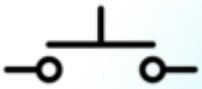
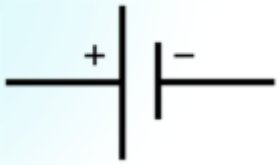
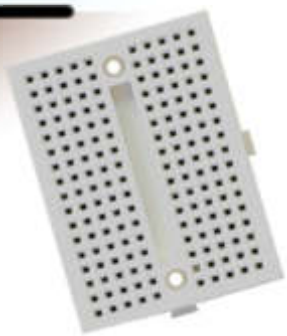
Helmet Kit

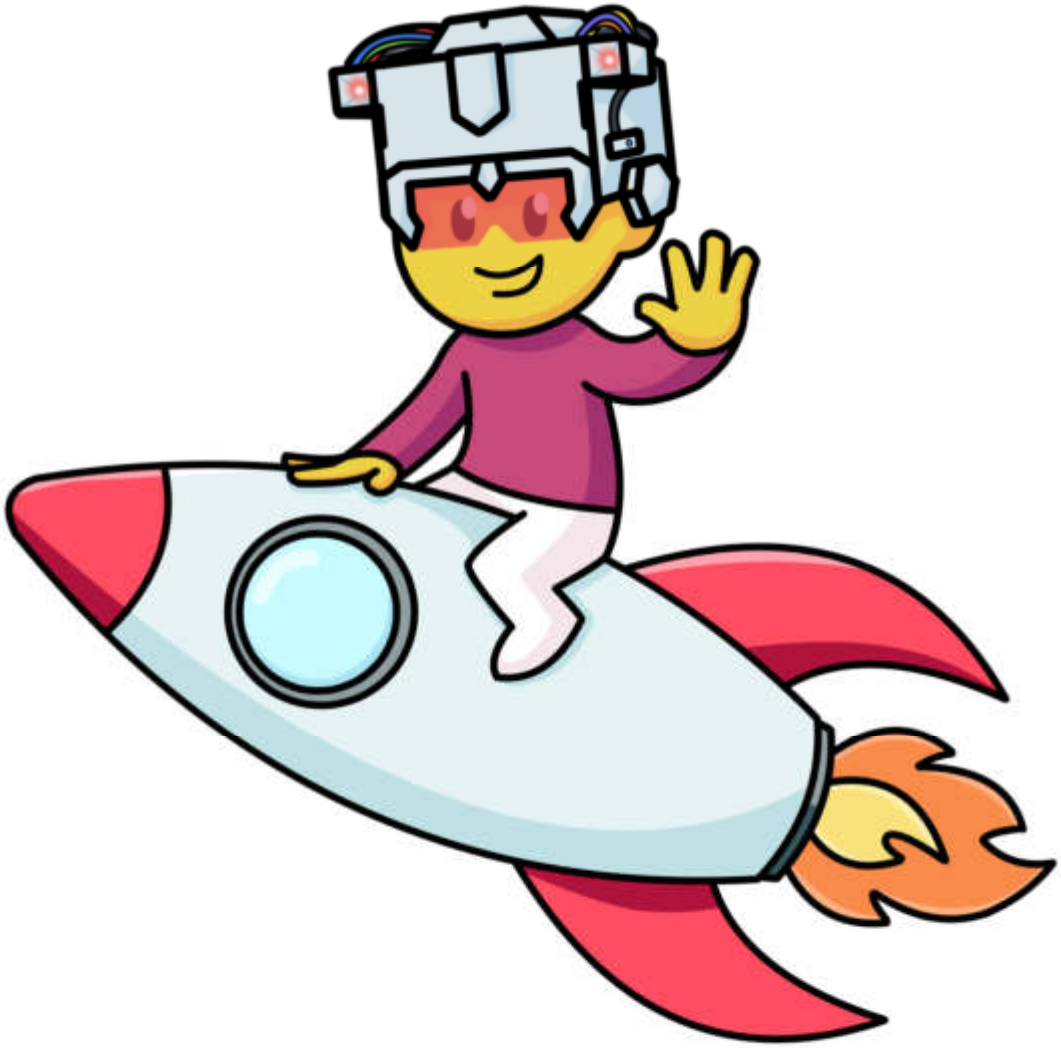
Build Guide







Blast-off into fun with the SquareBrain Helmet Kit!

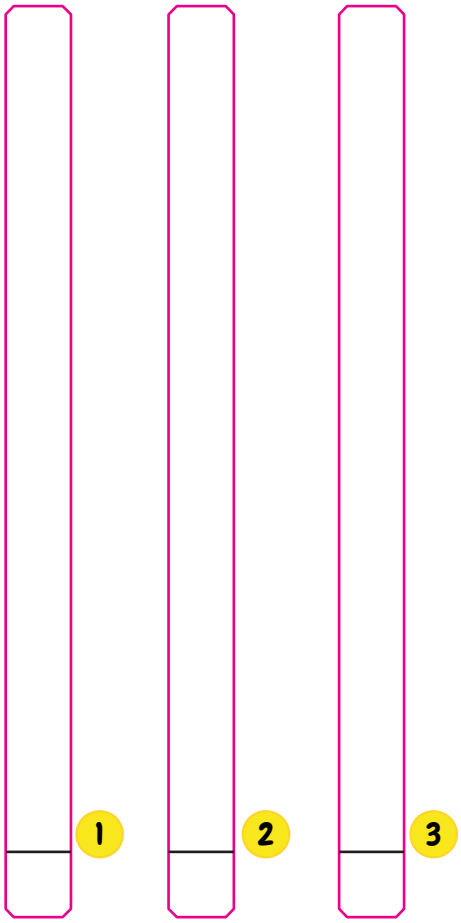


The Helmet Kit comes with all the materials needed to build the helmet! Use the included electronics to add multicolored lights to your build!

PARTS LIST

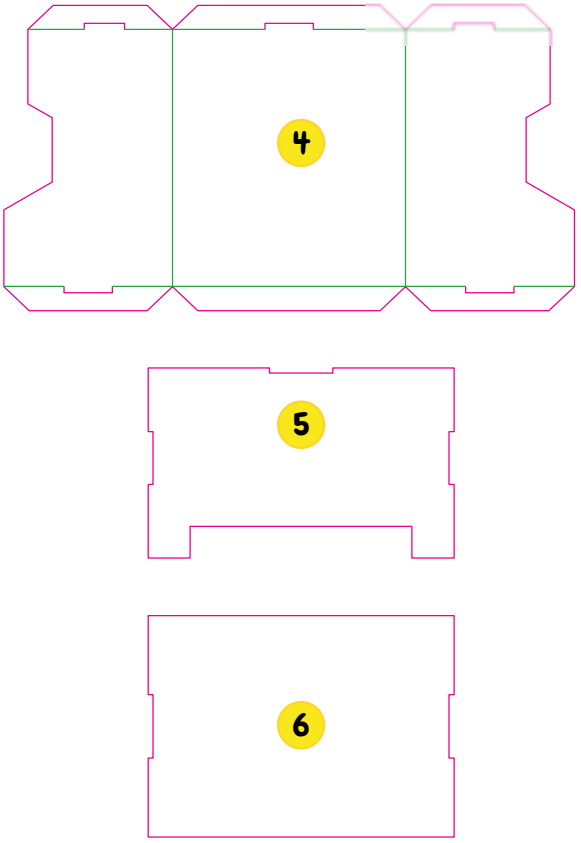
Step 1: Cut out Pieces

Cutout Pieces:



Builds this shape:

Cutout Pieces:



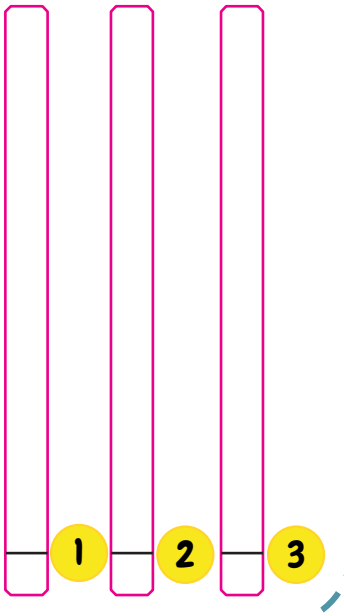
Builds to this shape:

Tools:

-OR-

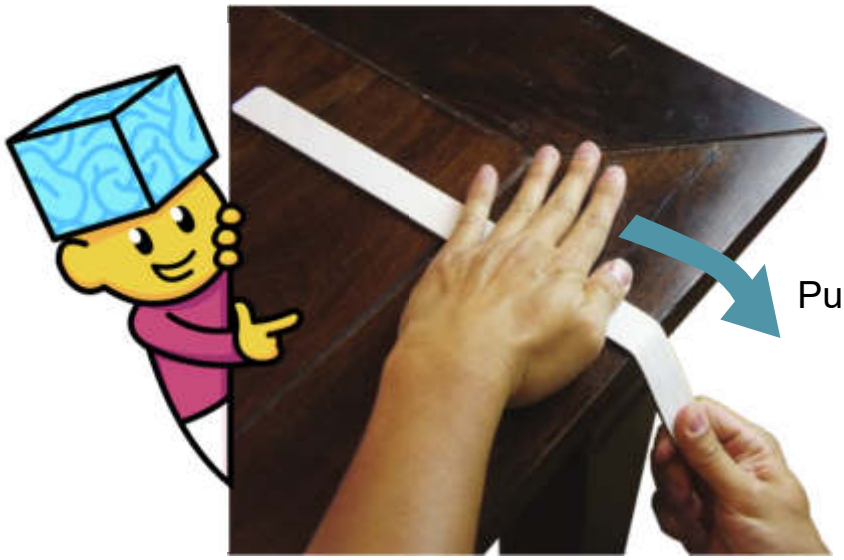
Optional

Cutout Pieces:



Task 1 : Curl the Individual Head Straps

Place the straps on top of a table and use the table's edge to curl each head strap.



Task 2: Glue Together the Head Ring

Apply a bead of hot glue to the area marked in orange on cutout piece then secure cutout piece 1 to 2

-OR-

You should have 3 curled straps.

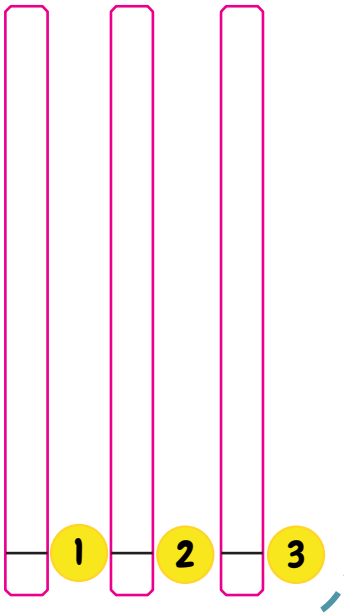
Secure cutout piece 1 to 2.

Tools:

-OR-

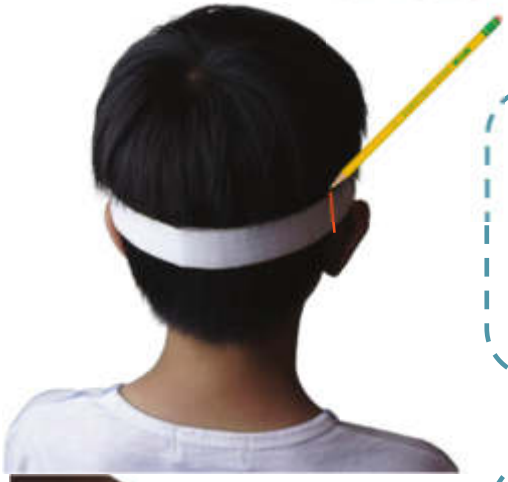
Optional

Cutout Pieces:



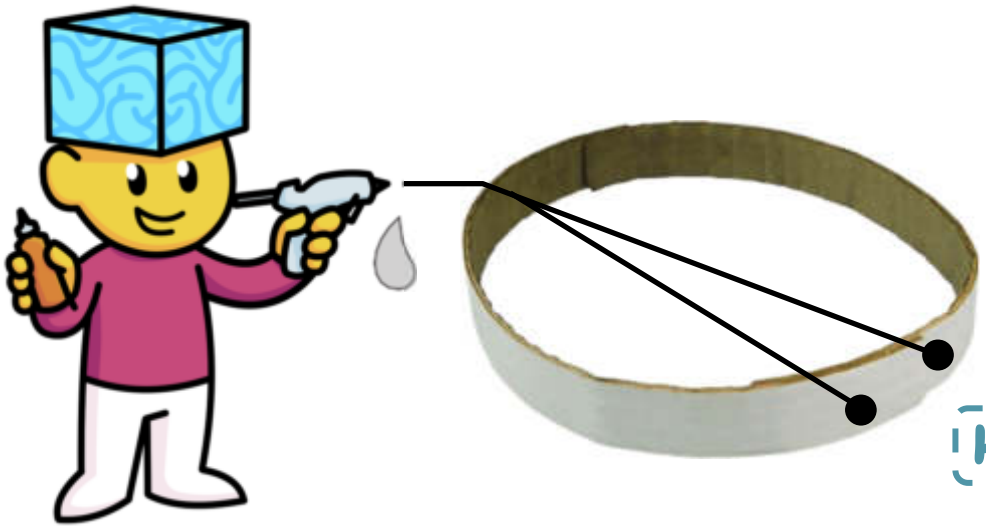
Task 3: Fit the Head Ring Around Your Head

Wrap the head ring around your head. Mark the location of one end with a pencil then glue the head ring together making sure the head ring is not too tight.



Mark the end one of the head ring with a pencil. Ask a friend to help

Make sure your head ring is not too tight. A good check is to see if you can fit two fingers between the head ring and your head.



Glue the two head straps together to make a head ring.

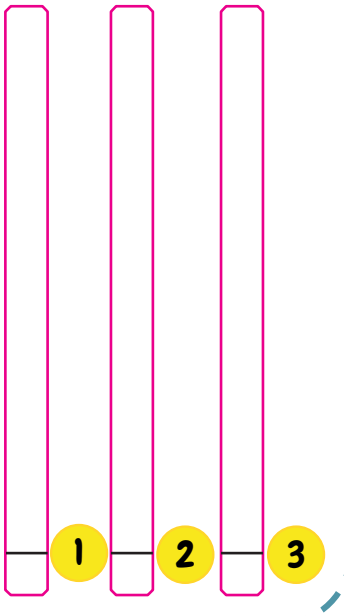
Head Ring

Tools:



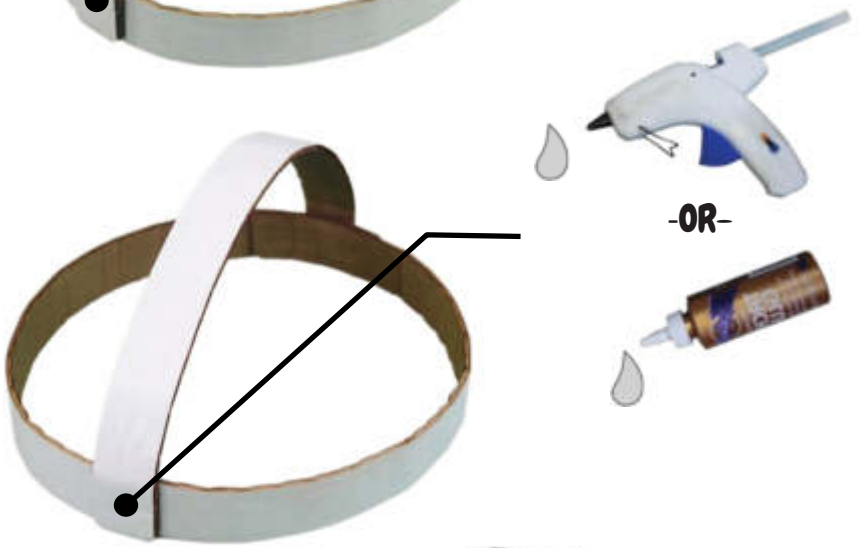
Optional

Cutout Pieces:



Task 4: Glue on the Top Head Strap

Glue the tip of the top head strap to the head ring. Place the head strap back onto your head to measure top head strap properly. Glue the rear of the top head strap to the head ring.



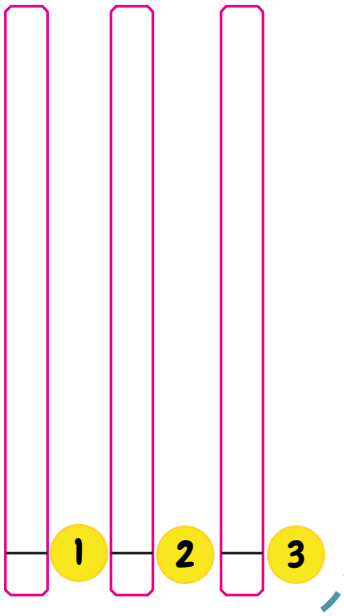
Put the head strap back onto your head and measure the length of the top head strap.

Tools:

-OR-

Optional

Cutout Pieces:



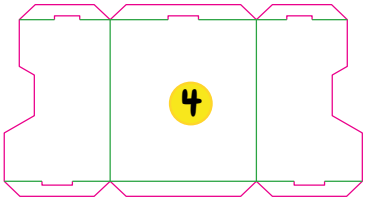
After gluing on the top head strap, cut off the excess material with a pair of scissors.

