

Materials

Your kit should have all the materials to make 2 houses:

1 x Electric Paint 10ml

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2 x pre-cut paper house templates, (4 pieces of paper)

2 x Blue LEDs

2 x Yellow LEDs

2 x 100K Resistors

2 x LDRs (202403)

2 x Transistors (BC548)

2 x 9V Battery Clips

2 x 9V Batteries

Sticky Dots

Stickers



Step 1

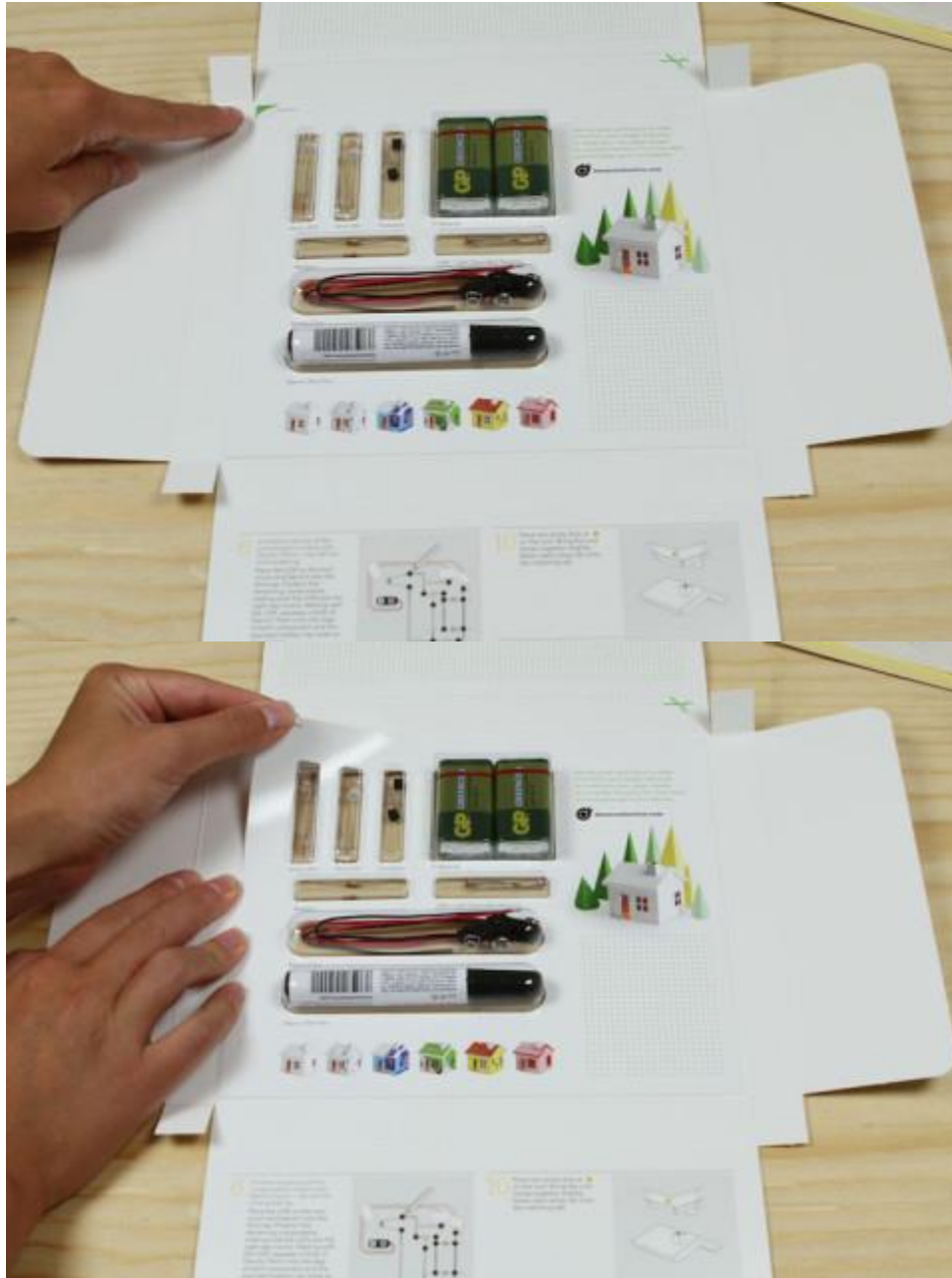
Open the Box

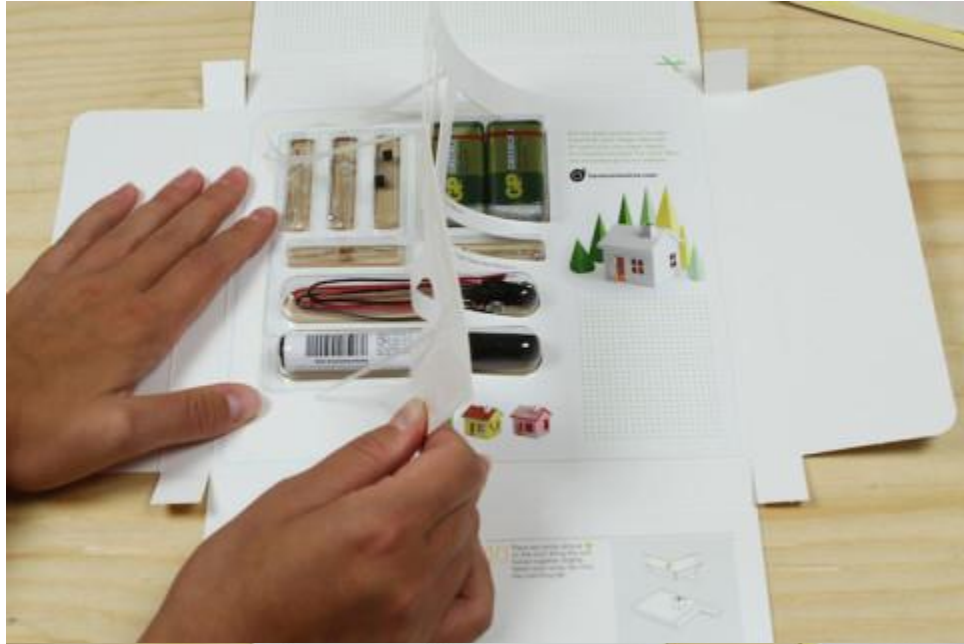


Step 2

Remove Blister

Separate the cardboard from the top left corner.



