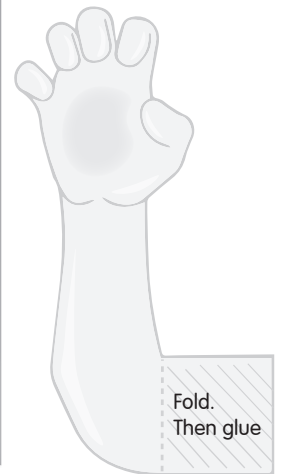
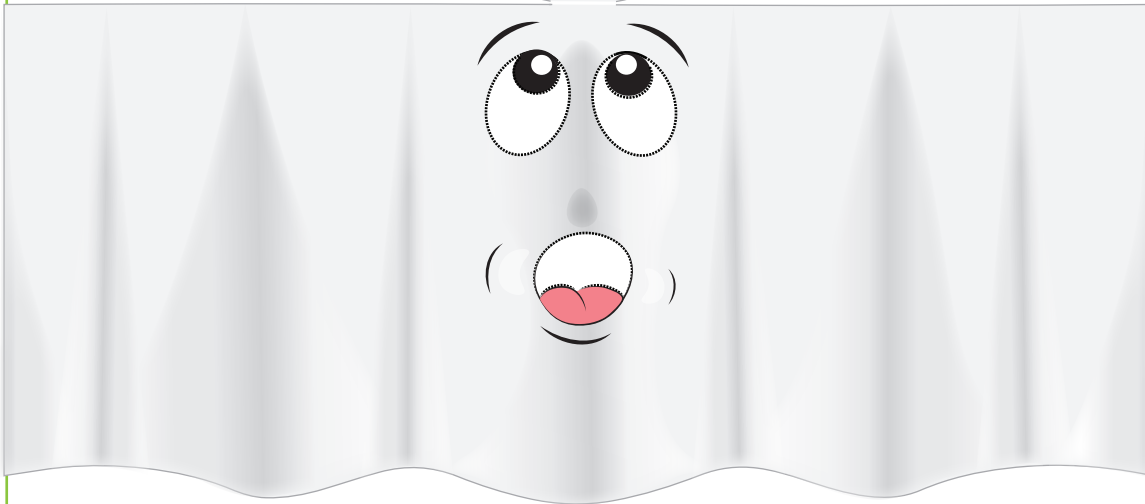
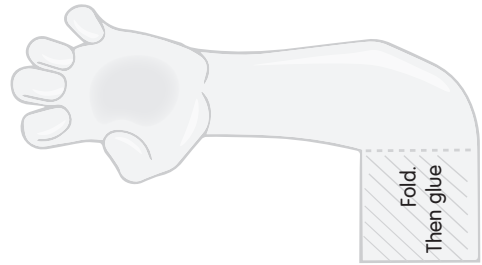
*Stick tape to battery to turn on; peel back to turn off.