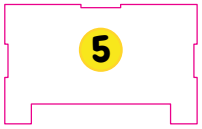
HEAD STRAP

Tools:

-OR-

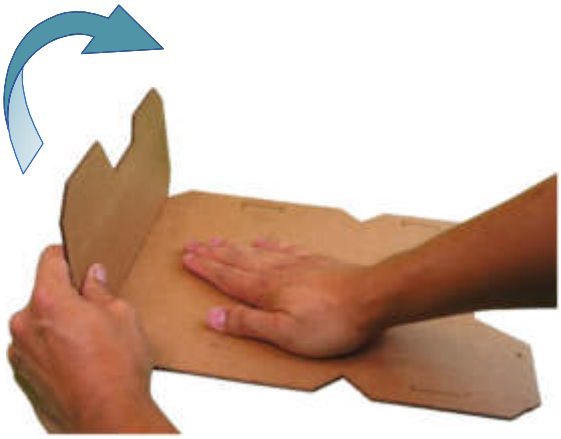
Cutout Pieces:



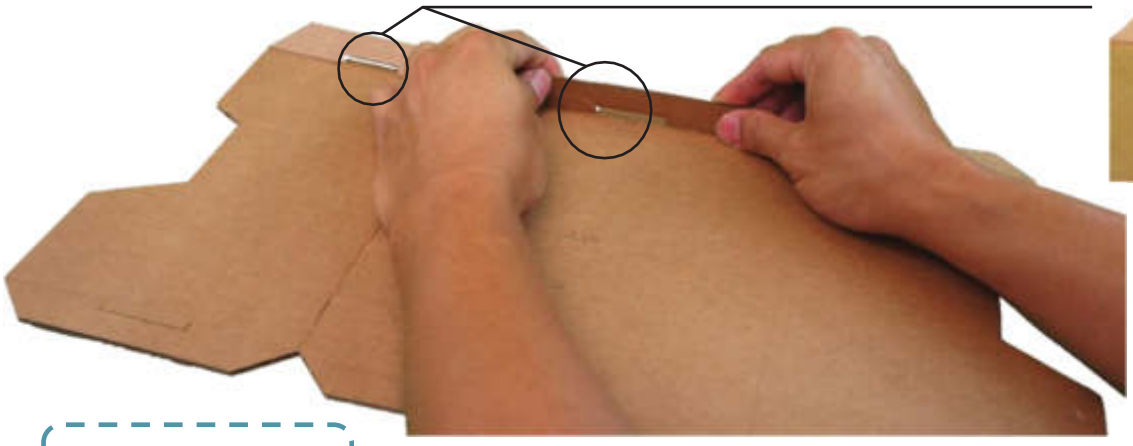


Task 1: Fold Along the Score Lines for Cutout Piece 4

Fold cutout piece 4 along the score lines as shown below in orange. Easiest way to do this is to hold the piece on a table then fold along the score lines.



Hold the cutout piece on top a table then fold along the score lines shown in orange.



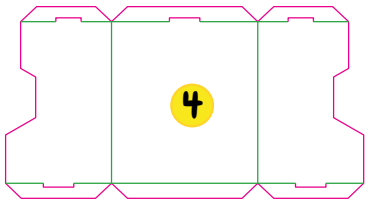
Fold along **ALL** score lines.

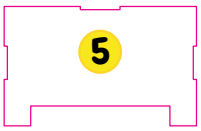
Make sure the slots are clear. There are five slots.

Tools:

-OR-

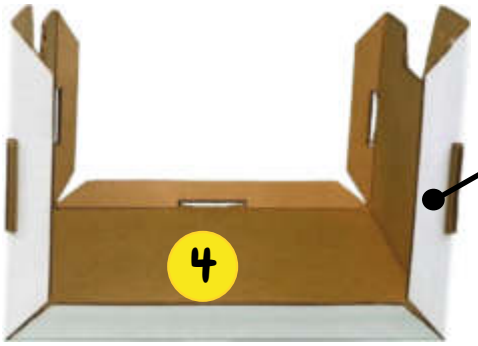
Cutout Pieces:





Task 2: Glue on the Rear Helmet Piece

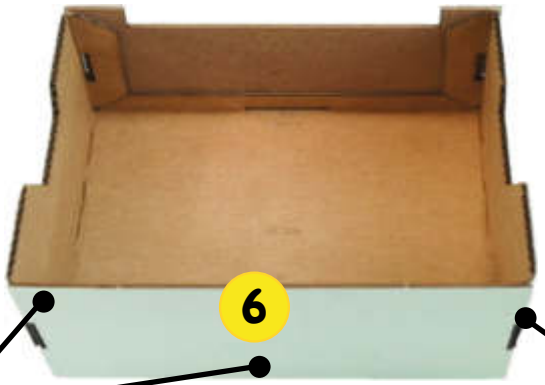
Glue cutout piece 6 to 4. Start by gluing on one of the sides, then glue on the top and the other sides.



-OR-

Glue on only **ONE** side of cutout piece 6 to 4.

Press the two pieces together.



-OR-

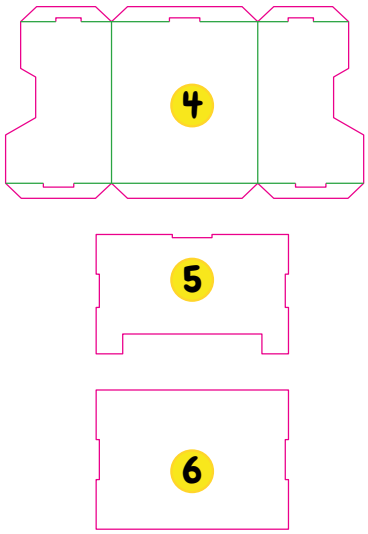
(1) Secure 6 to 4 on **ONE** side only. Be sure to align the notches on 6 with the nubs on piece 4.

(2) After gluing one side then glue on the other two sides.

Tools:

-OR-

Cutout Pieces:



Task 3: Glue on the Front Helmet Piece

Glue cutout piece 5 to 4. Start by gluing on one of the sides, then glue on the top and the other sides.

-OR-

Glue on only **ONE** side of cutout piece 5 to 4.

Press the two pieces together.

-OR-

(2) After gluing one side then glue on the other two sides.

(1) Secure 5 to 4 on **ONE** side only.

BASE HELMET

Step 3: Glue the Head Strap onto the Base Helmet

Tools:

-OR-

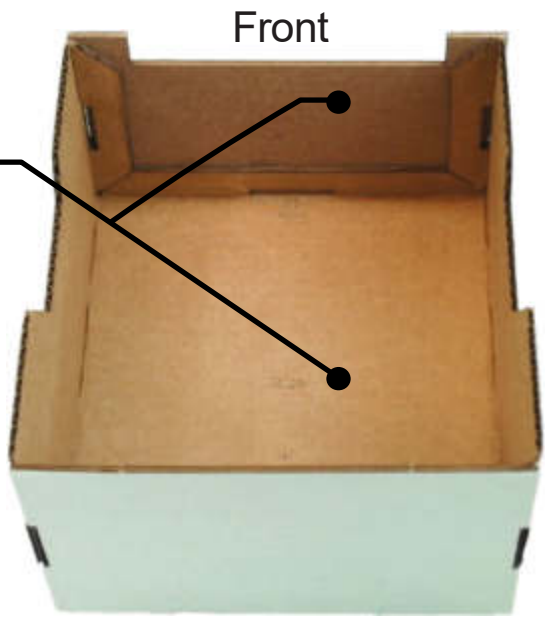
Cutout Pieces:

Task 1: Glue the Head Strap to the Base Helmet

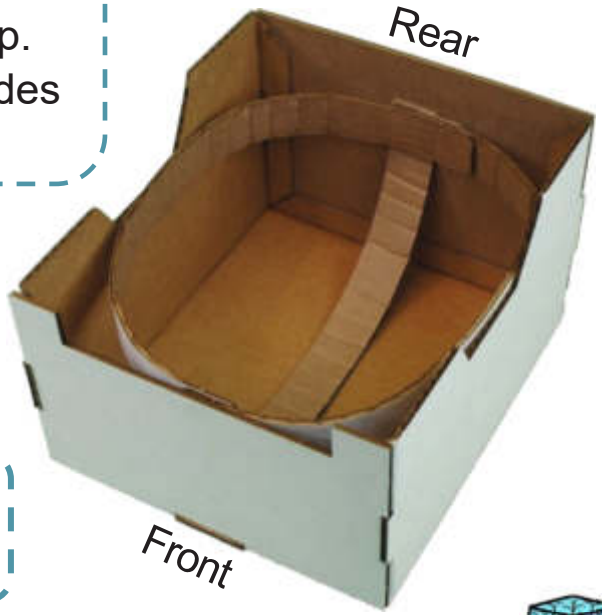
First glue the head strap to the top center of the helmet. Apply glue to the area inside the square box then secure the head strap in place. Next, glue the head strap to the front portion of the helmet. Hide the head strap in the helmet the best you can.

-OR-

(1) Glue the head strap to the top center of the helmet.



(2) Glue the head strap to the **FRONT** of the helmet. Hide the head strap. **DO NOT** glue the sides of the head strap



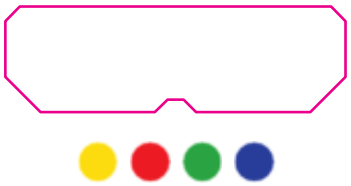
BASE HELMET + HEAD STRAP

PARTS LIST

Step 1: Cut out Pieces

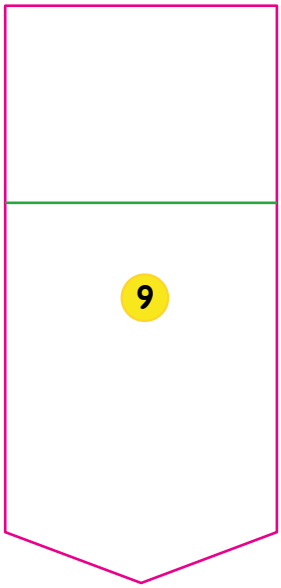
Cutout Pieces:

Colored Lenses

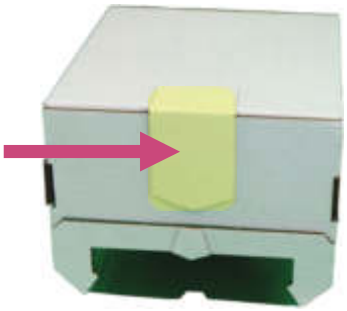


Builds this shape:

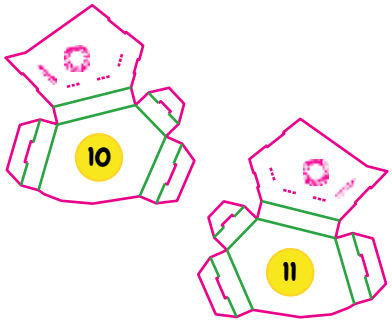
Cutout Pieces:



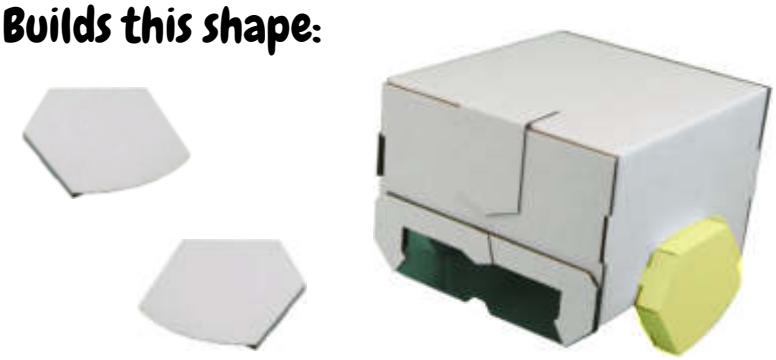
Builds this shape:



Cutout Pieces:



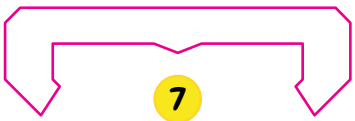
Builds this shape:



Tools:

-OR-

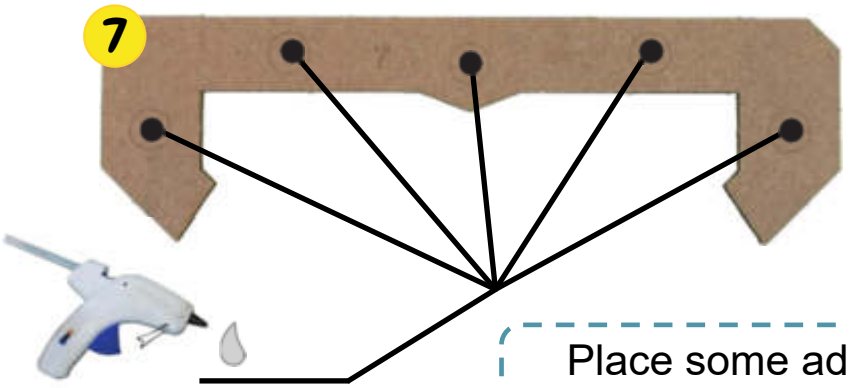
Cutout Pieces:



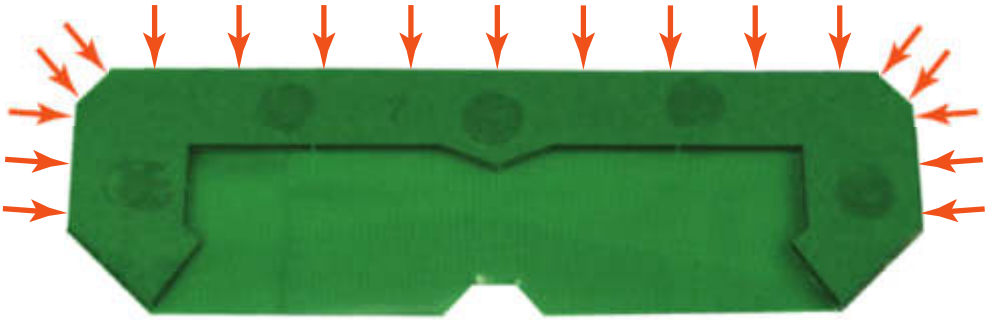
Colored Lenses

Task 1: Secure the Colored Lens to Cutout Piece 7

Place five glue dots on cutout piece 7 then secure the color lens to the cutout piece. Make sure the edges of the lens and the cutout piece are flush.



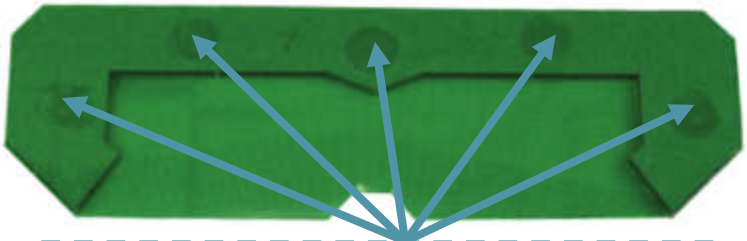
Place some adhesive over each of the circles



Make sure the edges are flush then secure the color lens in place.

Task 2: Glue the Lens to the Helmet

Apply hot glue to the lens area then secure cutout lens piece to the front of the helmet.



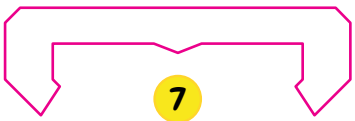
Place adhesive on the Colored LENS in the same location as the previous dots of glue.

Be sure to align the edges shown in orange then secure the lens to the helmet.

Tools:

-OR-

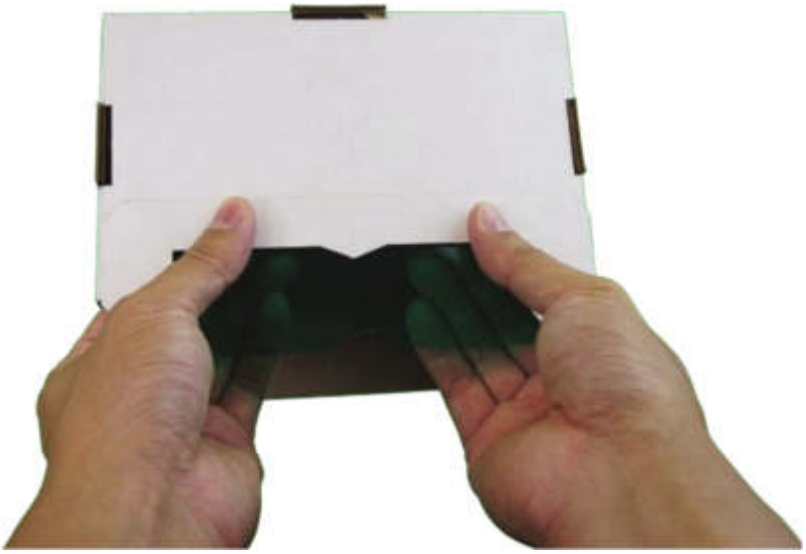
Cutout Pieces:



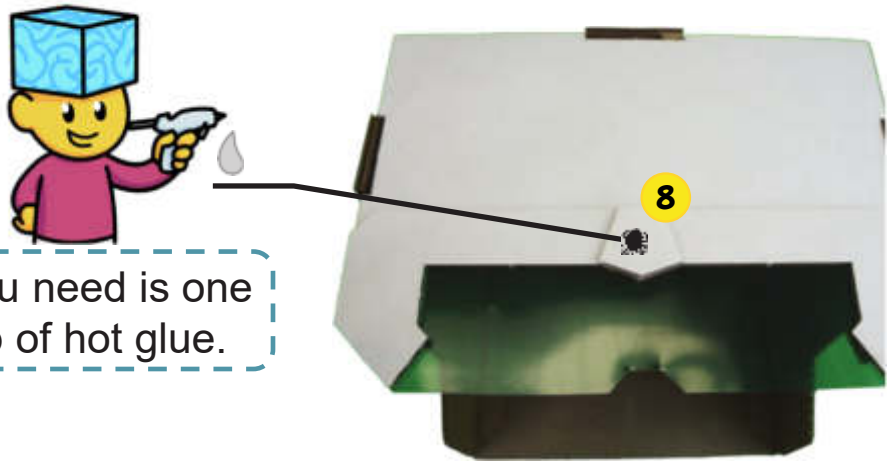
Colored Lenses

Task 3: Glue Cutout Piece 8 to the Lens Frame

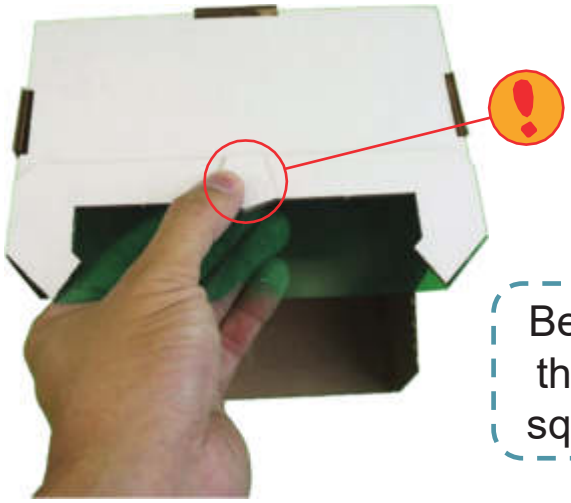
Glue cutout piece 8 to the Lens Frame.



Make sure the lens and the helmet are solidly adhered together.



All you need is one drop of hot glue.



Secure cutout piece 8 to the center of the lens frame.