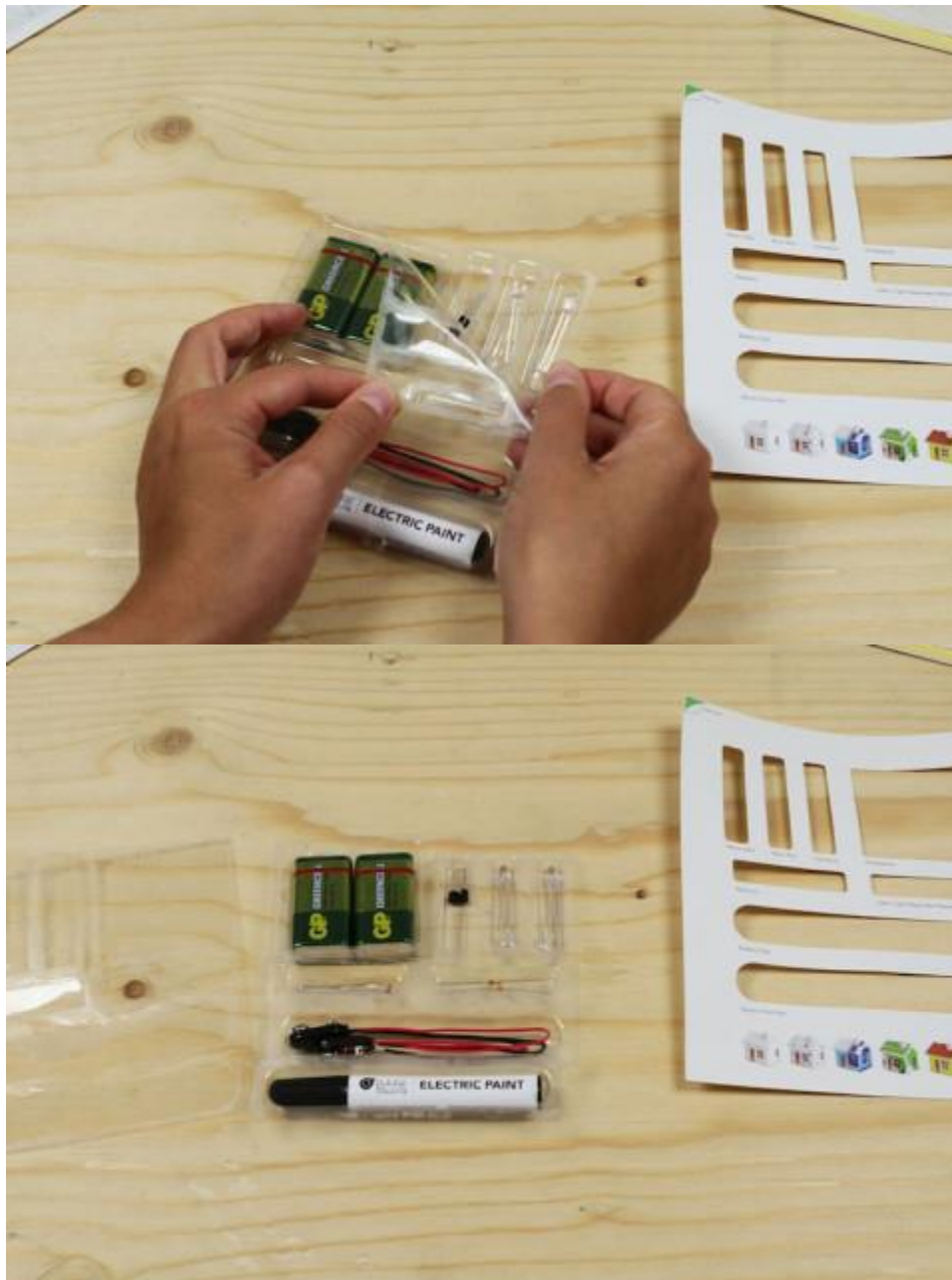


Step 3

Open Blister

Remove the backing sheet to remove components.

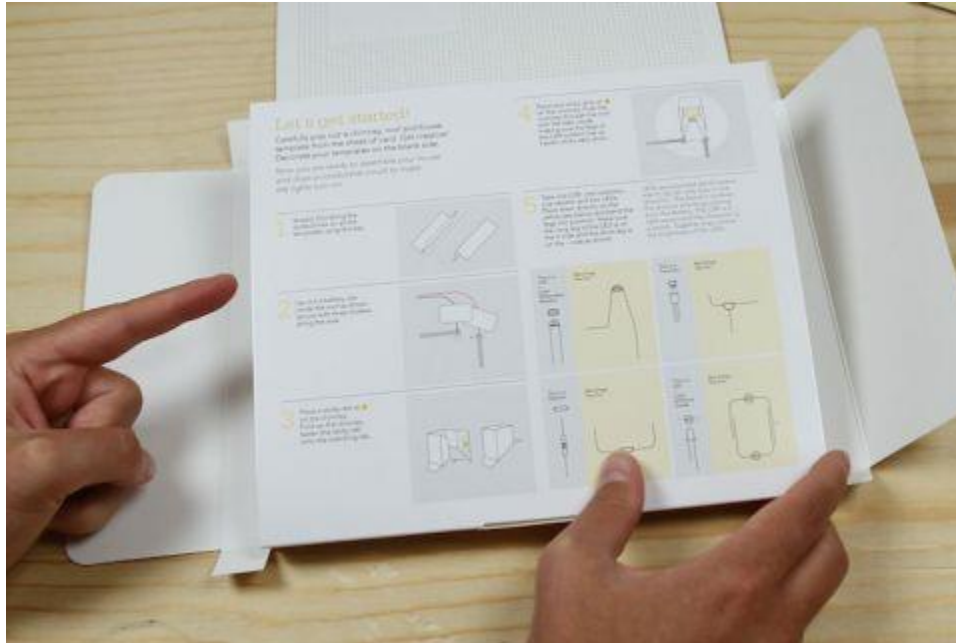
Make sure to remember which LEDs are blue and which ones are yellow!



Step 4

Instructions

Picture instructions are printed on the packaging, so if anything is unclear you can check there for reference.



Step 5

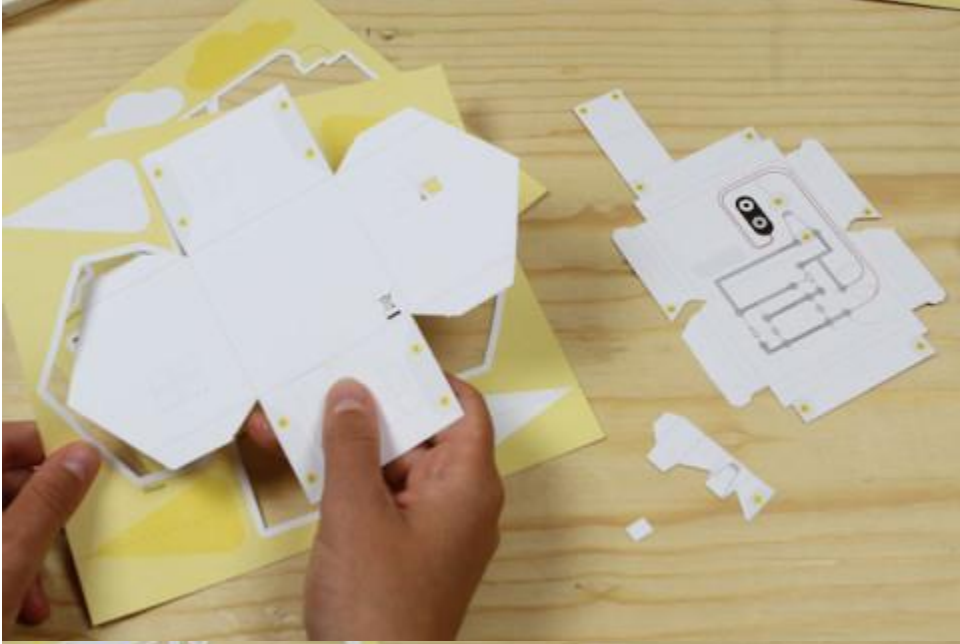
Pop out the templates

Carefully pop out a chimney, roof and house template from the sheet of card. They should come away easily.