The Tape Loop



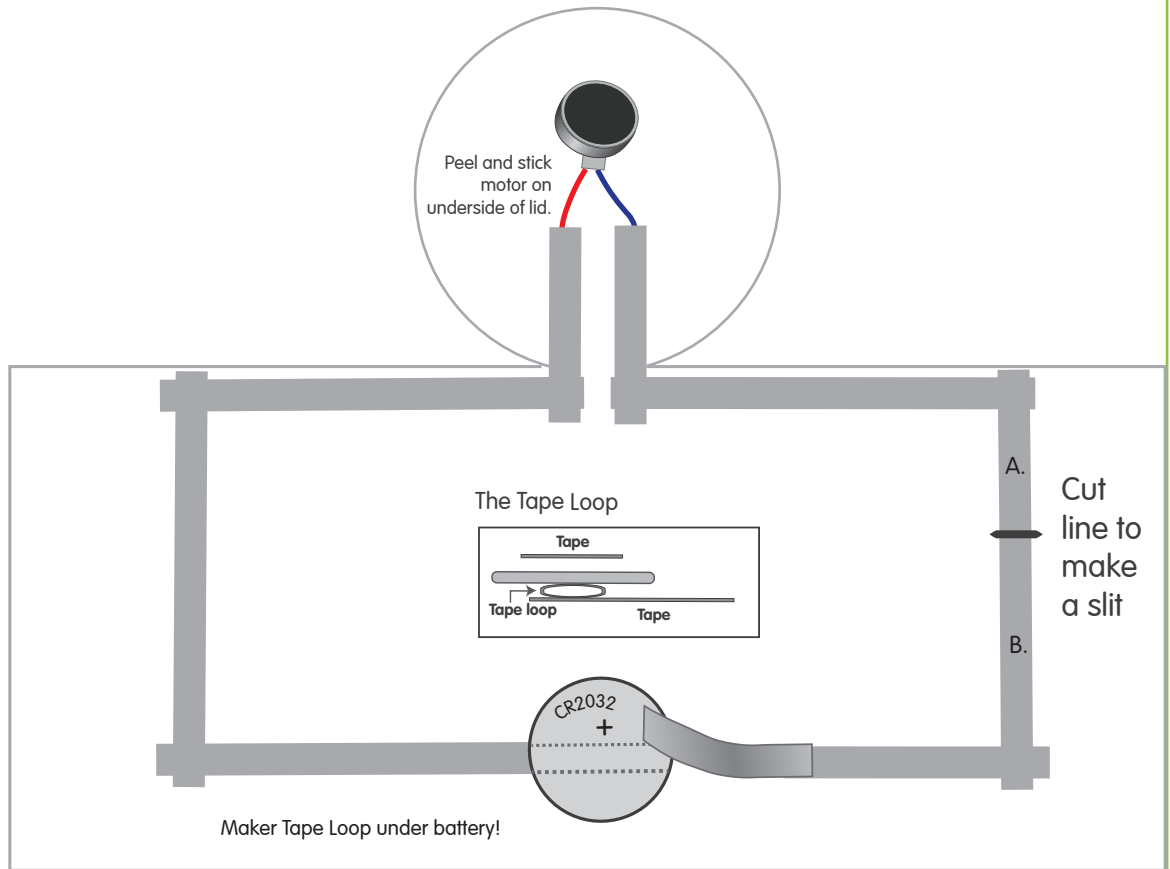
Ghost Tube

Materials Needed:
A,B,D,F



Cut and save lower half instructions.

- Use a scissors to cut out your shapes taking care to leave the circular cap attached to the lower rectangle.
- Follow diagram on back of this sheet to assemble circuit.
- Curl into a tube shape and secure back seam with a piece of transparent tape.
- Fold lid down and tape into place.
- Fold/glue arms to sides of project
- Insert key in slit to turn the circuit on!



Preparing the slit

Inside

Thread each tape path through the slit from the back to the front

Outside

Wrap tape from the back around to front 1/4"

Each piece in opposite directions so the slit is maintained...

By threading these two paths through the slit and wrapping/sticking the ends in opposite directions to the front face you:

- Maintained the gap that breaks the circuit and puts the circuit in an "off" or "open" state
- Made the edges of that gap conductive

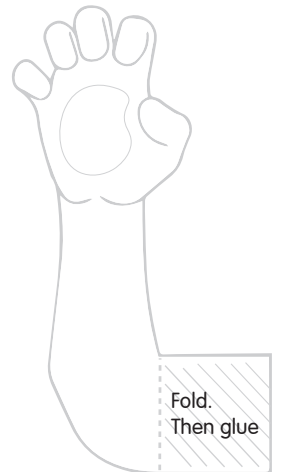
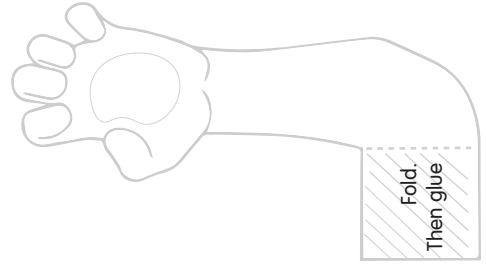
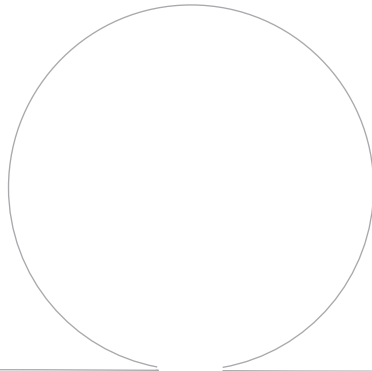
To operate: Finish key using the template and instructions at right. Insert Maker Tape end of key into slit to complete the circuit and turn your ghostie on!