Hold in place until the glue hardens.

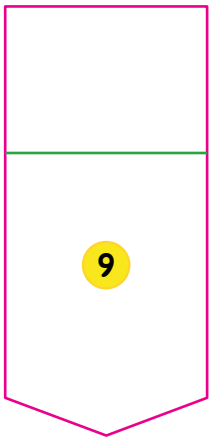
Be careful of the hot glue squirting out!

Step 2: Glue Cutout Piece 9 to the Helmet

Tools:

-OR-

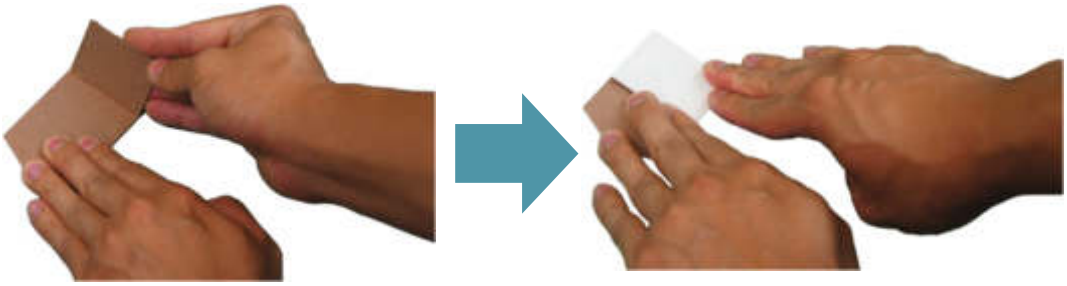
Cutout Pieces:



Task 1: Fold Cutout Piece 9 Along the Score Line

Fold cutout piece 9 along the marked line.

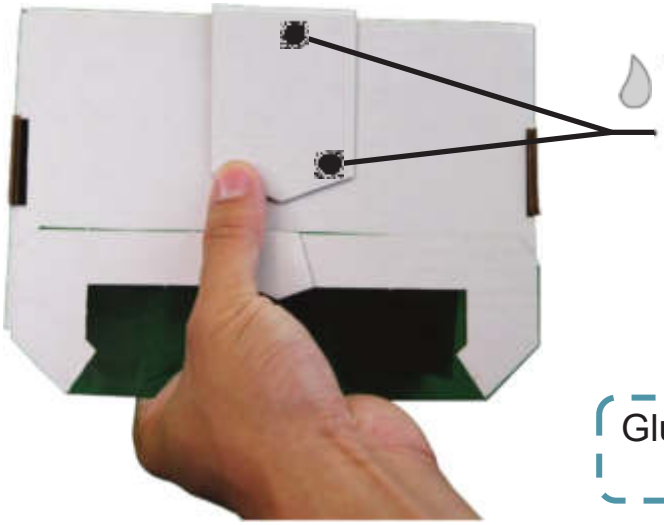
The marked line is in orange.



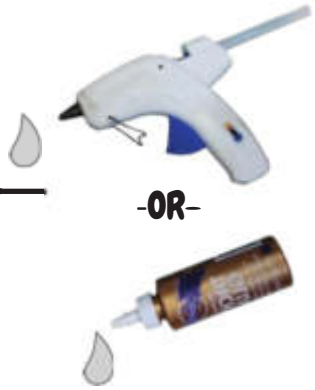
Fold along the marked line.
Make sure to fold it all the way.

Task 2: Glue Cutout Piece 9 to the Helmet

Align, center and glue piece 9 along the top edge of the helmet.



-OR-



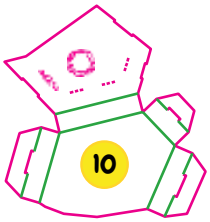
Glue cutout piece 9 to the helmet.

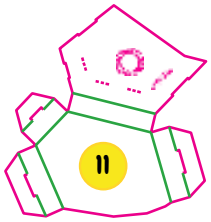
Step 3: Assemble the Ear Protection Pieces

Tools:

-OR-

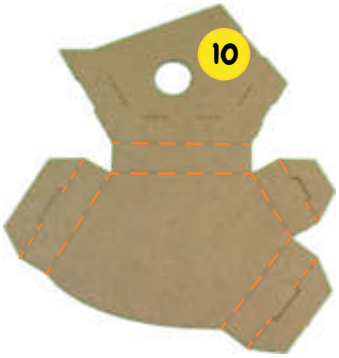
Cutout Pieces:





Task 1: Fold Cutout Pieces 10 and 11 Along the Score Lines

Fold cutout pieces 10 and 11 along the score lines indicated in **orange**.



Fold along the score line.
Make sure to fold it all the way.

Task 2: Glue One Side of the Earpiece

Glue only one side of the earpiece. It does not matter which cutout piece you start with first.

-OR-

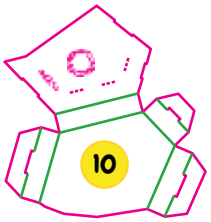
Glue only one side of the earpiece.

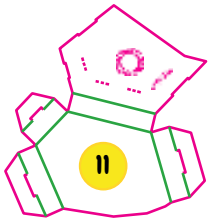
Be careful of the hot glue squirting out!

Tools:

-OR-

Cutout Pieces:





Task 3: Glue on the Other Sides, One Side at a Time

Glue on the other two sides, one side at a time. Tuck in the front edge of the tab into the cutout piece, apply hot glue to the tab, slide it in place then hold until the glue hardens. Repeat until all sides are glue in place.

(1) Tuck in the front edge.

(2) Apply glue to tab.

Be careful of the hot glue squirting out!

(1) Tuck in the front edge.

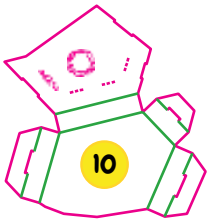
(2) Use a line of hot glue.

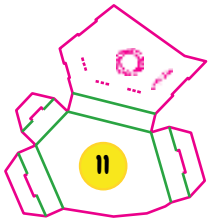
Be careful of the hot glue squirting out!

Tools:

-OR-

Cutout Pieces:





Task 4: Repeat Tasks 1 to 3

Repeat tasks 1 to 3 for the other ear protection piece. You should have two separate ear protection pieces.

Outside Surface (Left Side)

Inside Surface (Left Side)

Outside Surface (Right Side)

Inside Surface (Right Side)

Tools:

-OR-

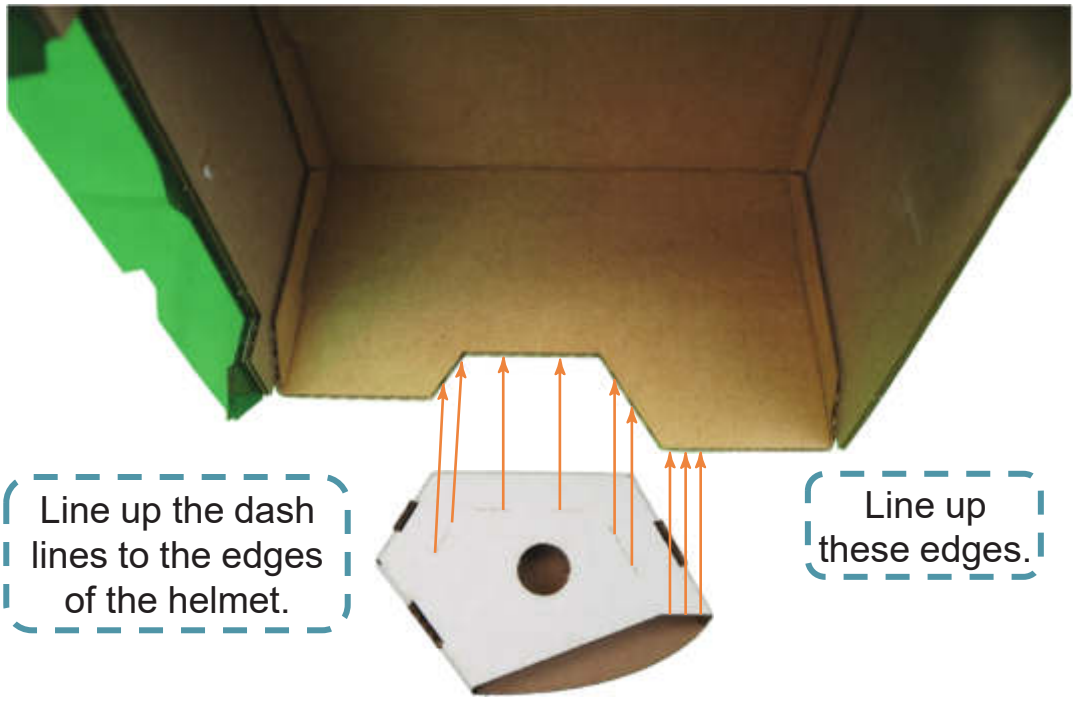
Cutout Pieces:

Ear Protection Pieces

Helmet

Task 1: Glue the Earpieces to the Helmet

Align the edges of the helmet to the dash lines on the earpiece. Apply glue to the earpiece, align the edges, then hold in place until the glue hardens.



Line up the dash lines to the edges of the helmet.

Line up these edges.

Do not apply glue and dry fit the earpiece to the helmet first.

-OR-

Apply a line of hot glue to the area in **orange**.

Align the edges then secure in place until glue dries.

Tools:

-OR-

Cutout Pieces:

Ear Protection Pieces

Helmet

Task 2: Repeat Task 1

Repeat Task 1 until and glue both earpieces to the helmet.

Basic Helmet

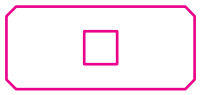
Parts List

Step 1

Cutout Pieces:

21

22

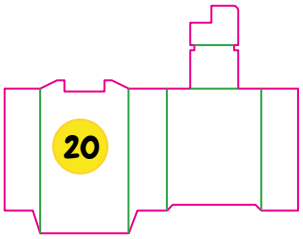


Push-Lock Switch

Building to this shape:

Step 2

Cutout Pieces:



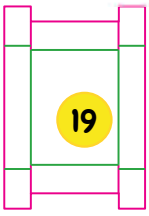
Header Pins

Breadboard

Building to this shape:

Step 3

Cutout Pieces:



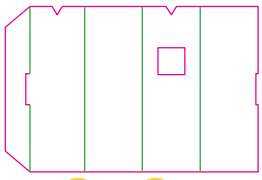
Battery Pack

Building to this shape:

Step 4

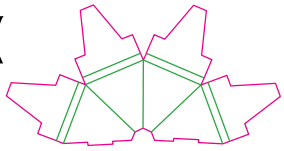
Cutout Pieces:

2X



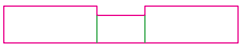
12 & 13

2X



14 & 15

2X



16 & 17

2X

LED

8X

Male (Pin)

8X

Female (Socket)

Building to this shape:

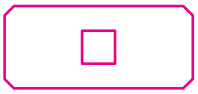
Tools:

-OR-

Cutout Pieces:

21

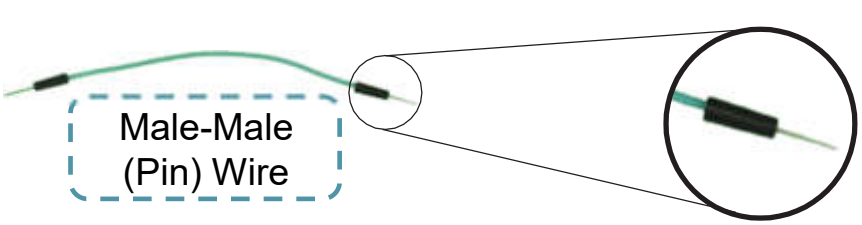
22

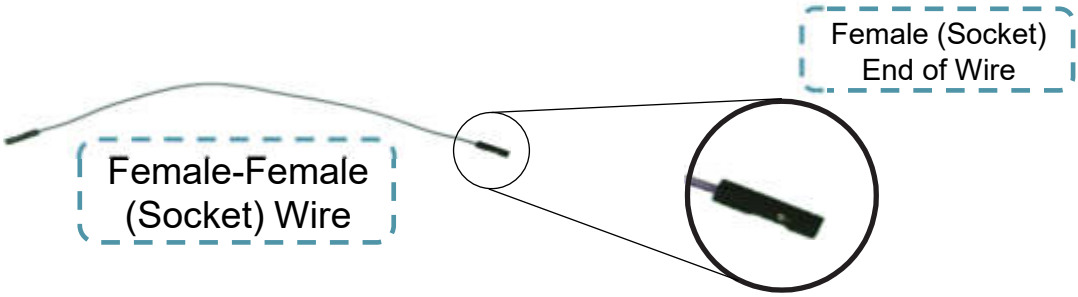


Push-Lock Switch

Task 1: Separate Male (Pin) and Female (Socket) Wires

Separate the Male (Pin) and Female (Socket) wires that you are going to use into two piles.





Task 2: Sandwich the Push-Lock Switch Between Cutout Pieces 21 and 22.

Place the switch into piece 21. Place piece 22 over the switch sandwiching it between piece 21 and 22. Use adhesive to glue these pieces together.

DO NOT GLUE THE SWITCH IN PLACE.

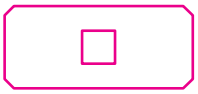
Tacky Glue requires about 1-2 minutes to hold the two pieces together.

Tools:

-OR-

Cutout Pieces:

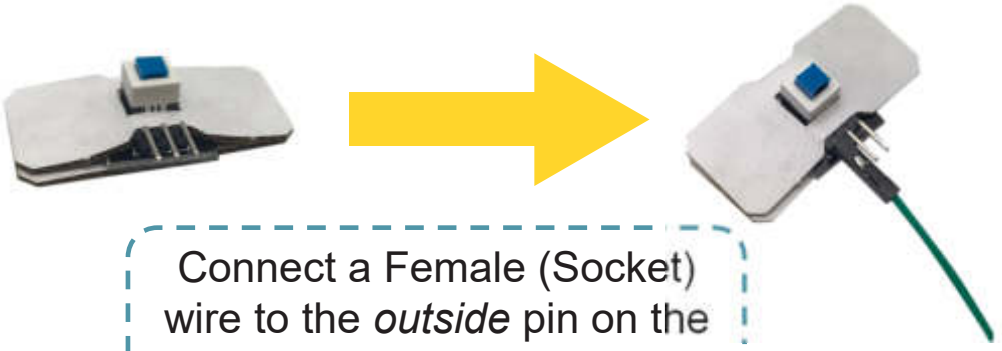
21 

22 

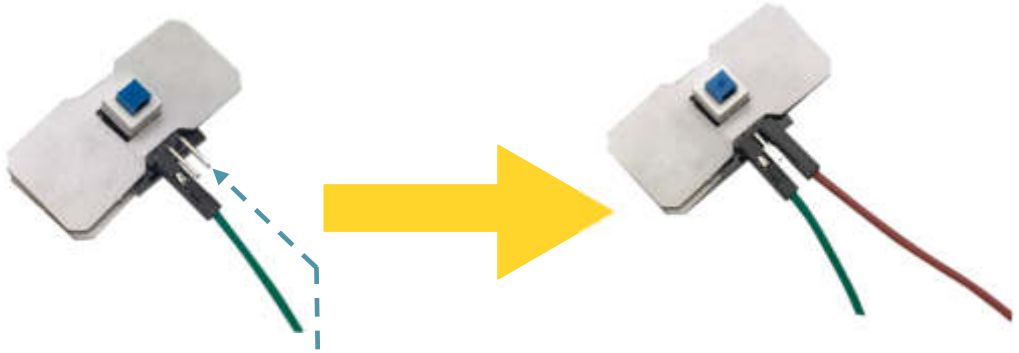
Push-Lock Switch

Task 3: Connect the Wires to the Switch

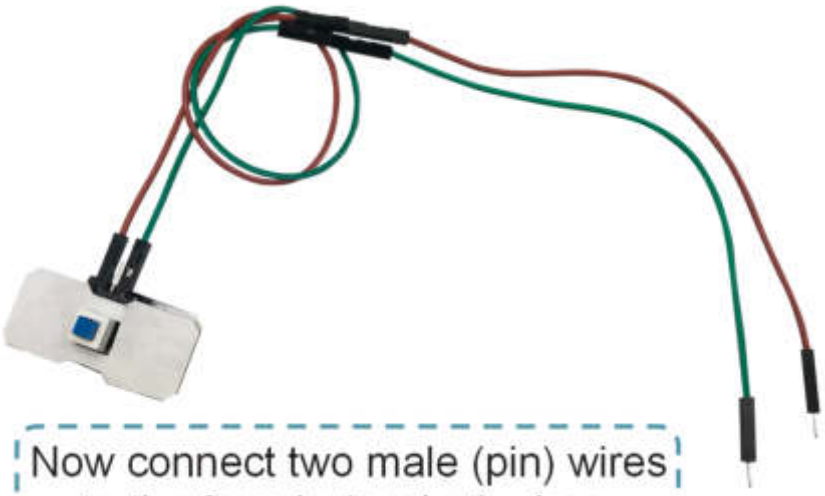
First connect two female (socket) wires to the switch then connect two male (pin) wires to the female (socket) wires.



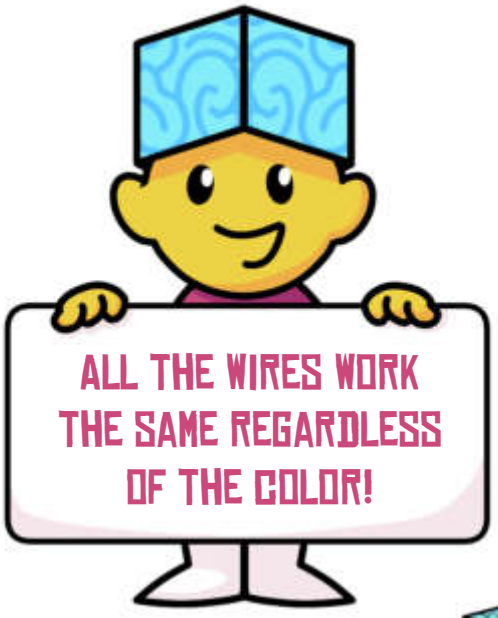
Connect a Female (Socket) wire to the *outside* pin on the Switch. (Labeled with a “S”)



Connect a second Female (Socket) wire on either side of the middle pin (Labeled with a “-”).



Now connect two male (pin) wires to the female (socket) wires.