Get creative! Decorate and colour in your templates on the blank side, why not draw on window boxes or roof shingles?

Don't forget to pop out the windows, and remember not to throw away the backing sheet yet, you can cut out the trees and clouds to decorate your village scene later!





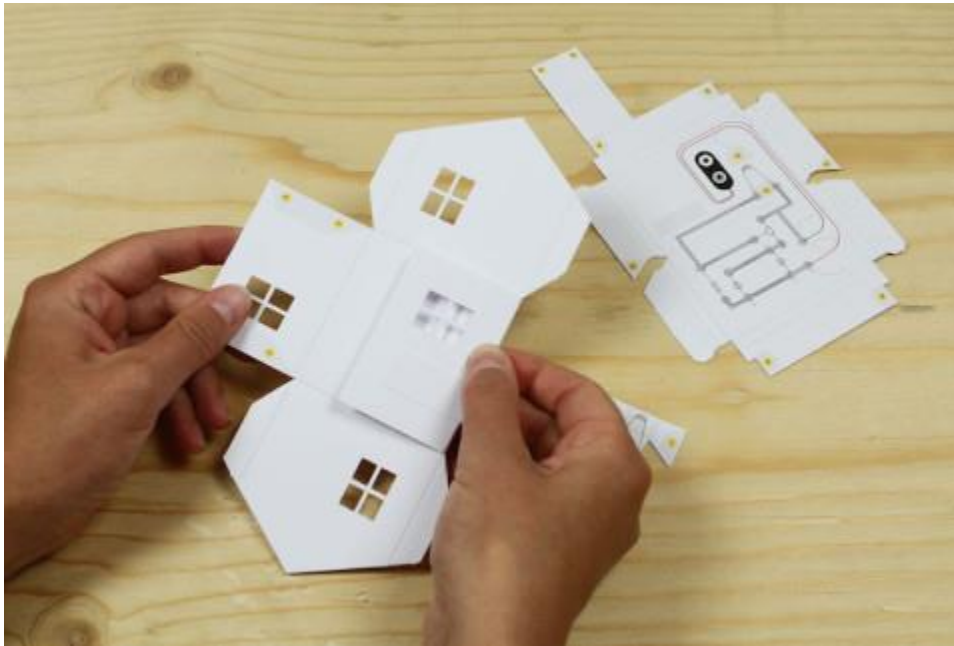


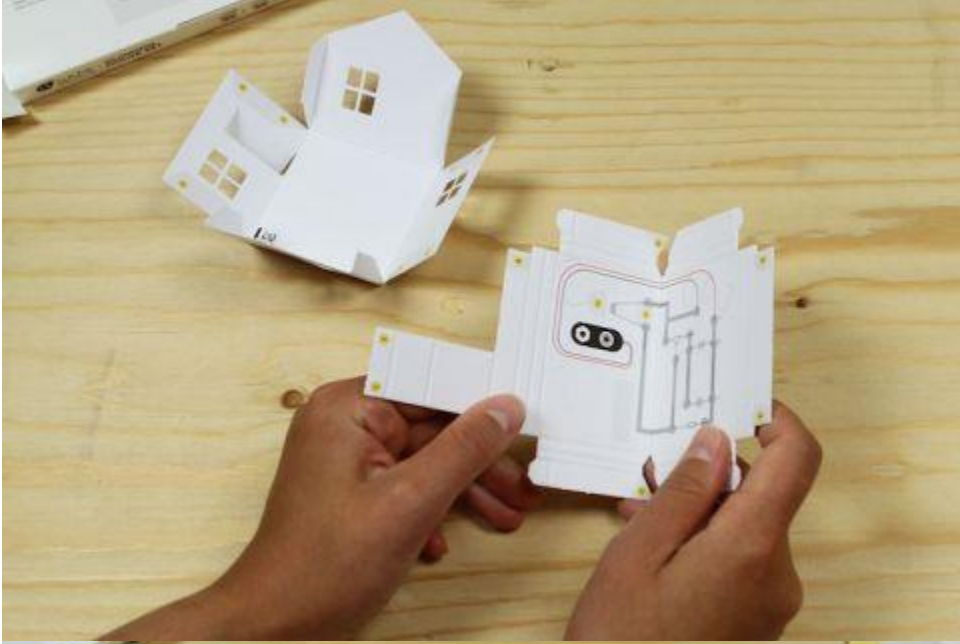
Step 6

Fold up your templates

Sharply fold along the dashed and dotted lines on all the templates. The dashed lines are valley folds and the dotted lines are mountain folds, for more information about this see the instructions on the packaging. Make sure to fold all the pieces, including the roof and chimney.

If it didn't fall out already, there may be a small square section with the LDR printed on it in the roof. Make sure to pop this piece out and discard it as you fold up the pieces.







Step 7

Stick battery clip to roof

Take your roof, a battery clip and the stickers. Lay out the battery clip following the printed graphic on the inside of the roof.

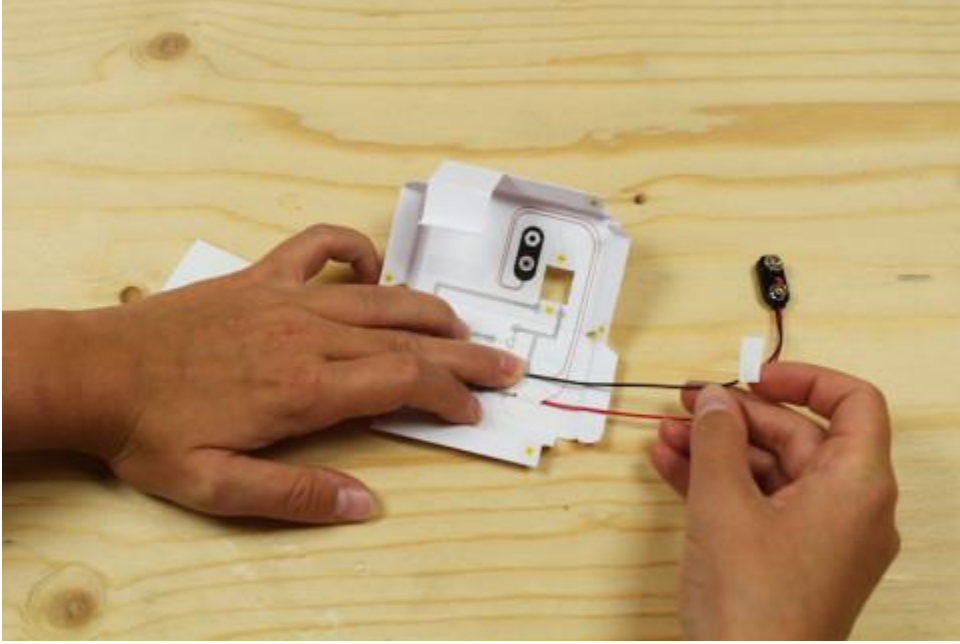
Hold down the red lead of the battery clip and stick it down to the template using one of the white stickers.