The Slit Key

Cut out key. Fold on the dotted line so the solid line still shows. Then wrap a piece of Maker Tape from the middle (solid) line to the edge and back around to the middle line on the opposite side.

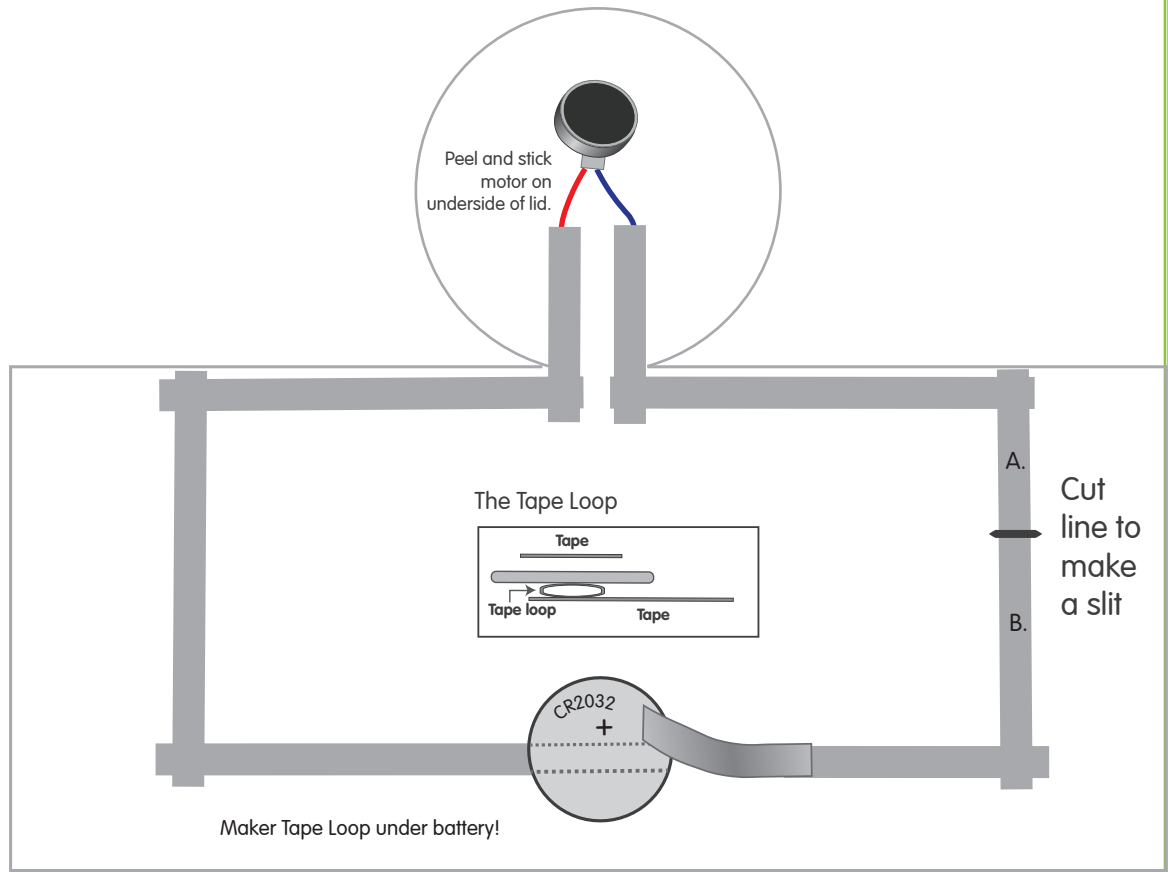
Ghost Tube

Materials Needed:
A,B,D,F



Cut and save lower half instructions.