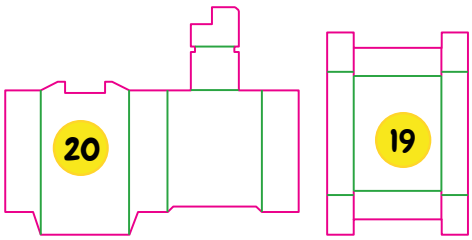


Step 2: Assemble the Battery Holder & Breadboard Tray

Tools:

-OR-

Cutout Pieces:



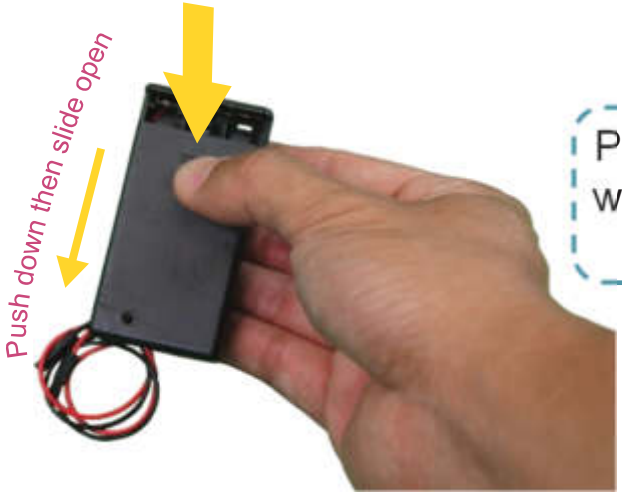
Header Pins

Breadboard

Battery Pack

Task 1: Put Three AAA Alkaline Batteries into the Battery Pack

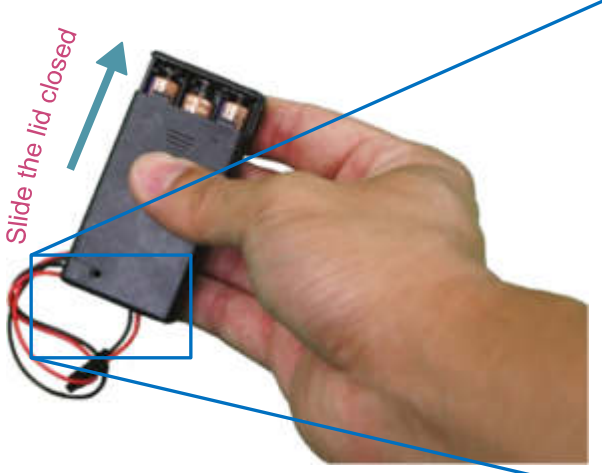
Load three AAA *ALKALINE* batteries into the battery pack. Make sure the switch is turned off.

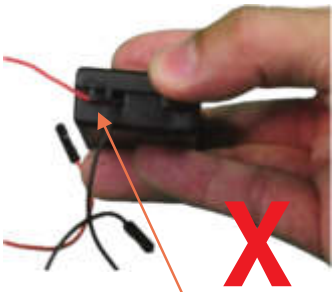


Push down on the lid with your thumb then slide the lid open.

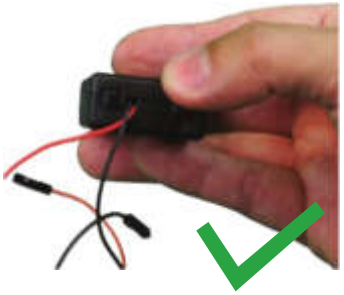
Load three AAA *ALKALINE* batteries into the battery pack.

If you are having problem closing the lids, check your wires....





Be sure your wires are not caught in the tabs of the lid.

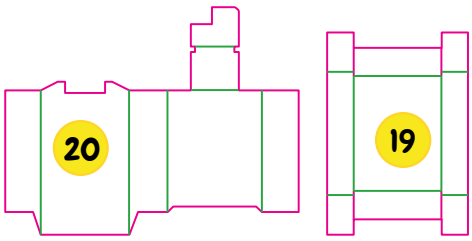


Make sure your wires are clear of the tabs on the lid.

Tools:

-OR-

Cutout Pieces:



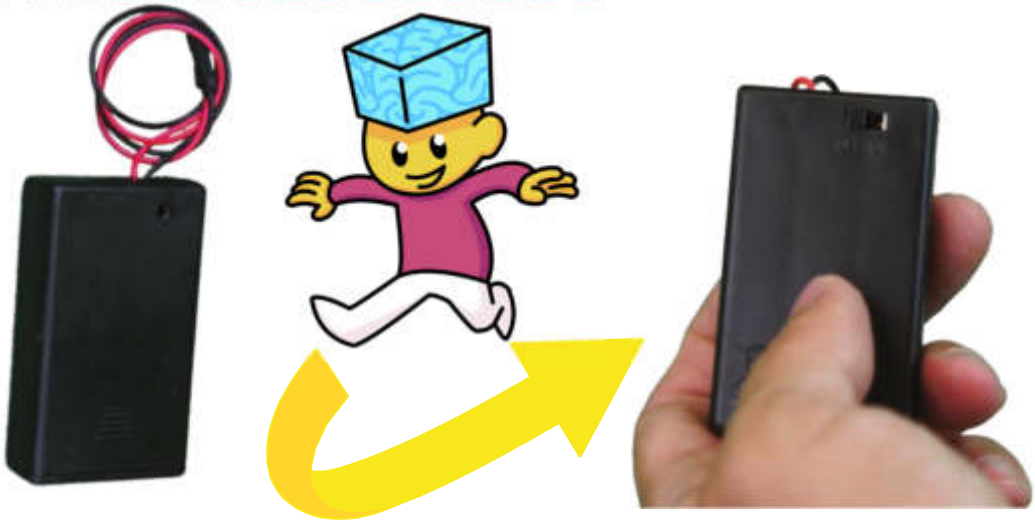
Header Pins

Breadboard

Battery Pack

Task 2: Turn Off the Battery Pack

Make sure the battery pack switch is in the "OFF" position.



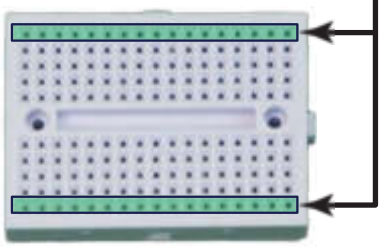
Flip over the battery pack and make the switch is in the "OFF" position.

Task 3: Secure Header Pins to the Edges of the Breadboard

Populate the sockets on the two edges of the breadboard with the header pins.

Break apart the header pins with your fingers

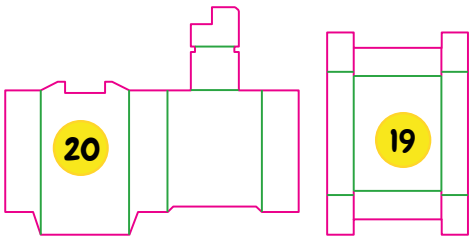
Secure header pins to ALL holes/sockets along the two edges of the breadboard.



Tools:

-OR-

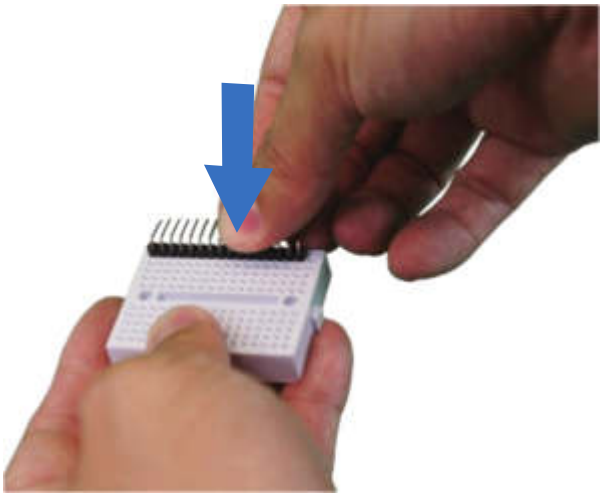
Cutout Pieces:



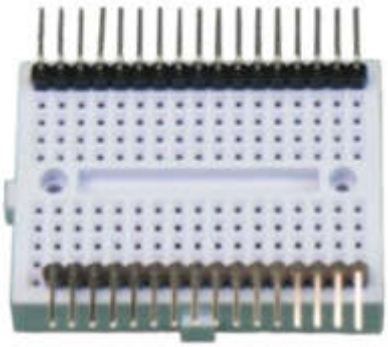
Header Pins

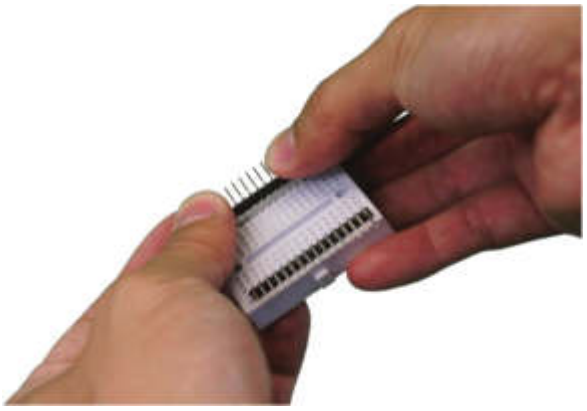
Breadboard

Battery Pack



Firmly push down the short side of the header pins into the breadboard.





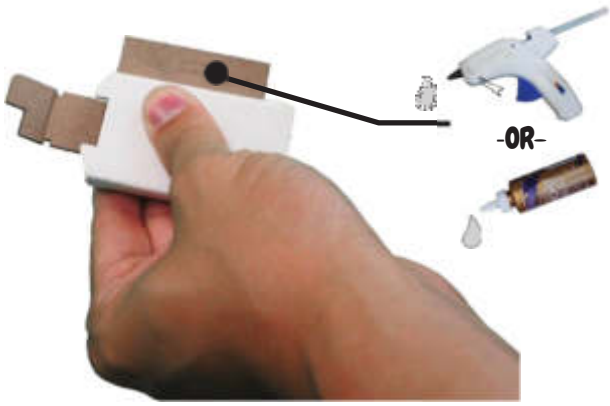
Make sure that BOTH edges have header pins.

Task 4: Glue Together the Battery Holder

Glue together cutout piece 20 to form the Battery Holder. Insert the Battery Pack into the Battery holder with the switch facing outwards.

Form a box and apply adhesive to the side flap. Hold it together until the glue sets up.

Fold the cutout piece along **ALL** score lines.

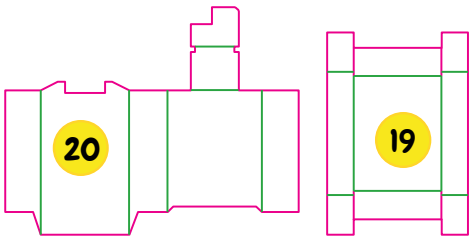


Step 2: Assemble the Battery Holder & Breadboard Tray

Tools:

-OR-

Cutout Pieces:



Header Pins

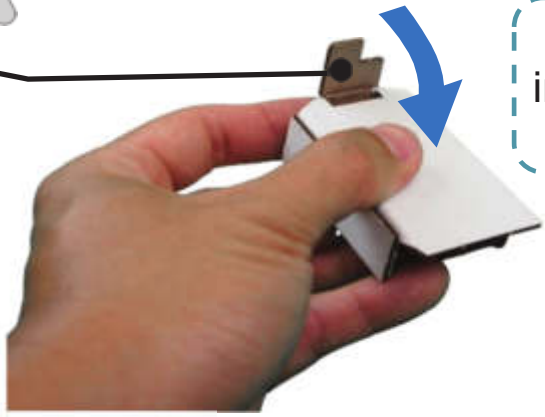
Breadboard

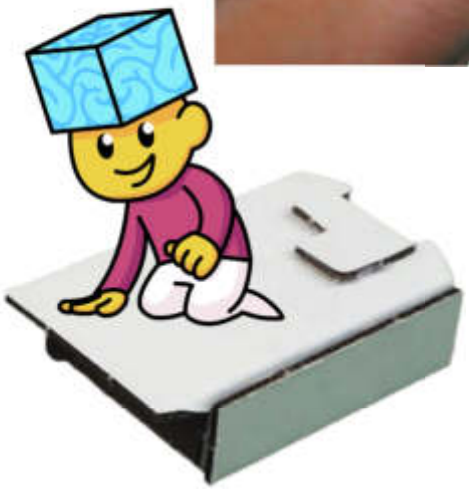
Battery Pack

Apply glue to the last flap and fold it down

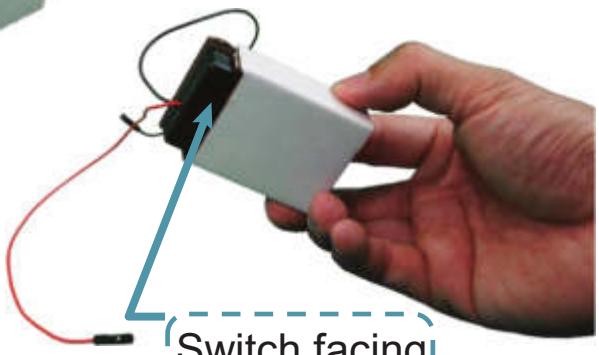
-OR-

Slide flap into the two notches.



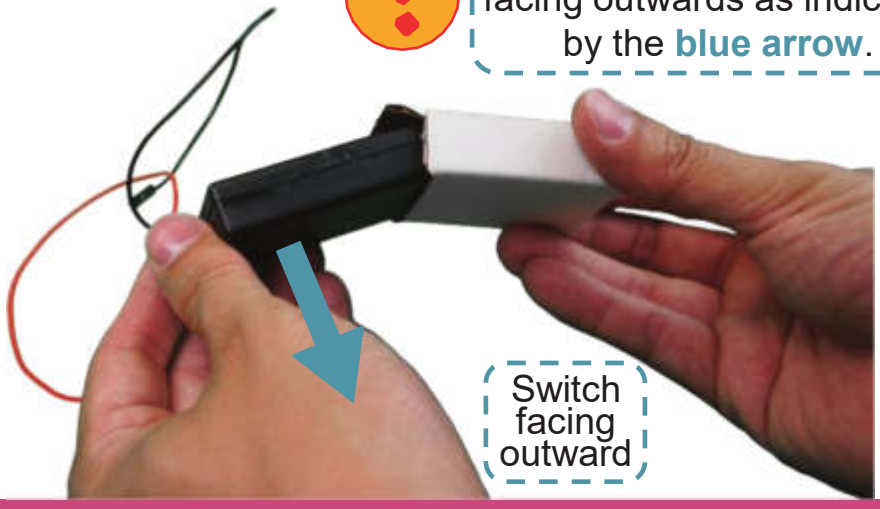


Completed Battery Holder

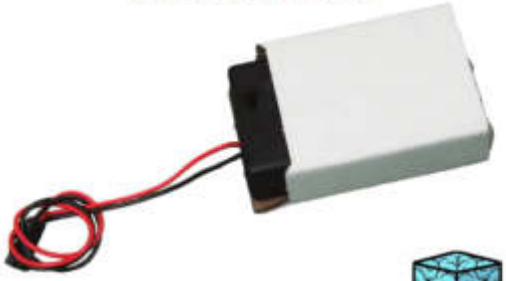


Switch facing outward

Make sure the switch is facing outwards as indicated by the **blue arrow**.



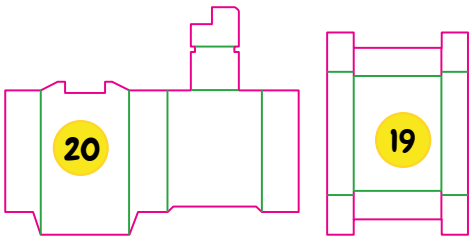
Switch facing outward



Tools:

-OR-

Cutout Pieces:



Header Pins

Breadboard

Battery Pack

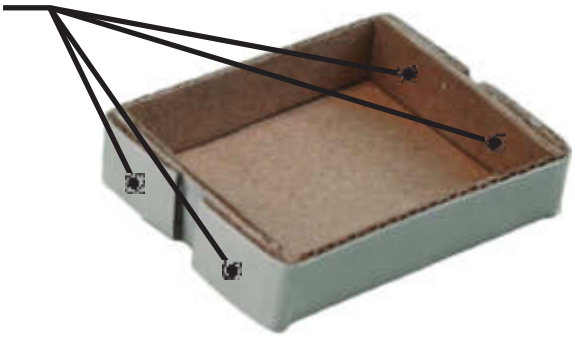
Task 5: Glue Together the Breadboard Tray

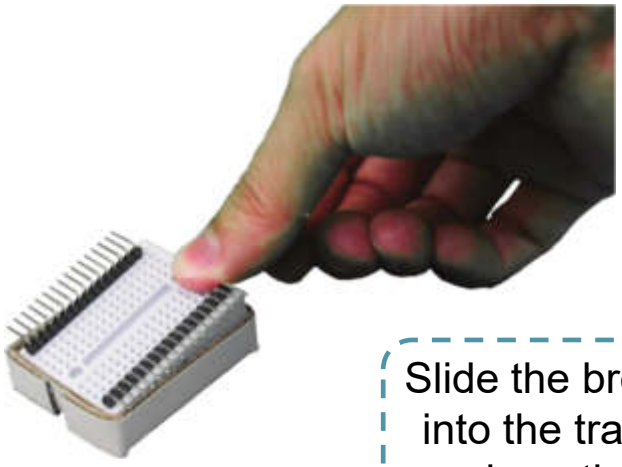
Fold cutout piece 19 along the score lines then glue the flaps together. Insert the breadboard with the header pins into the tray.

Fold along **ALL** marked lines

-OR-

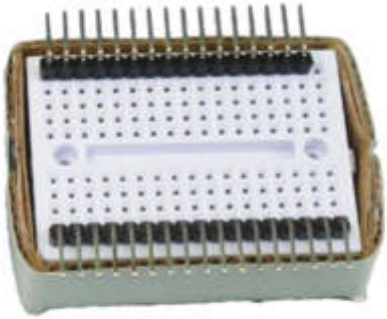
Glue the flaps together





Slide the breadboard into the tray. It may be a tight fit.

Tacky Glue requires about 1 to 2 minutes to hold the two pieces together.