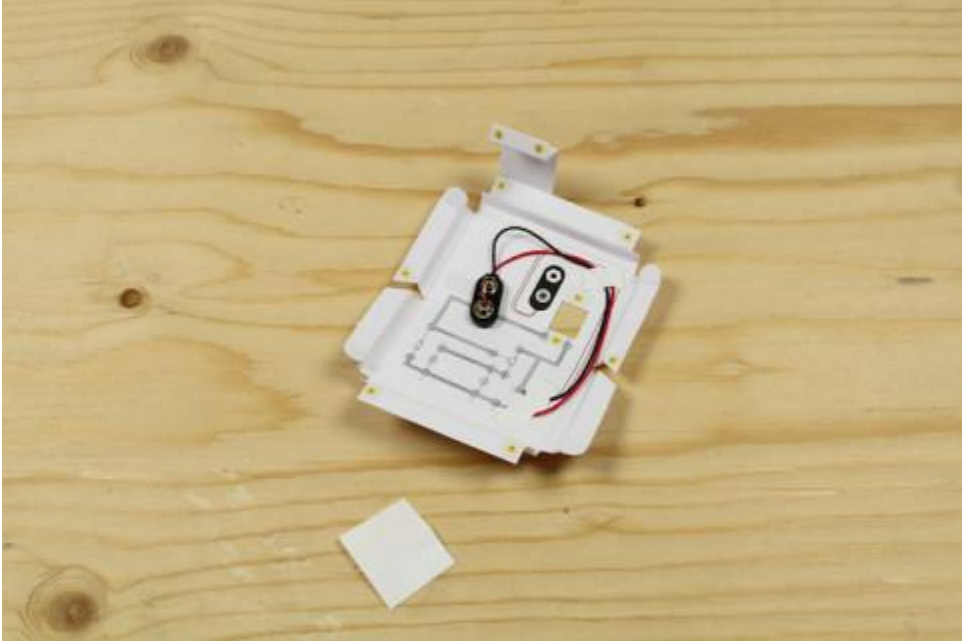
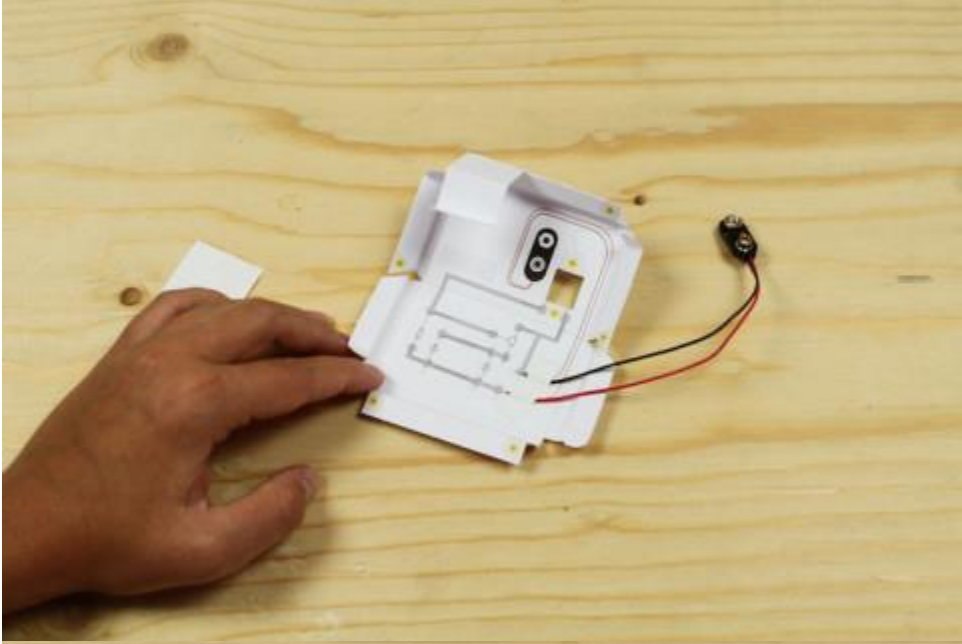
Do the same thing with the black lead of the battery clip.

This is to strain relieve the leads and to make sure they don't get pulled off.

To finish up, stick one final sticker over both leads at the top.







Step 8

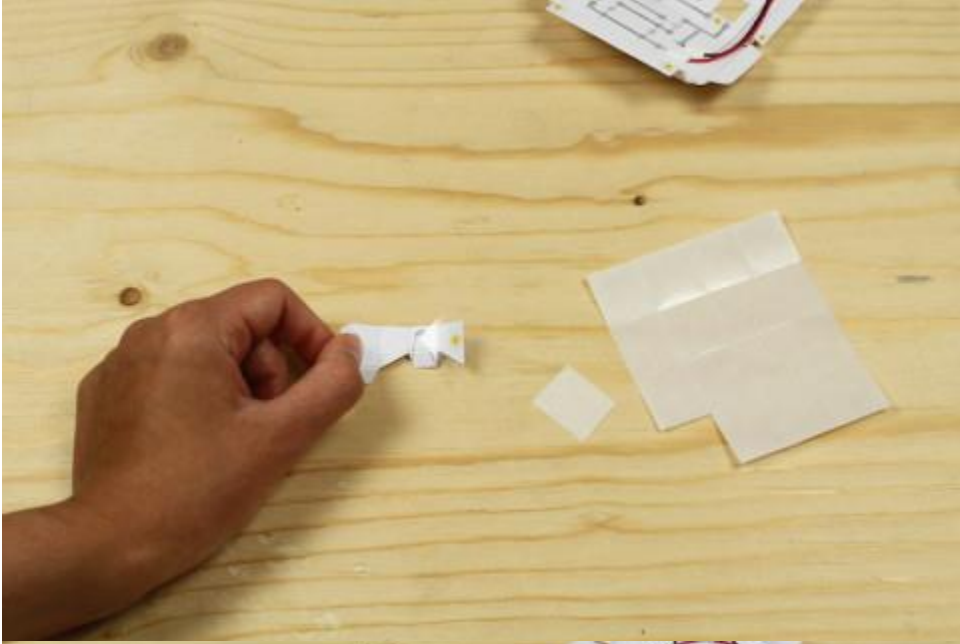
Assembling the Chimney

Take your chimney and some sticky dots. On the right hand side you will find a dot with a number '1'

Take a sticky dot, remove the backing sheet and place the dot on the number '1'. Gently peel off the clear sheet. You should be left with a sticky dot on the paper.