- Use a scissors to cut out your shapes taking care to leave the circular cap attached to the lower rectangle.
- Color the ghost as you wish.
- Follow diagram on back of this sheet to assemble circuit.
- Curl into a tube shape and secure back seam with a piece of transparent tape.
- Fold lid down and tape into place.
- Fold/glue arms to sides of project
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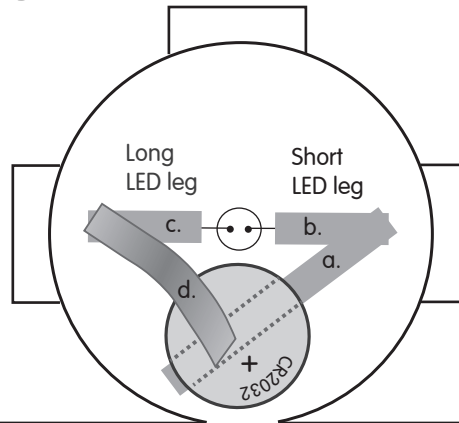
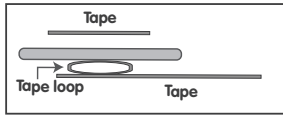
The Slit Key

Cut out key. Fold on the dotted line so the solid line still shows. Then wrap a piece of Maker Tape from the middle (solid) line to the edge and back around to the middle line on the opposite side.

Stubby Tube Templates

Materials Needed:
A,B,C,E,F

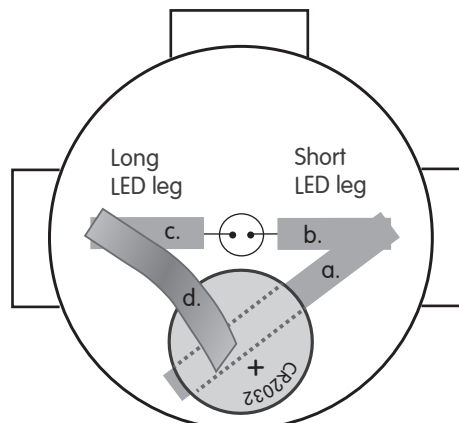
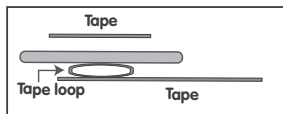
The Tape Loop



- Cut out your stubby tube template.
- Poke 2 holes for the LED legs.
- Insert LED legs into holes from the opposite side taking care to orient the long and short legs as shown.
- Bend LED legs in directions shown.
- Measure, Cut, Peel & Stick Maker Tape paths "a,b,c".
- Maker Tape loop atop battery end of "a."
- Stick battery atop loop "+" side UP
- Measure, Cut, Peel & Stick Maker Tape path "d" to turn on.
- Fold tabs and circle down toward long rectangle.
- Curl long rectangle into the side wall shape and use tape to secure final shape.

Maker Tape Loop under battery!

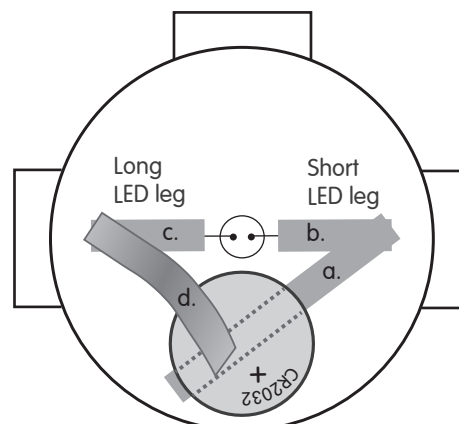
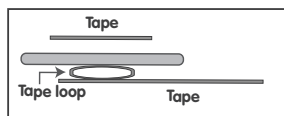
The Tape Loop



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- Measure, Cut, Peel & Stick Maker Tape paths "a,b,c".
- Maker Tape loop atop battery end of "a."
- Stick battery atop loop "+" side UP
- Measure, Cut, Peel & Stick Maker Tape path "d" to turn on.
- Fold tabs and circle down toward long rectangle.
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Maker Tape Loop under battery!