Cutout Pieces:

2X  RGB LED

8X  Male (Pin)

8X  Female (Socket)

Push-Lock Switch

Breadboard Tray

Battery Holder

Task 1: Wire the Two RGB LEDs

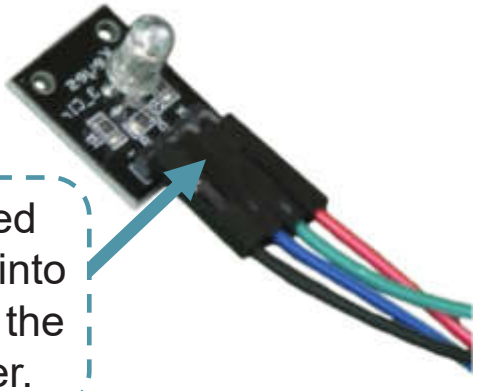
Insert female (socket) wires to the two RGB LED's.

(B)lue (G)reen

(-) or Ground (R)ed

Each of the pins on the RGB LED is clearly marked.

Insert different colored female (socket) wires into each pin. The color of the wires does not matter.



A total of eight Female-Female (Socket) Wires of Various Colors will be used to wire both RGB LEDs

Female (Socket) Wire

Cutout Pieces:

2X  RGB LED

8X  Male (Pin)

8X  Female (Socket)

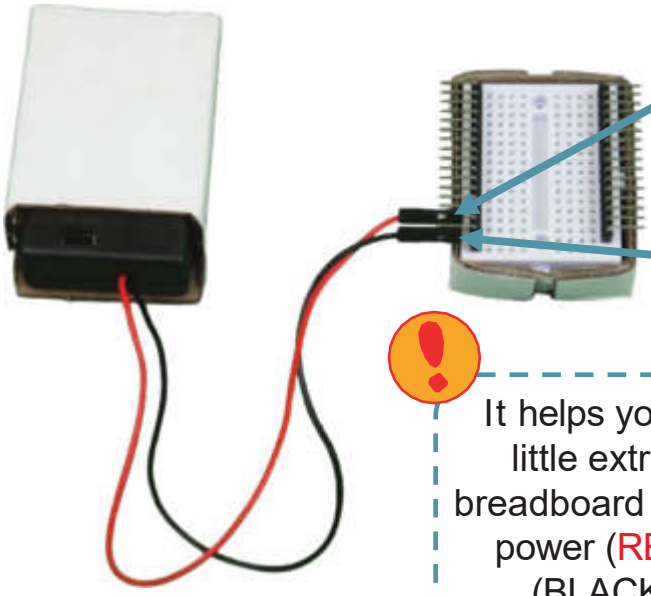
Push-Lock Switch

Breadboard Tray

Battery Holder

Task 2: Connect the Battery Holder to the Breadboard

Connect the Battery Holder to the breadboard. Connect the ground (BLACK) wire to one pin then connect the power wire (RED) to another pin.



Power (RED) Wire

Ground (BLACK) Wire

It helps you keep create a little extra room on the breadboard by separating the power (RED) and ground (BLACK) wires a bit.

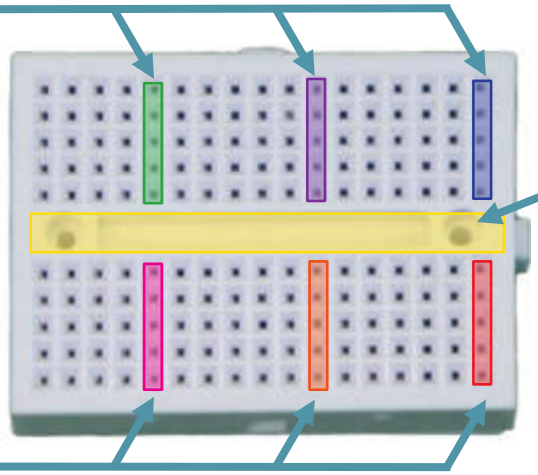
How Does A Breadboard Work?

Breadboards make prototyping electrical circuits easier because there is no need to solder the wires together.

There is a “Divide” or “River” that divides the breadboard into two halves. The sockets (holes) are *ONLY* connected together in a row. Refer to the photo.

Sockets (Holes): All sockets along the shorter length are connected.

Sockets (Holes): Sockets ARE NOT connected across the “Divide”/”River.”



“Divide” or “River”: Divides the breadboard into two halves.

Cutout Pieces:

2X  RGB LED

8X  Male (Pin)

8X  Female (Socket)

Push-Lock Switch

Breadboard Tray

Battery Holder

Task 3: Connect One RGB LED to the Breadboard

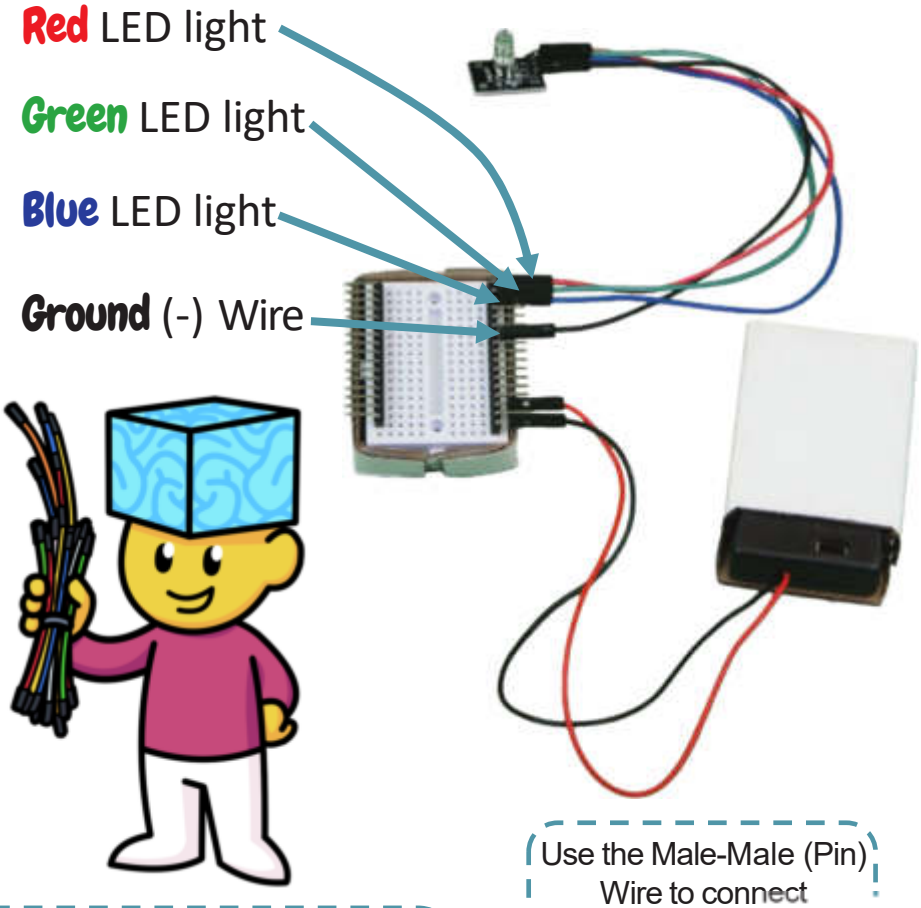
Connect the four (4) wires from one of the RGB LED to the breadboard. Separate the ground (-) wires from the color LED wires. PLEASE NOTE the color of the wire MAY NOT match the color of the LED light and the ground or "-" wire does not necessarily need to be black.

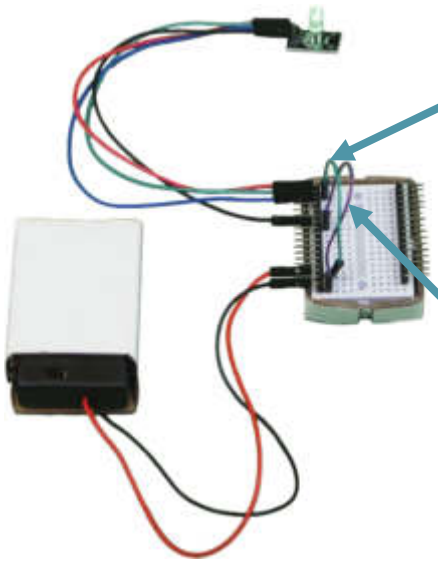
Red LED light

Green LED light

Blue LED light

Ground (-) Wire

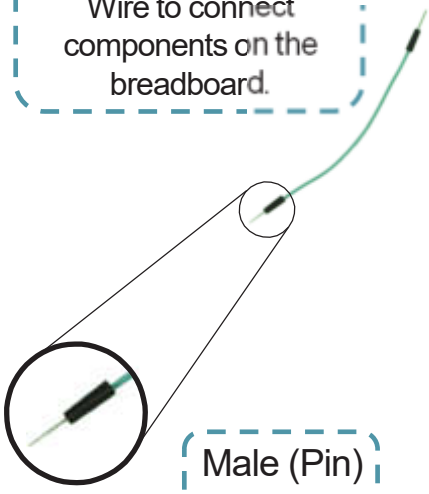




Connect the power ("+") pin from the battery to one of the LED light pins with a male-male wire. In this example a green male-male wire was used.

Connect the ground ("-") pin from the battery to the ground ("-") pin from the RGB LED with a male-male wire. In this example a purple male-male wire was used.

Use the Male-Male (Pin) Wire to connect components on the breadboard.



Male (Pin) Wire

Cutout Pieces:

2X  RGB LED

8X  Male (Pin)

8X  Female (Socket)

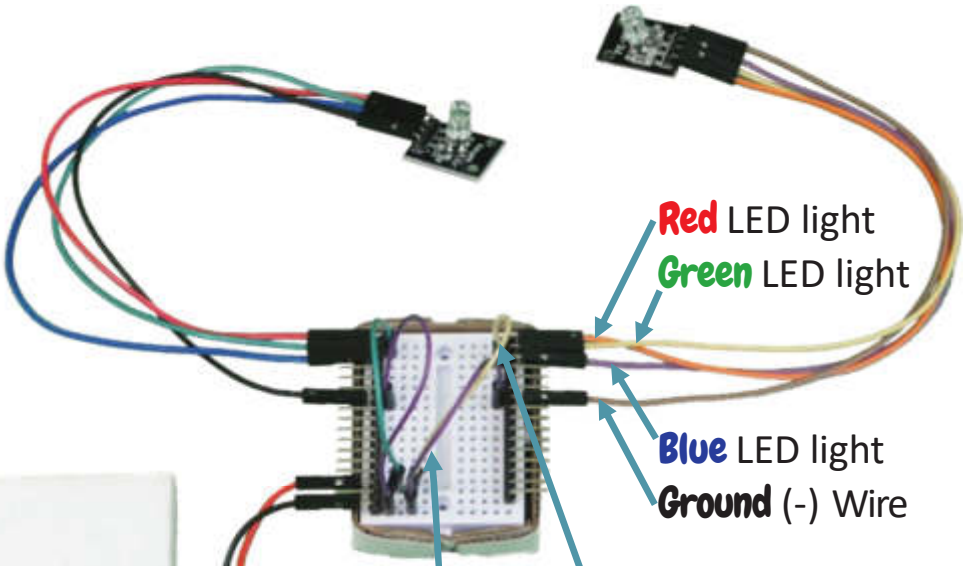
Push-Lock Switch

Breadboard Tray

Battery Holder

Task 4: Connect the Second RGB LED to the Breadboard

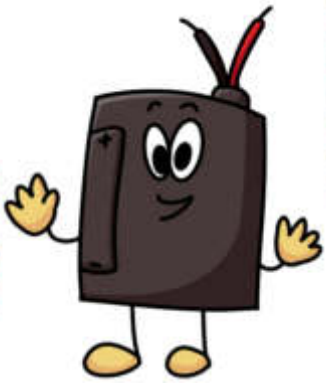
Connect the four wires from the second RGB LED to the breadboard. Separate the ground (-) wires from the color LED wires. PLEASE NOTE the color of the wire MAY NOT match the color of the LED light and the ground or "-" wire does not necessarily need to be black.



Connect the power ("+") pin from the battery to one of the LED light pins with a male-male wire. In this example a yellow male-male wire was used.

Connect the ground ("-") pin from the battery to the ground ("-") pin from the RGB LED with a male-male wire. In this example a purple male-male wire was used.

Make switch on the battery pack in on the "OFF" position.



Cutout Pieces:

2X  RGB LED

8X  Male (Pin)

8X  Female (Socket)

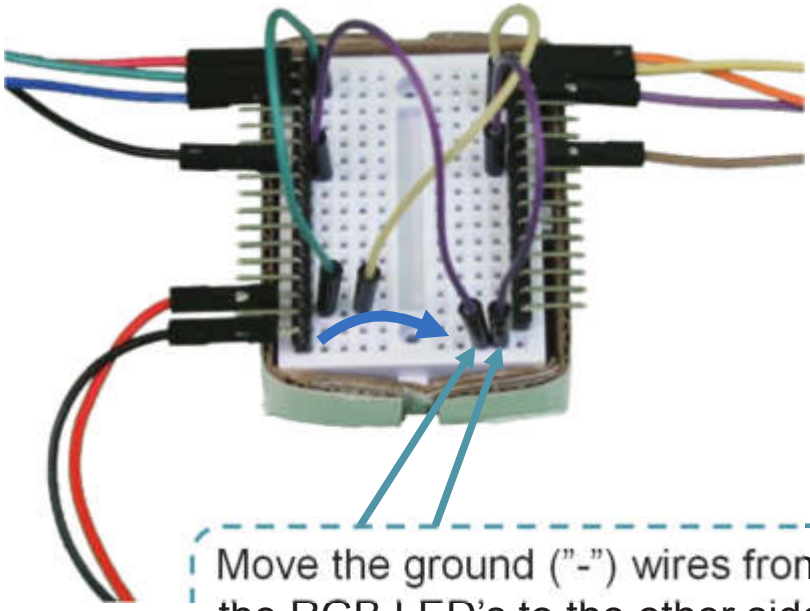
Push-Lock Switch

Breadboard Tray

Battery Holder

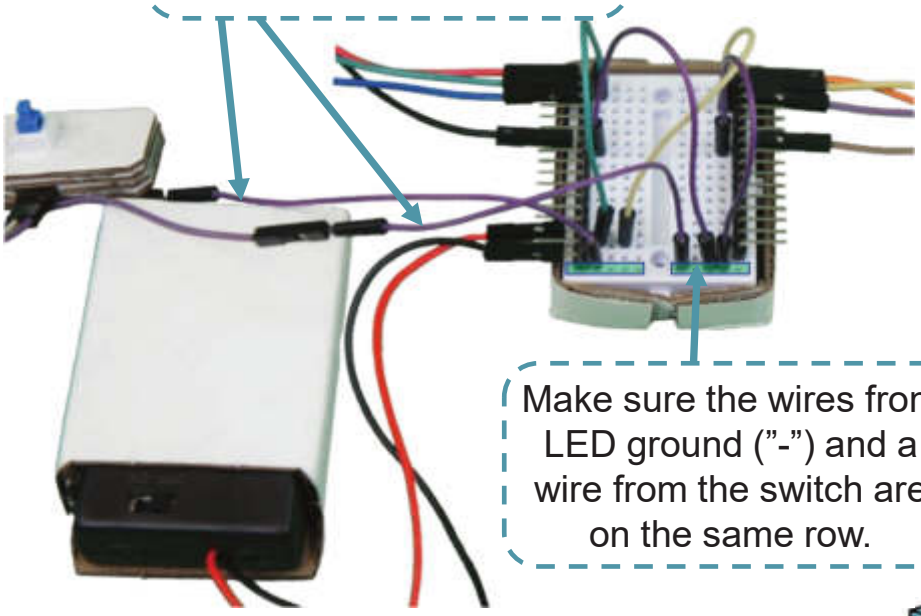
Task 5: Connect the Switch to the Breadboard

Move the ground ("-") wires from the RGB LEDs to the other side of the "Divide"/"River" then connect the switch into the circuit.



Move the ground ("-") wires from the RGB LED's to the other side of the "Divide" or "River."

Connect a wire from the switch to one side of the "Divide" then connect the other wire to the other side.



Make sure the wires from LED ground ("-") and a wire from the switch are on the same row.

Cutout Pieces:

2X  RGB LED

8X  Male (Pin)

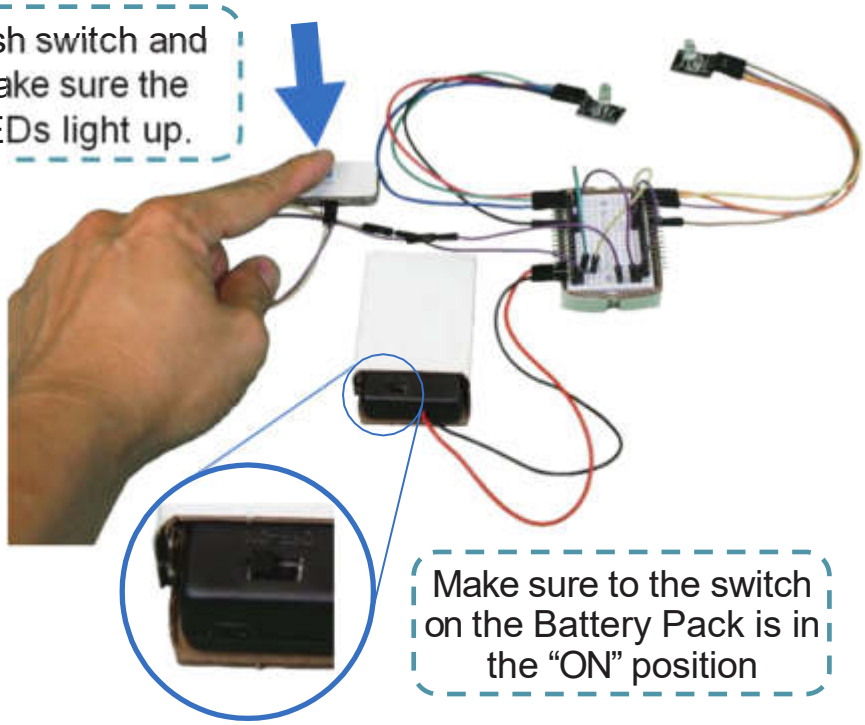
8X  Female (Socket)

Push-Lock Switch

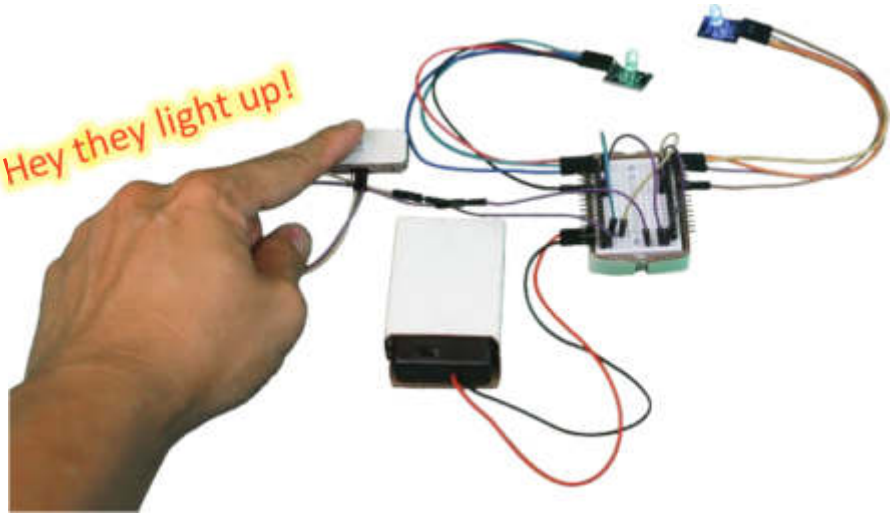
Breadboard Tray

Battery Holder

Push switch and make sure the LEDs light up.