Fold the chimney and stick the tab onto the sticky dot.







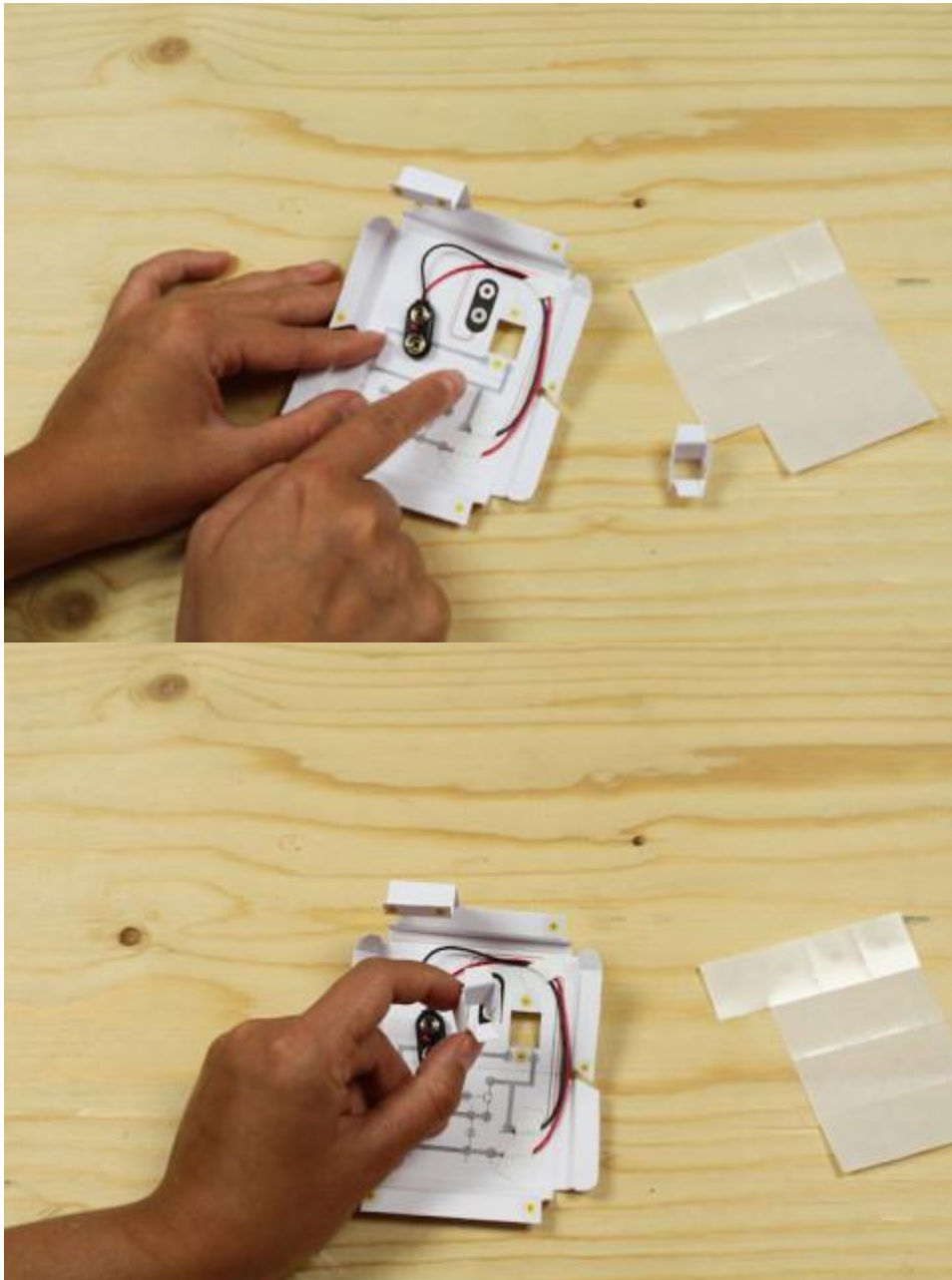
Step 9

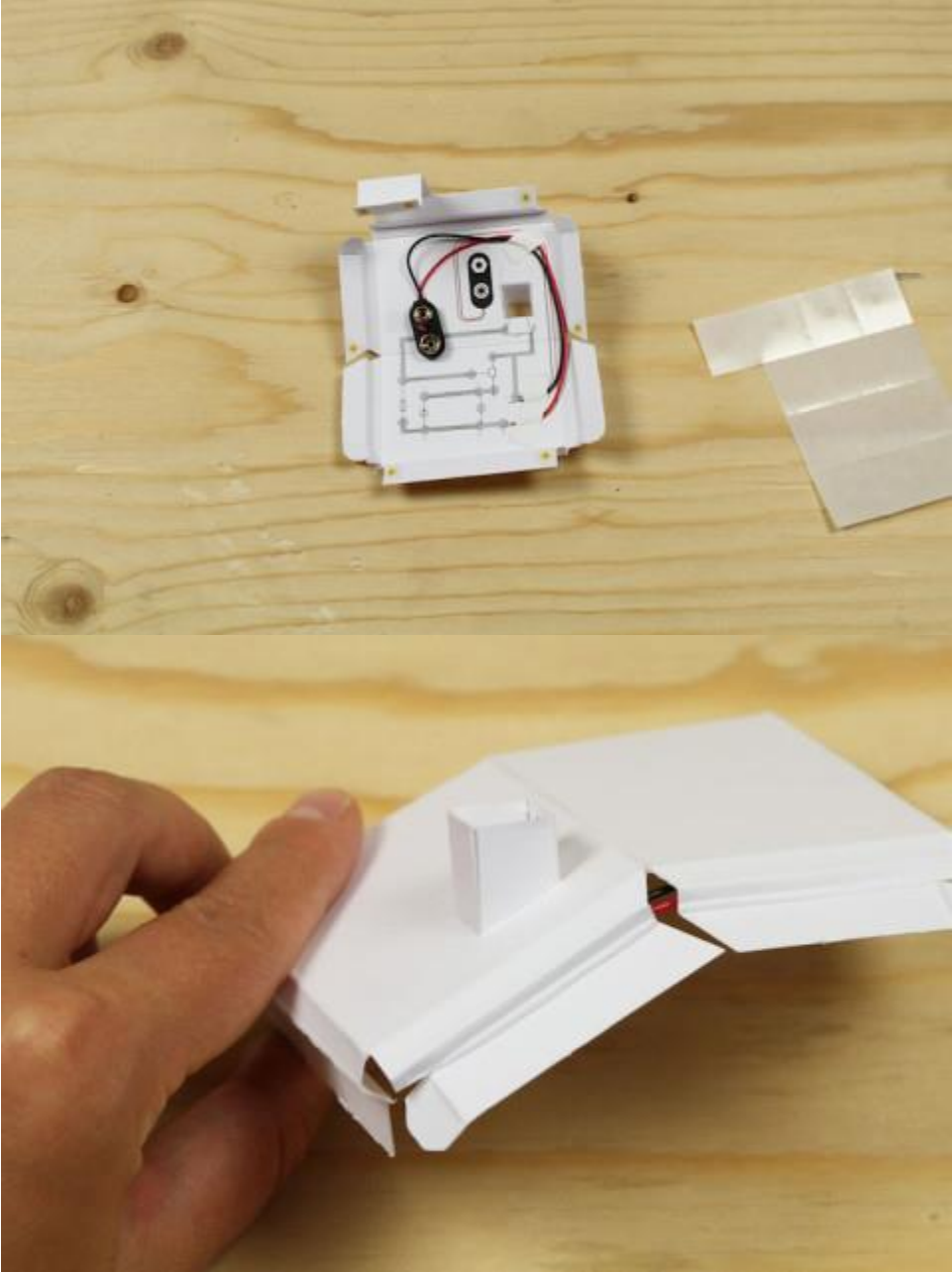
Stick the Chimney into the Roof

Place two sticky dots onto the numbers '2'.

Make sure the black legs of the LDR symbol line up, then stick the chimney piece through the roof, making sure the black legs of the LDR symbol line up.

If you flip the roof over your chimney should be aligned with the angle of the roof.





Step 10

Attach the LDR