The Tape Loop

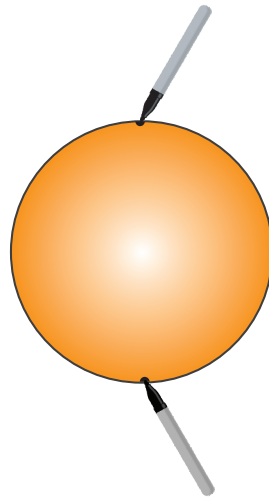


- Cut out your stubby tube template.
- Poke 2 holes for the LED legs.
- Insert LED legs into holes from the opposite side taking care to orient the long and short legs as shown.
- Bend LED legs in directions shown.
- Measure, Cut, Peel & Stick Maker Tape paths "a"- "c".
- Maker Tape loop atop battery end of "a."
- Stick battery atop loop "+" side UP
- Measure, Cut, Peel & Stick Maker Tape path "d" to turn on.
- Fold tabs and circle down toward long rectangle.
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Maker Tape Loop under battery!

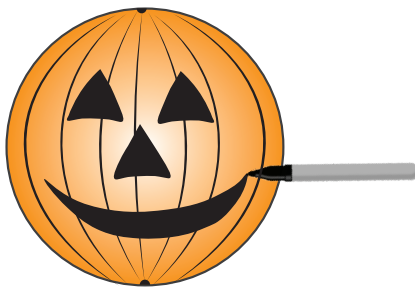
Ping Pong Ball Topper (for use with Stubby Tubes)

Create reference dots



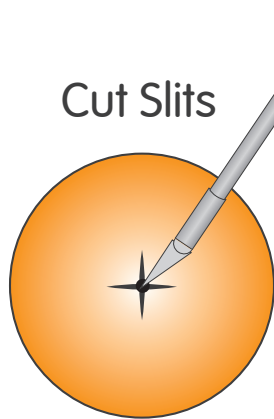
Imagine your ping pong ball as a globe of the earth. Use a black permanent marker to make a small dot on the north pole and the south pole. These will serve as reference points as you color to create your design and also a reference point for where you will make the slits that will allow you to push the finished ball over the LED bulb of a finished Stubby Tube at the end.

Draw design



Use a black permanent marker to create your design on your ping pong ball. Your two dots should help you keep the design positioned where you intend it to be on the sphere.

Cut Slits



Now find the "south pole" dot which should be on the underside of your design when it's facing you. Using a craft knife, carefully make two small (10mm) cuts that are perpendicular to one another and cross at the dot.

Press atop LED



Press the Ping Pong ball atop the LED on your stubby tube base. It WILL take some pressure. So, also press from underneath to support the paper while pressing.



MORE SPOOKY INSPIRATION

Still haven't had enough Halloween fun? Use the QR code found here to go directly to more fun Origami Circuits projects including several more spooky 3D Halloween-themed designs!



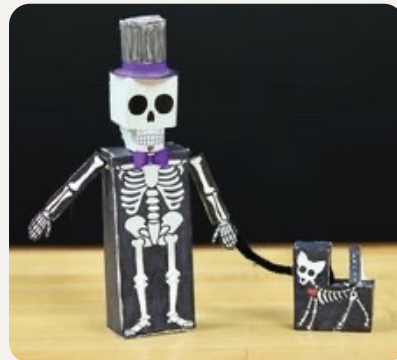
Dancing Dead



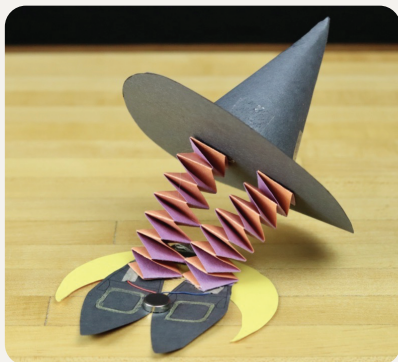
Sugar Skull



Chomping Teeth



Sir Skeleton



Wacky Witch



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.

Find additional eBooks, crafting guides, videos, directions, and educational resources at BrownDogGadgets.com. Contact us for educational discounts and free professional development classes.

help@browndoggadgets.com • 262-788-9223
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