Make sure to the switch on the Battery Pack is in the “ON” position



After checking that the circuit works, disconnect the circuit into its major components.

Breadboard + Tray

RGB #1 + Wires

RGB #2 + Wires

Switch + Wires

Battery + Holder

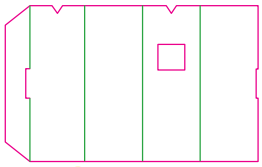
Male-Male Wires

Tools:

-OR-

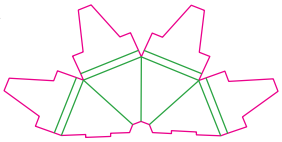
Cutout Pieces:

2X



12 & 13

2X



14 & 15

2X

16 & 17

Task 1: Form the Two Square Tubes

Fold the cutout pieces along all the score lines then glue along the flap to form the square tube. Make sure to make both square tubes.

Fold along the score line. Make sure to fold it all the way.

-OR-

Apply glue along the flap, then form the square tube.

Repeat this task until you have two square tubes.

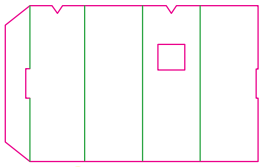
Tacky glue takes longer for the piece to hold together.

Tools:

-OR-

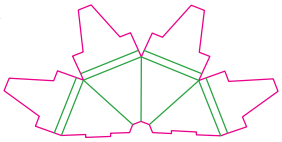
Cutout Pieces:

2X



12 & 13

2X



14 & 15

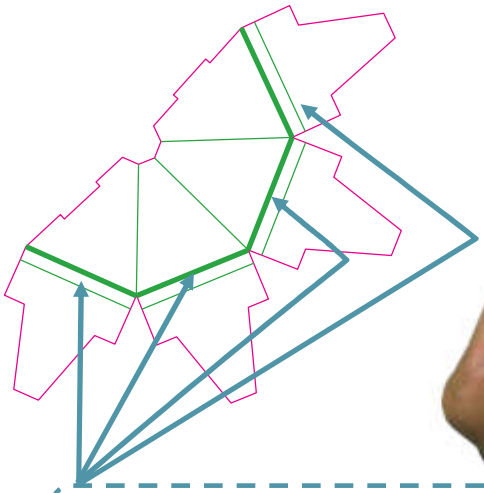
2X

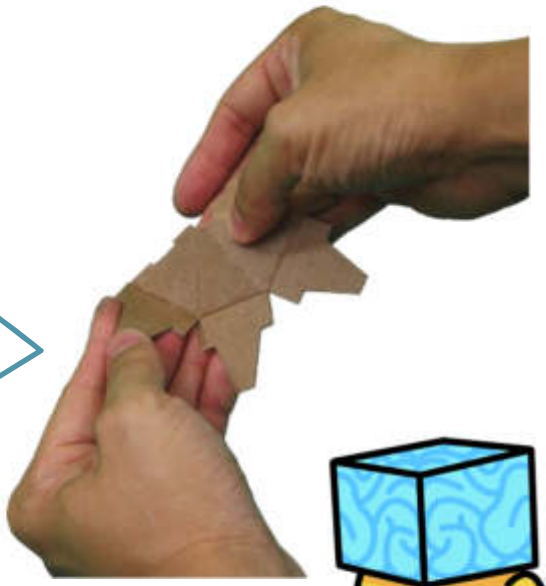
16 & 17

Task 2: Form the Light Reflectors

Fold the cutout pieces along all the score lines then tape the two halves together to form the light reflector. Make sure the white side is on the inside.

Fold along the score line. Make sure the white side is facing inward.





Fold all the green score lines towards the brown side.

Bring the two sides together.

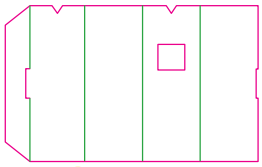
Tape the reflector together.

Tools:

-OR-

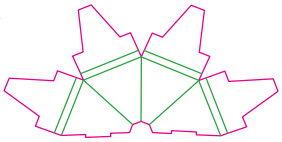
Cutout Pieces:

2X



12 & 13

2X



14 & 15

2X

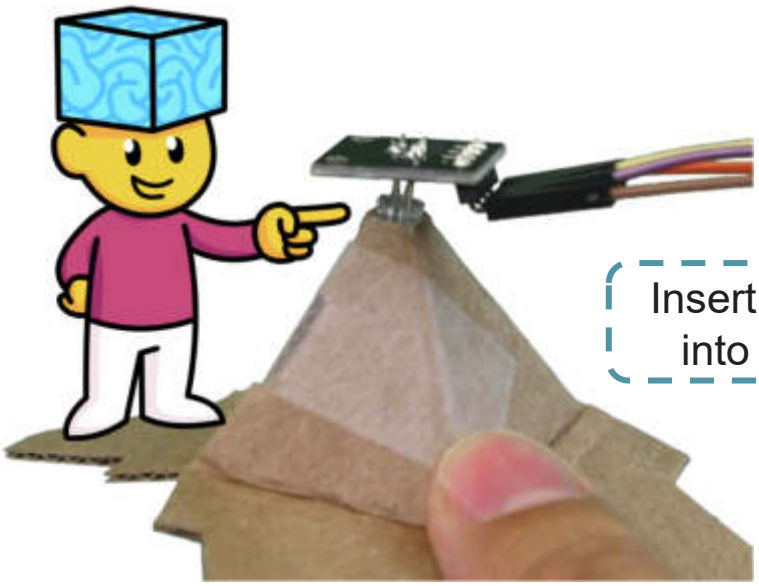
16 & 17

Repeat this task until you assembled two reflectors.

Task 3: Attached the RGB LED's to the Reflectors

Fold the cutout pieces 16 and 17 along all the score lines. Insert the RGB LED into the reflector then hold the RGB LED to the reflector by gluing on 16 or 17.

Fold cutout pieces along the score lines.



Insert the RGB LED into the reflector.

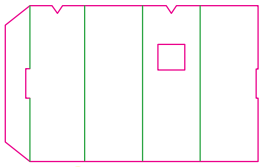
PLEASE NOTE there will be a gap between the RGB LED and the reflector.

Tools:

-OR-

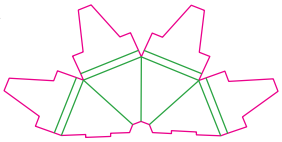
Cutout Pieces:

2X



12 & 13

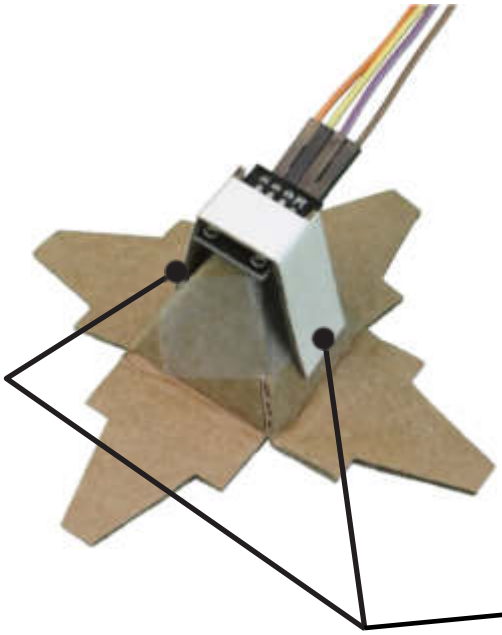
2X



14 & 15

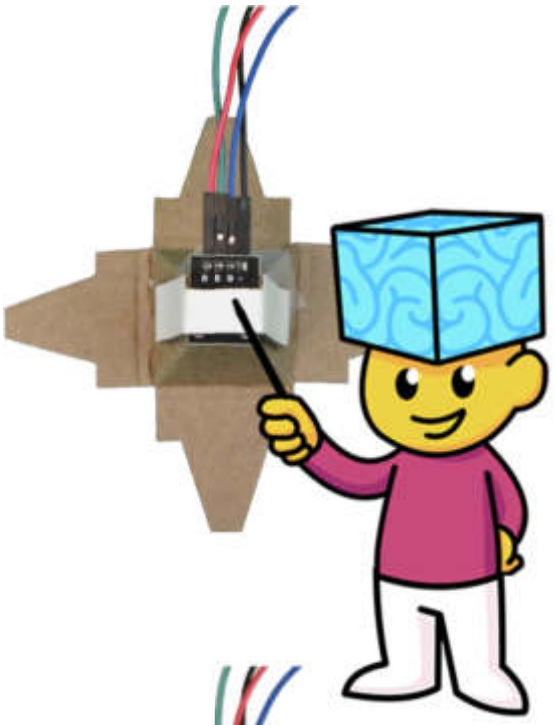
2X

16 & 17

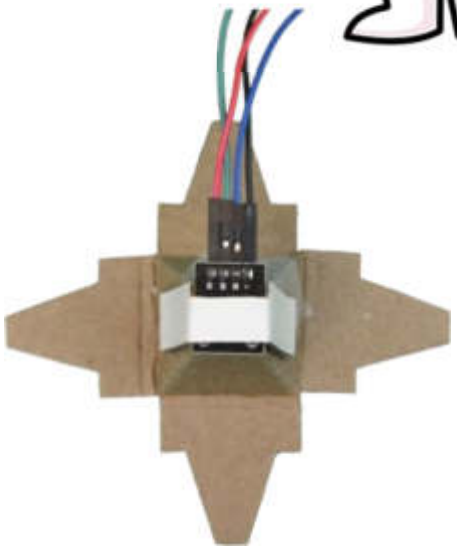


Apply glue to the ends of the cutout piece, then use it to secure the RGB LED in place.

-OR-



Position the notch so you can see the lettering on the RGB LED.



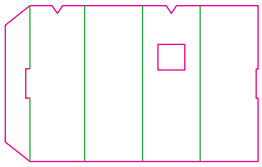
Repeat this task until **BOTH** RGB LED's are secured to their reflectors.

Tools:

-OR-

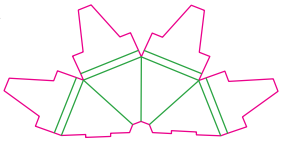
Cutout Pieces:

2X



12 & 13

2X



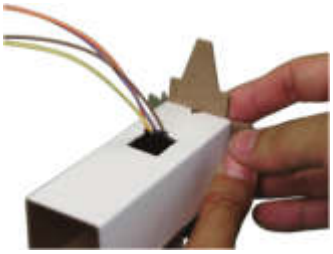
14 & 15

2X

16 & 17

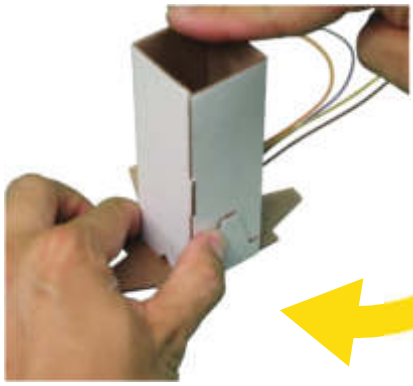
Task 4: Glue the Reflectors to the Square Tubes

Thread the wires through the square hole. Place the square tubes with the reflectors onto a table then fold and glue the flaps to the square tubes.



Thread the wires through the front opening of the tube and out of the square hole.

Place on top of a table, hold it in place then glue the flaps to the square tubes.

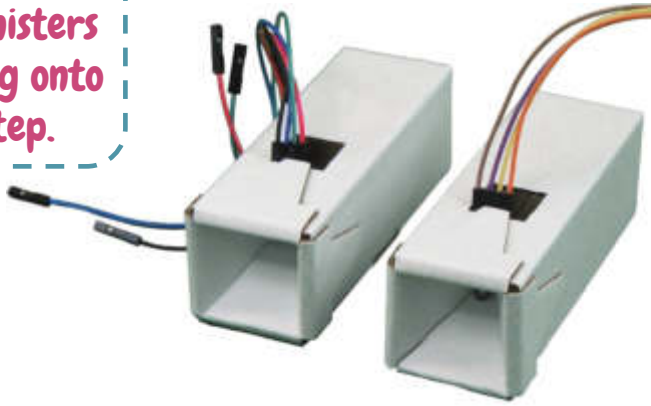


Hold in place until the glue hardens.

If you don't like hot glue, use Tacky Glue instead!

Tacky Glue will take longer to get sticky enough to hold the flaps in place.

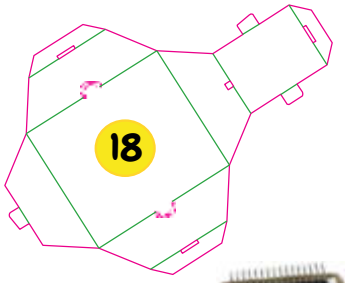
Make sure you have two light canisters before moving onto the next step.



Tools:

-OR-

Cutout Pieces:



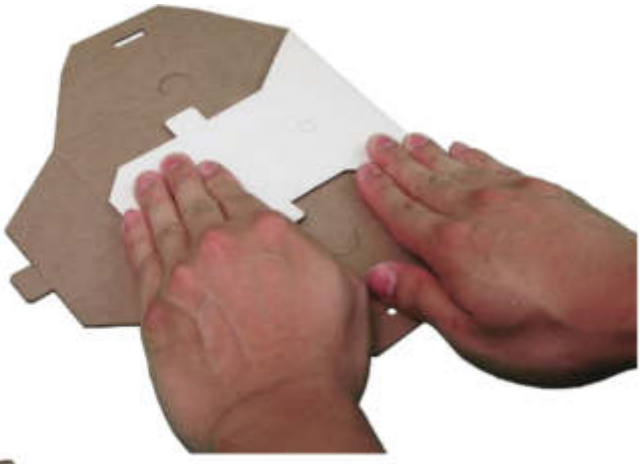
Breadboard Tray

Battery Holder

Task 1: Form the Electronics Box (Cutout Piece 18)

Fold the cutout pieces along all the score lines.

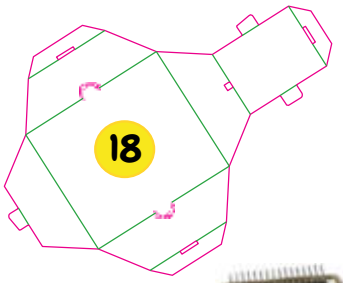
Fold the cutout piece along the score lines.



Tools:

-OR-

Cutout Pieces:

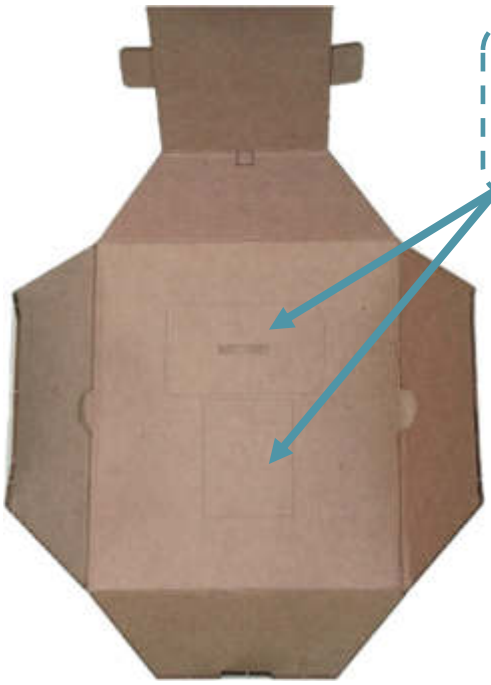


Breadboard Tray

Battery Holder

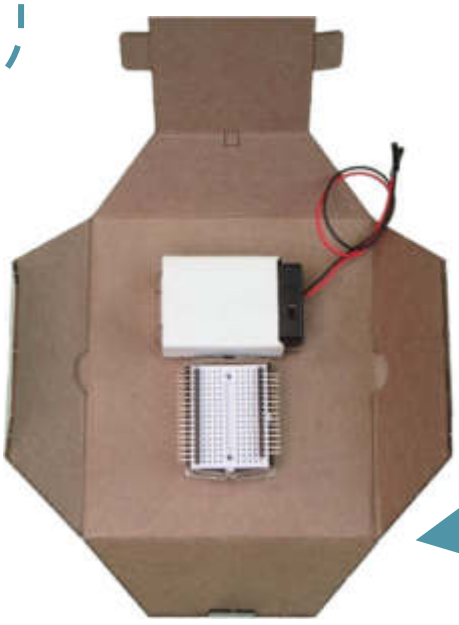
Task 2: Glue the Battery Holder and Breadboard Tray Inside the Electronics Box

Glue the battery holder and breadboard tray inside the box.



Look for the outlines on the inside of the electronics box.

Apply glue to the Battery Holder and adhere it to the inside of the electronics box.

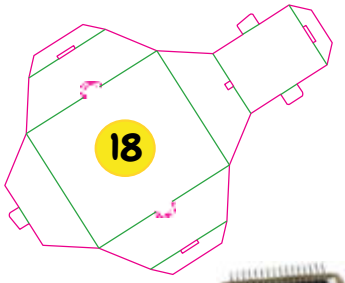


Apply glue to the Breadboard Tray and adhere it to the inside of the electronics box.