Take your LDR (Light Dependant Resistor). It does not matter which way round this component goes as it is not polarised.

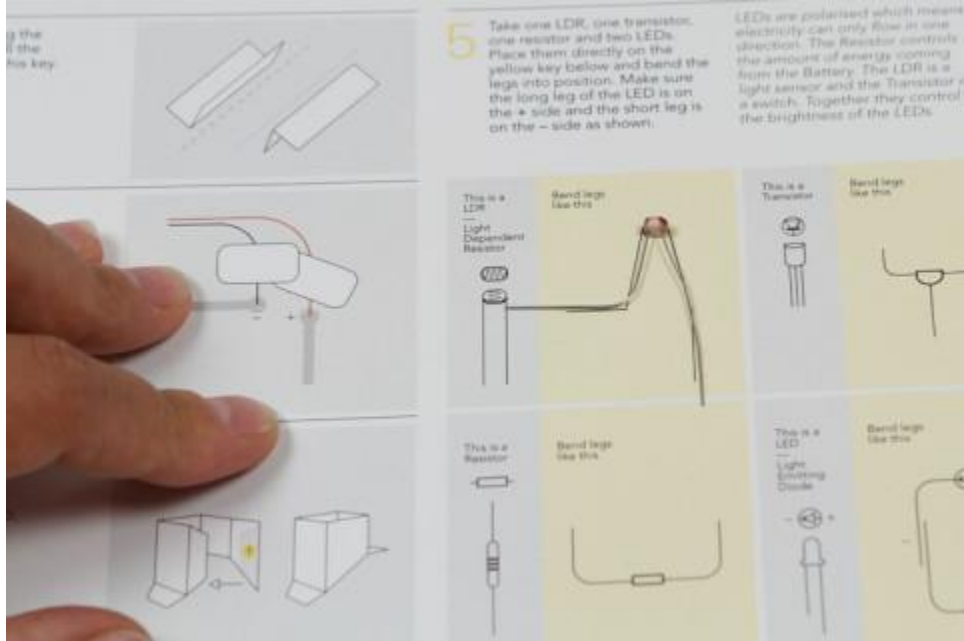
Using your instructions from the packaging, place your LDR on the image key, and fold the legs as they are in the picture.

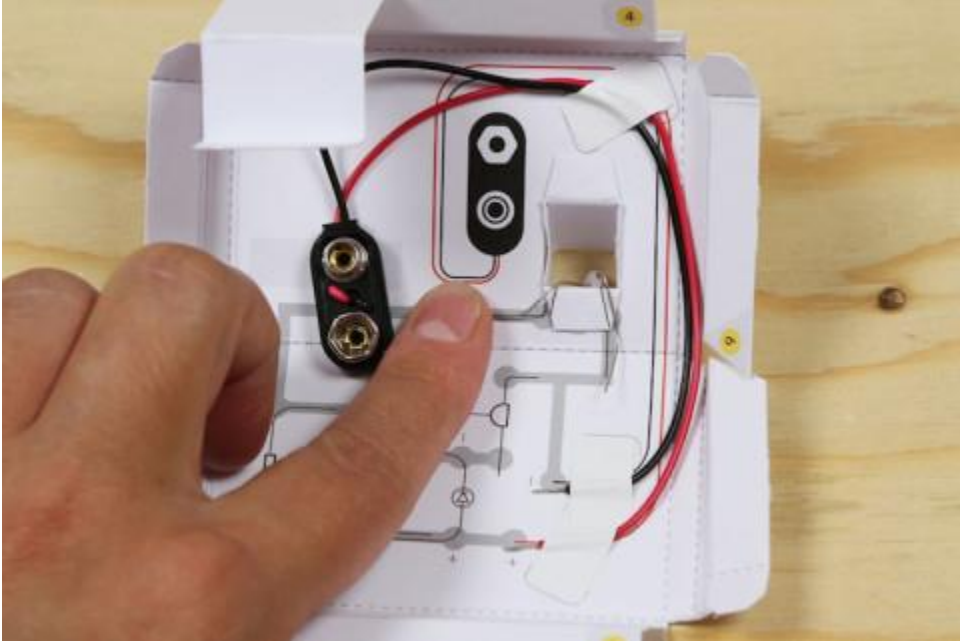
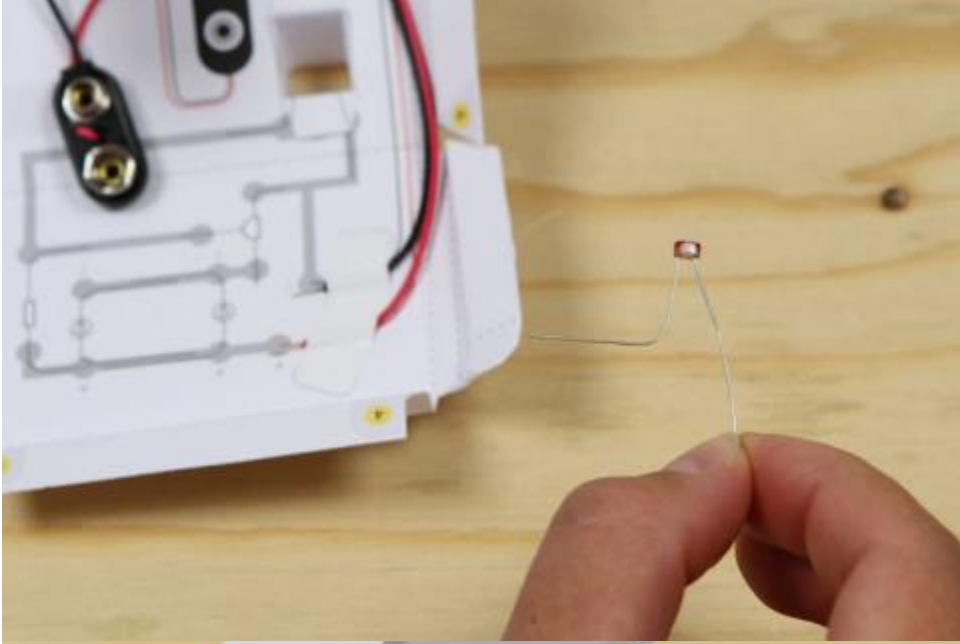
Place your folded LDR on the roof by the chimney, and push into the chimney. The LDR needs to stick up the chimney so it can detect the light levels.