Tools:

-OR-

Cutout Pieces:

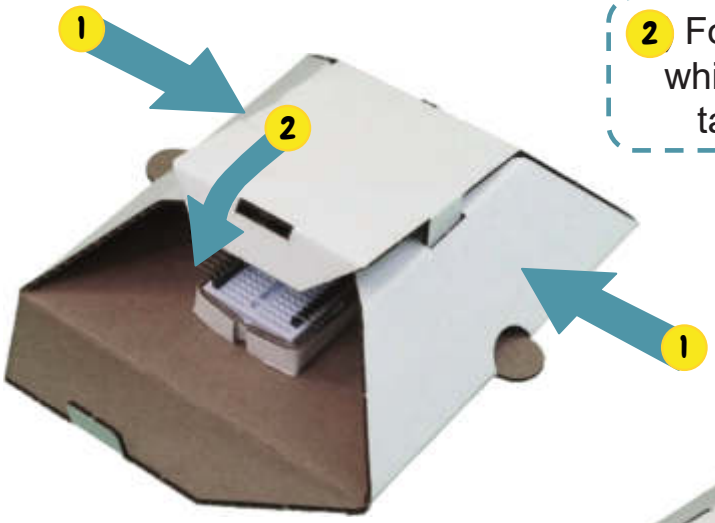


Breadboard Tray

Battery Holder

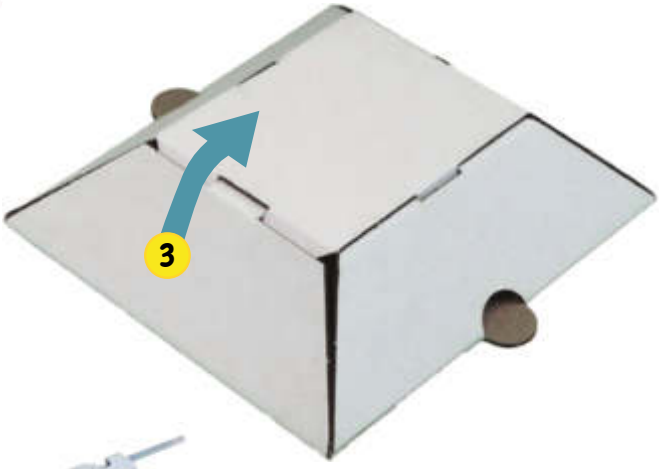
Task 3: Glue the Electronics Box to the Helmet

Tuck in the flaps on the Electronics Box. Center the Electronics Box to the Helmet then glue in place.



2 Fold down the top lid while inserting the two tabs into the slots.

1 Squeeze the sides together.



3 Fold up the flap and insert the tab into the slot.

Flip over the Electronics Box.

Apply adhesive to the four corners of the Electronics Box.

Center the Electronics Box to the helmet then adhere it in place.

Step 6: Glue the Switch & Light Canisters to the Helmet

Tools:

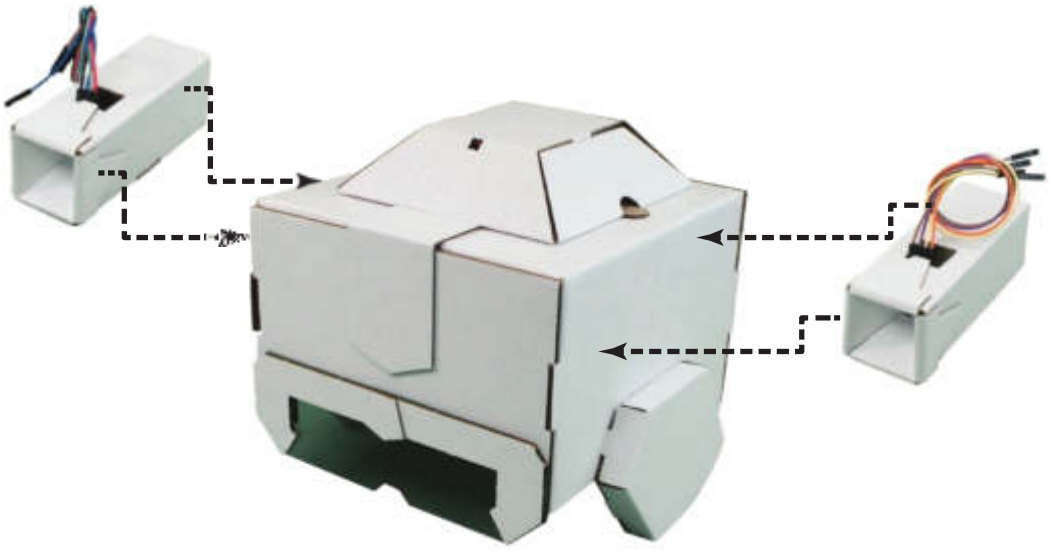
-OR-

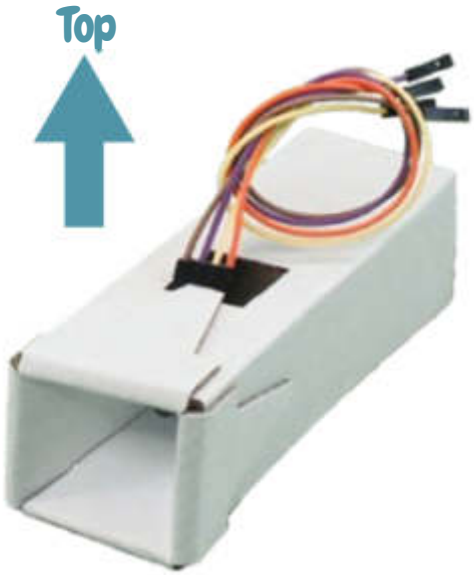
Cutout Pieces:

Task 1: Glue the Light Canisters to the Helmet

Decide where you want the light canisters on the helmet. They DO NOT have to be located on the sides of the helmet. The ONLY restriction is that the wires must stick out from the top.

Decide where do you want the light canisters to be located on the helmet.





It is recommended that the tubes are positioned on the helmet so that the wires stick out through the top making it easier for wires to reach the Electronics Box.

Step 6: Glue the Switch & Light Canisters to the Helmet

Tools:

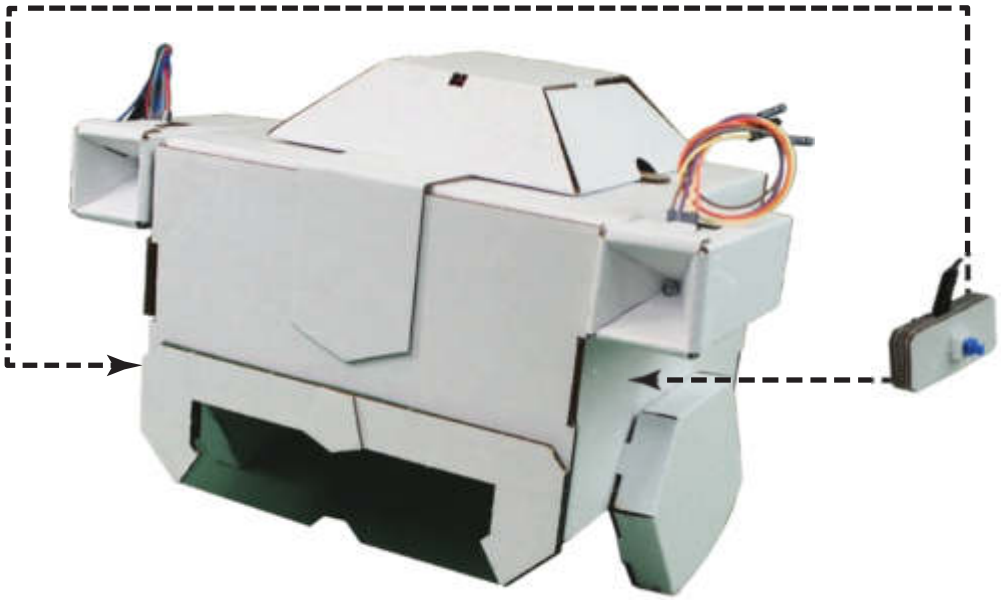
-OR-

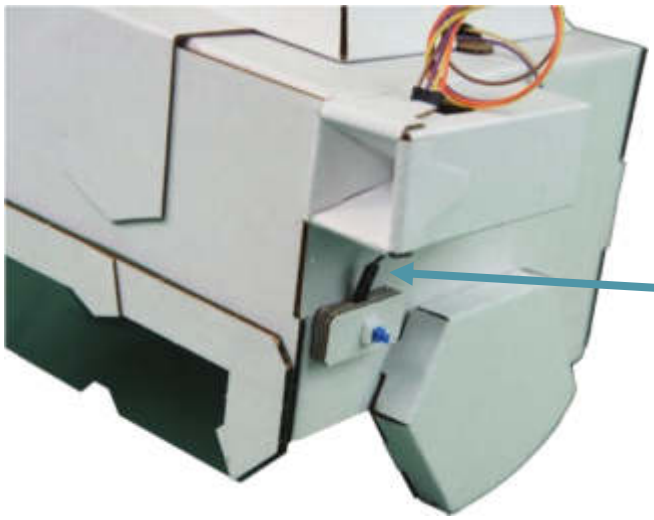
Cutout Pieces:

Task 1: Glue the Switch to the Helmet

Decide where you want the switch on the helmet. The ONLY restriction is that the wires should stick out from the top. It DOES NOT have to be located on the sides.

Decide where you want the switch to be located on the helmet.

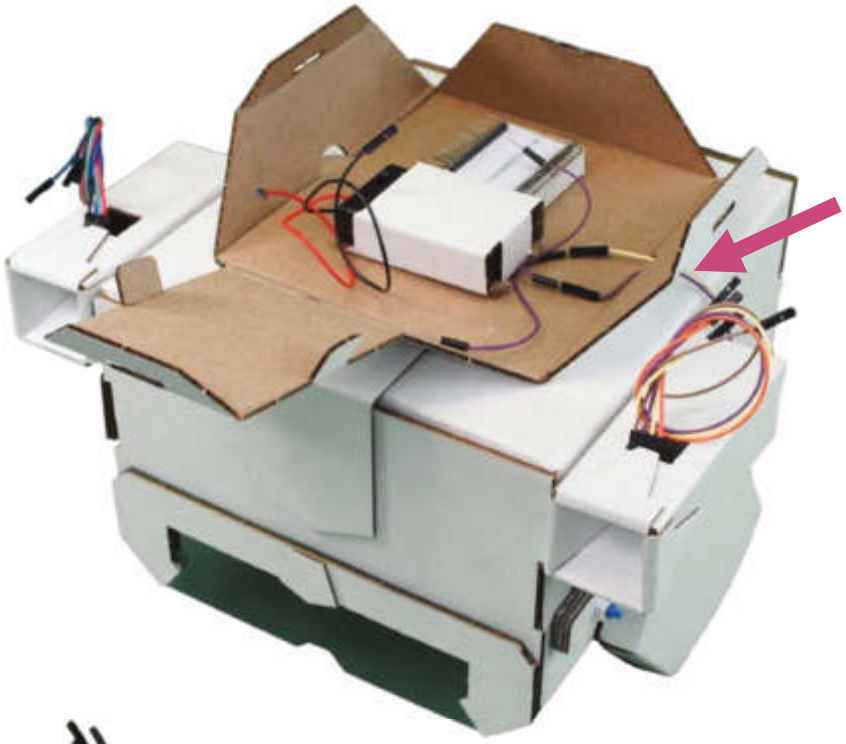




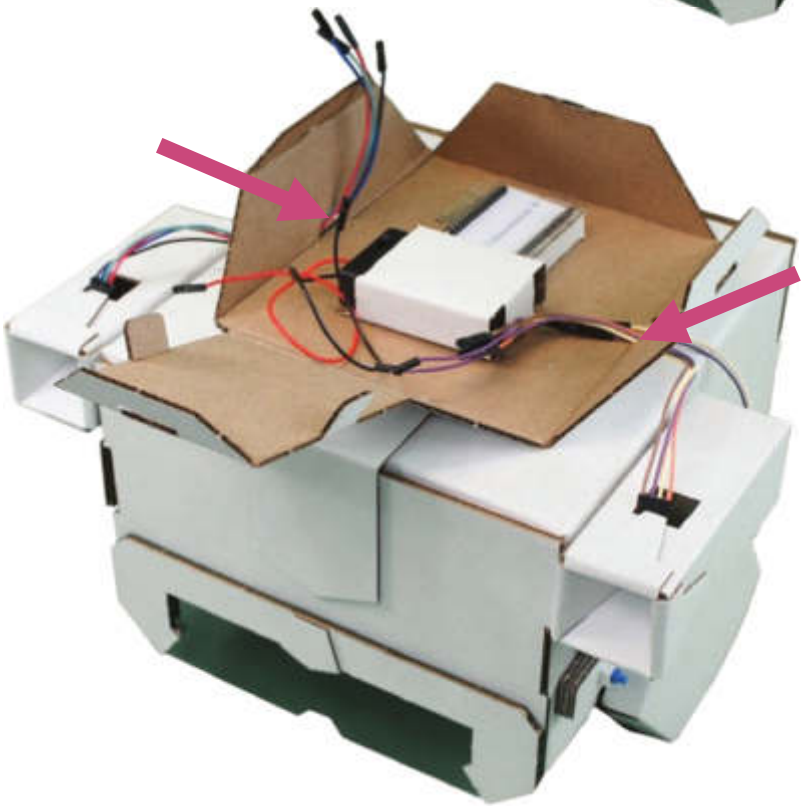
It is recommended that the switch is positioned on the helmet so that the wires stick out through the top making it easier for wires to reach the Electronics Box..

Task 1: Thread the Wire Through the Side Holes

Thread the wires from the RGB LED's and the switch through the side holes on the electronics box.



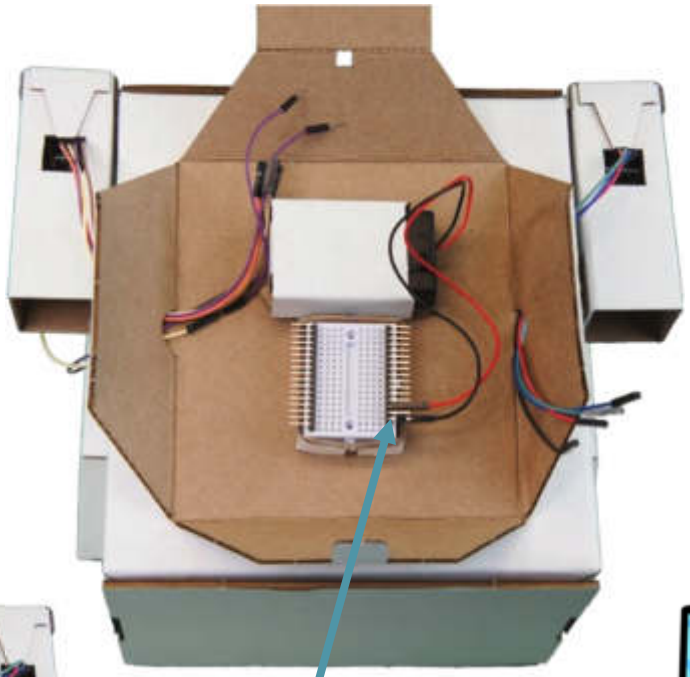
Thread the two switch wires through the side hole.



Thread the RGB LED wires through the side holes.

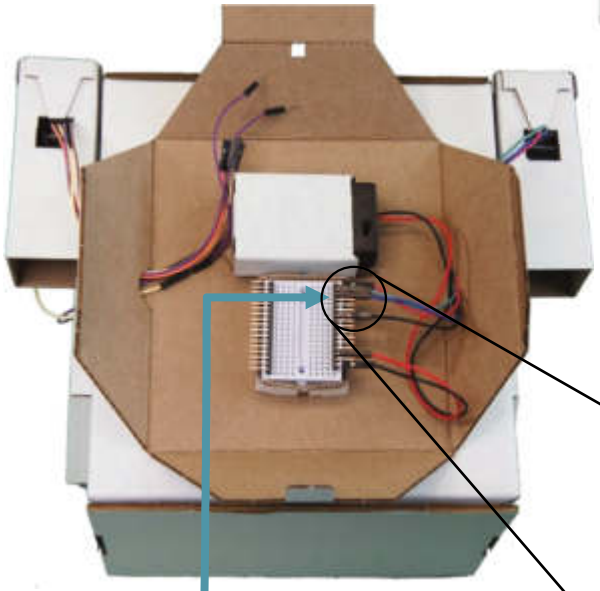
Task 2: Wire the Electronics to the Breadboard

Connect the battery wires to the breadboard then connect the RGB LED wires. If you forgot which color wire corresponds to the ground (-), (R)ed, (G)reen, or (B)lue pins on the LED, look through the opening of the light canister.

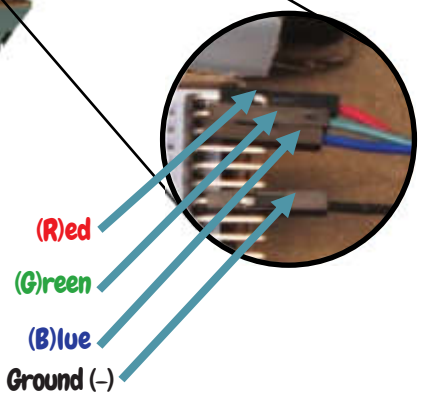


Leave one pin in between the power (red) wire and the ground (black) wire. This helps keep the wiring organized.

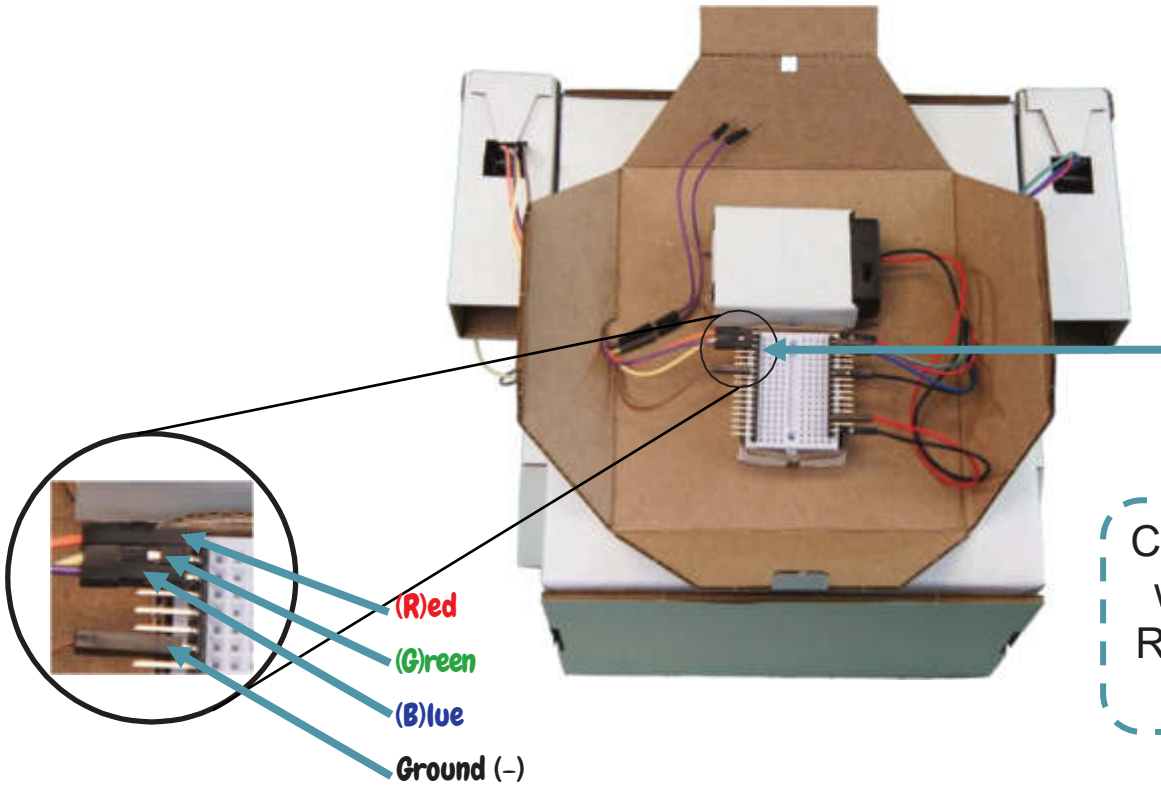
Connect the two battery wires to the breadboard.



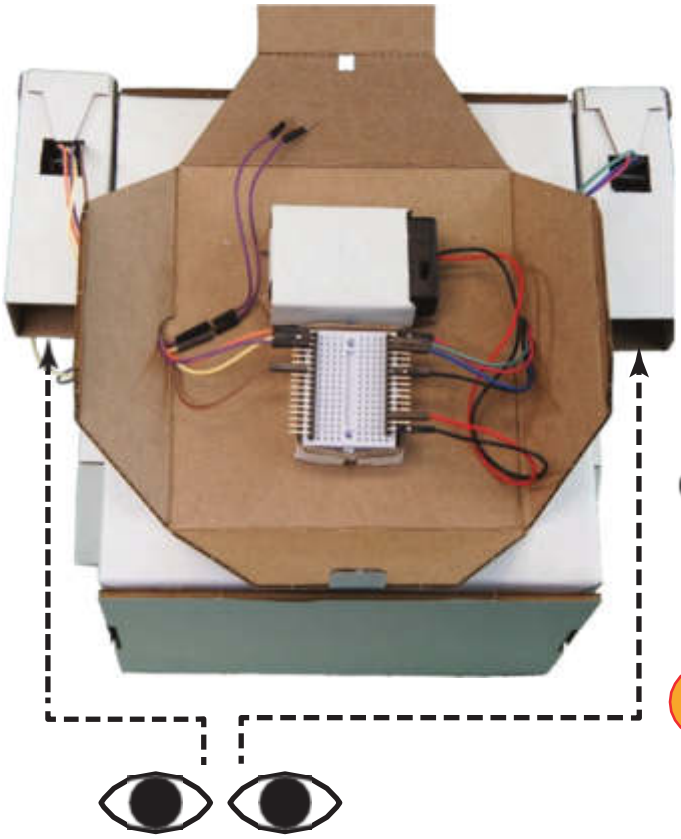
Connect the four wires from the RGB LED to the breadboard.



To help keep the wires organized separate the ground wire from the other wires .



Connect the four wires from the RGB LED to the breadboard.



To help keep the wires organized separate the ground wires from the wires connected to the LEDs color lights.

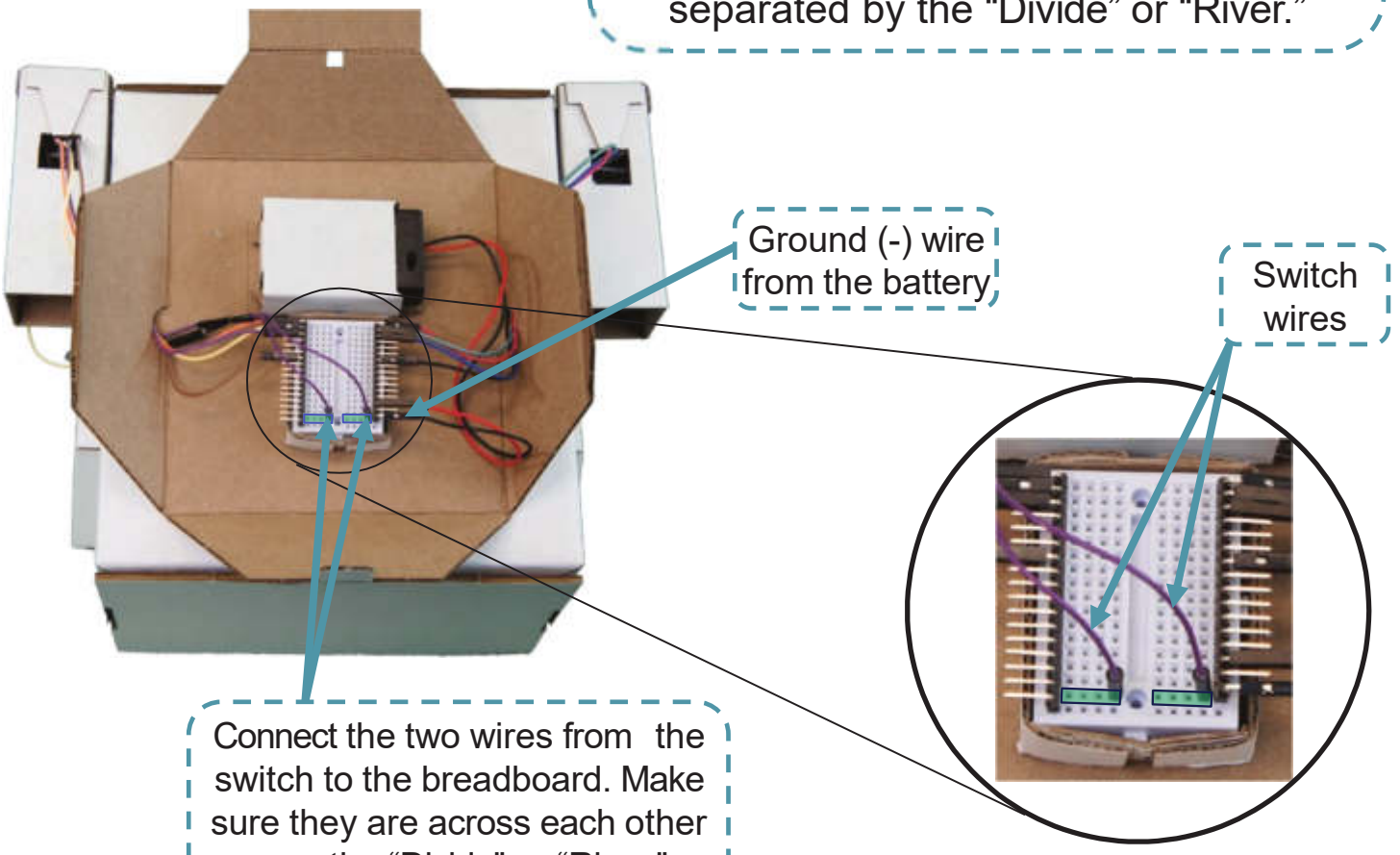
Look through the back of the light canisters if you forgot which color wire corresponds to the ground (-), (R)ed, (G)reen, or (B)lue pins of the LED.

Task 3: Wire the Switch to the Breadboard

Connect the two wires from the switch to the breadboard.
Make sure you do two things:

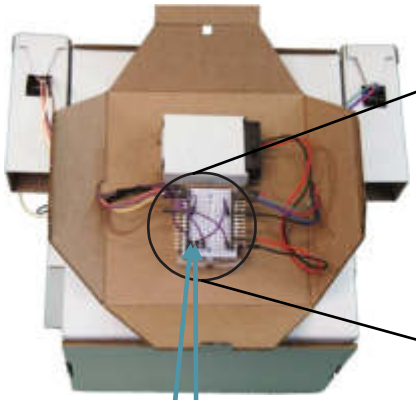
(1) Connect the wires on the SAME row as the ground (-) wire from the battery
(2) Be sure to connect the opposite sides of the “Divide” or “River.”

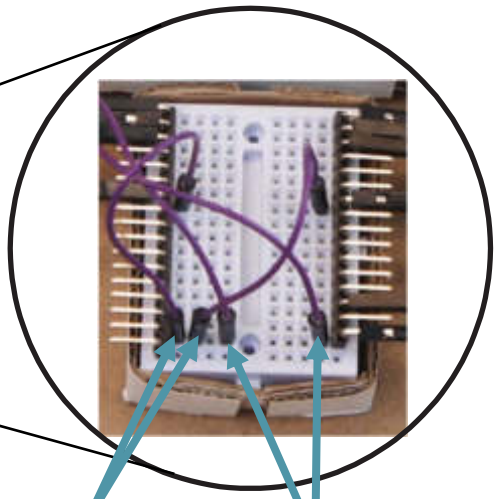
PLEASE NOTE: The switch wires are connected on the same row as the ground (-) wire from the battery. Look at the area highlighted in green. The two wires from the switch are across each other separated by the “Divide” or “River.”



Task 4: Power the Lights

Be sure to connect one of the switch wires and both RGB LED ground wires together on the same row across from the battery ground (-) pin. Using male-male wires connect the RGB LED's color pins to the power of the battery.

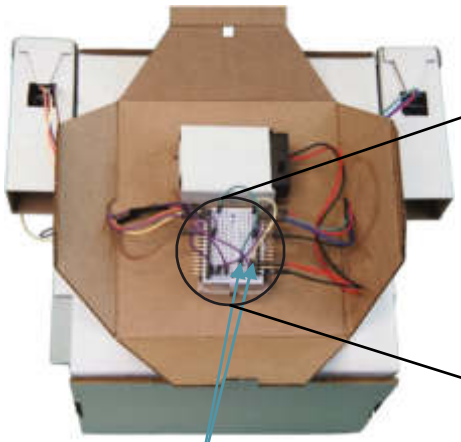


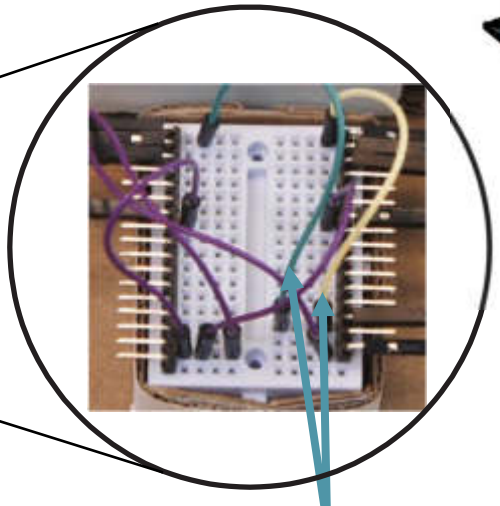


Connect the two male wires on the side OPPOSITE of the battery ground pin then connect these wires to the ground pins of the RGB LED.

Ground wires to the RGB LEDs.

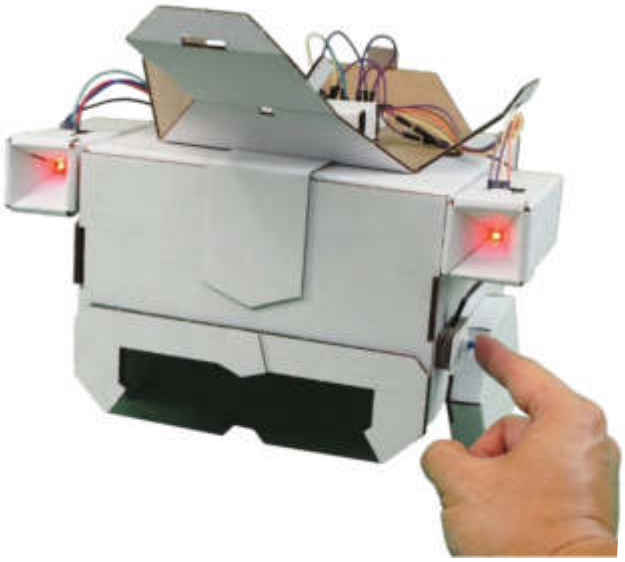
Switch wires





To finish the circuit, connect the two male wires on the same side and same row as the power (red) wire from the battery, then to a color pin on each of the RGB LED's.

Male wires to one of the colors on each of the RGB LED's.



To test the finished circuit, push the switch to light up the LED's.

Try lighting up different colors or mixing the colors.

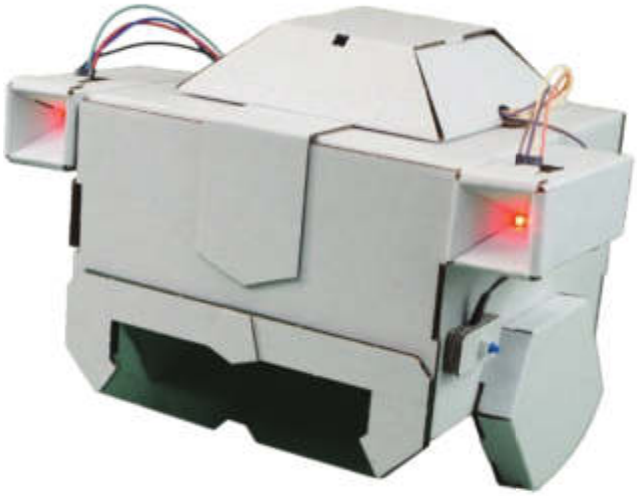
If the LEDs Don't Light Up:

*Make sure your batteries are in correctly inside the battery pack and the switch is turned on.

*Are the wires connected in the appropriate places?

*Make sure there are no loose wire connections.

*Is there a complete electrical path from the battery, to the RGB LEDs, to the switch, and back to the battery?

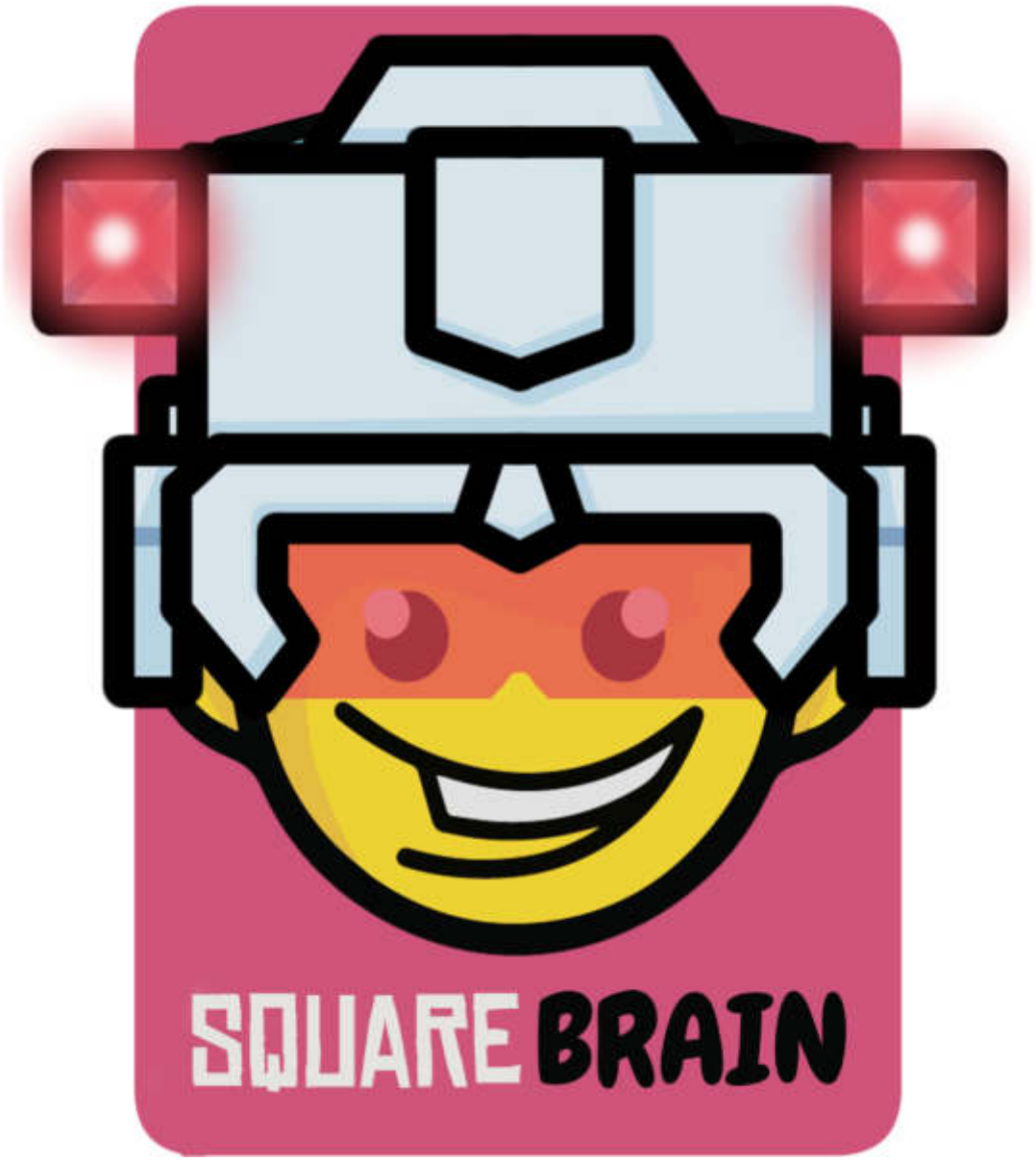


Close up the electronics box and your helmet is ready to wear!

Show decorating the kit

What can YOU make with YOUR SquareBrain Helmet?


You've
reached
THE END


SQUARE BRAIN