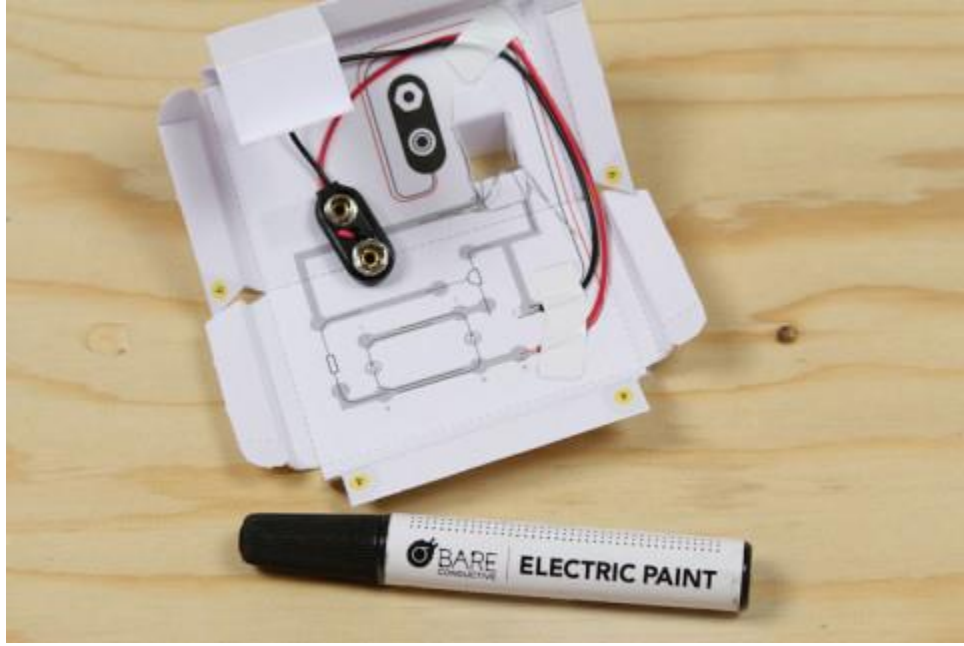
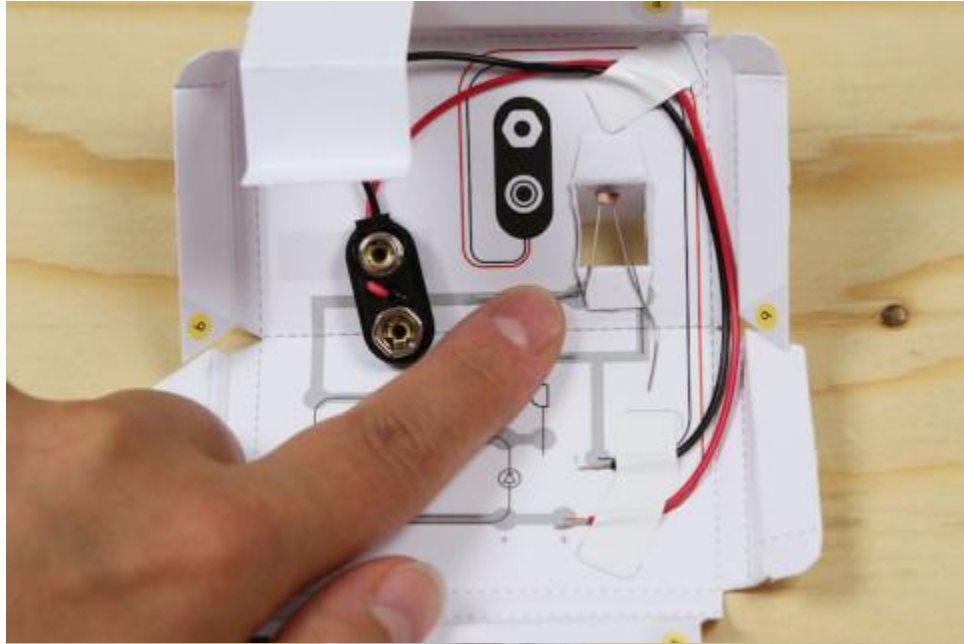
Take your Electric Paint Pen and blob some paint onto the legs of the LDR. We call this cold soldering.

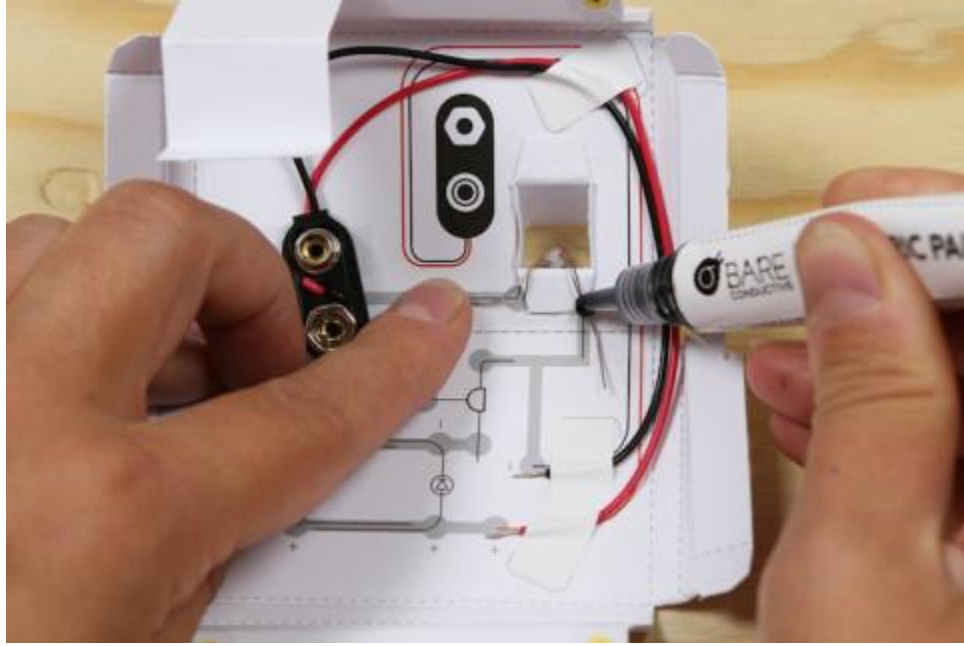
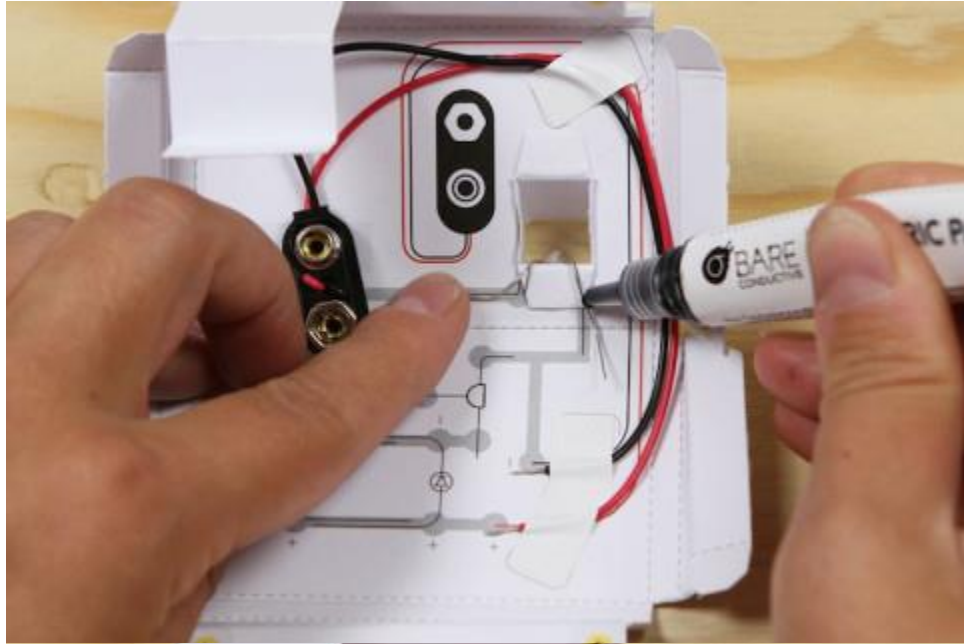
Put the wet roof aside to dry.

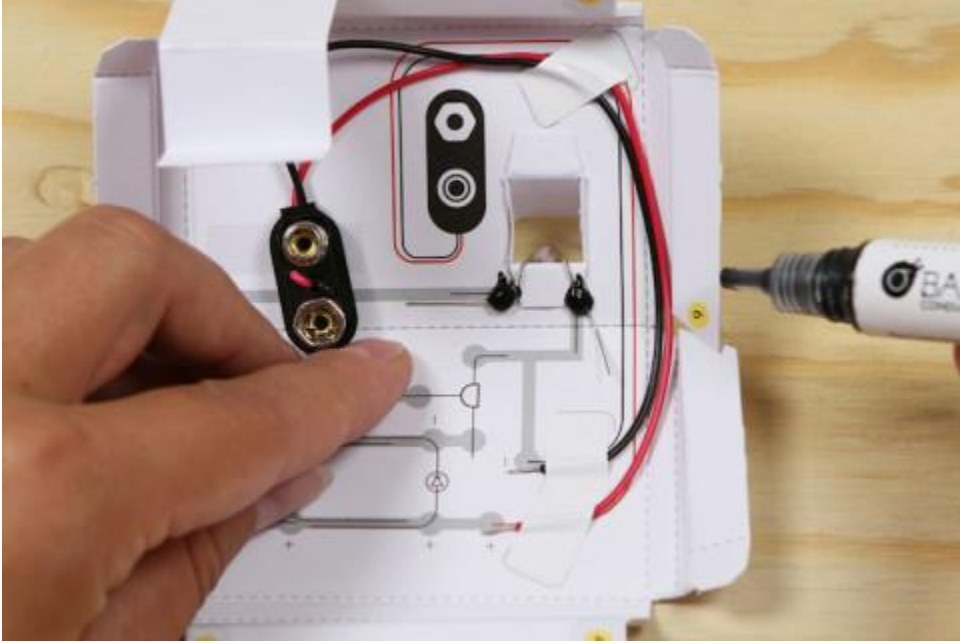
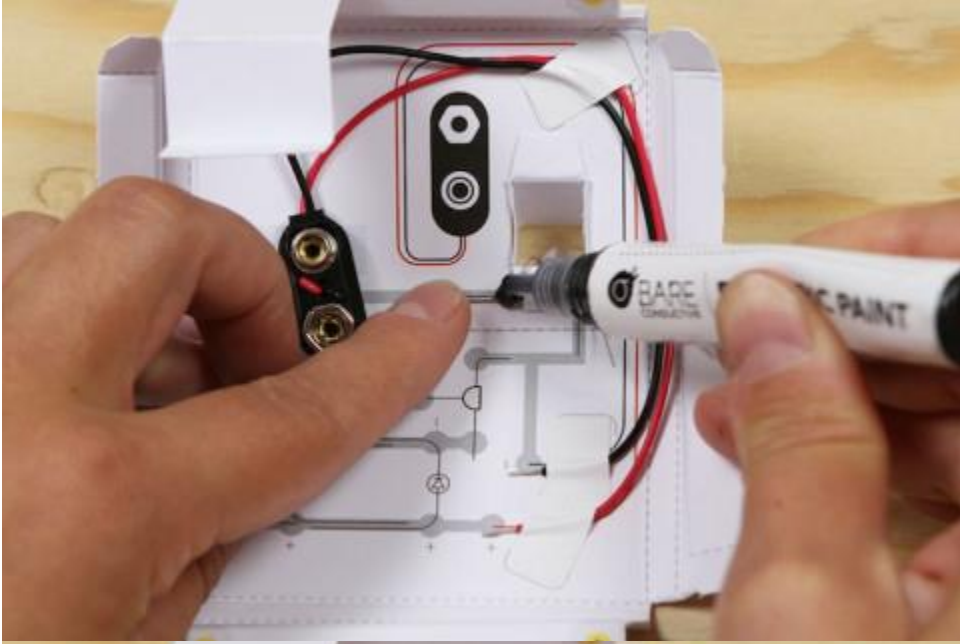












Step 11

Attach the Components

Take the remaining components:

1 Transistor

1 Resistor

2 LEDs (blue OR yellow)

** if you mix the colours your house will not be as bright as you may like.

Take your instruction key from the packaging and place the components on the key. Make sure to bend the components as instructed in the key.

The LEDs and the Transistor are polarised so they need to be in the correct orientation (+) and (-)

Once folded, place all the components in the roof circuit.



legs into position. Make sure the long leg of the LED is on the + side and the short leg is on the - side as shown.

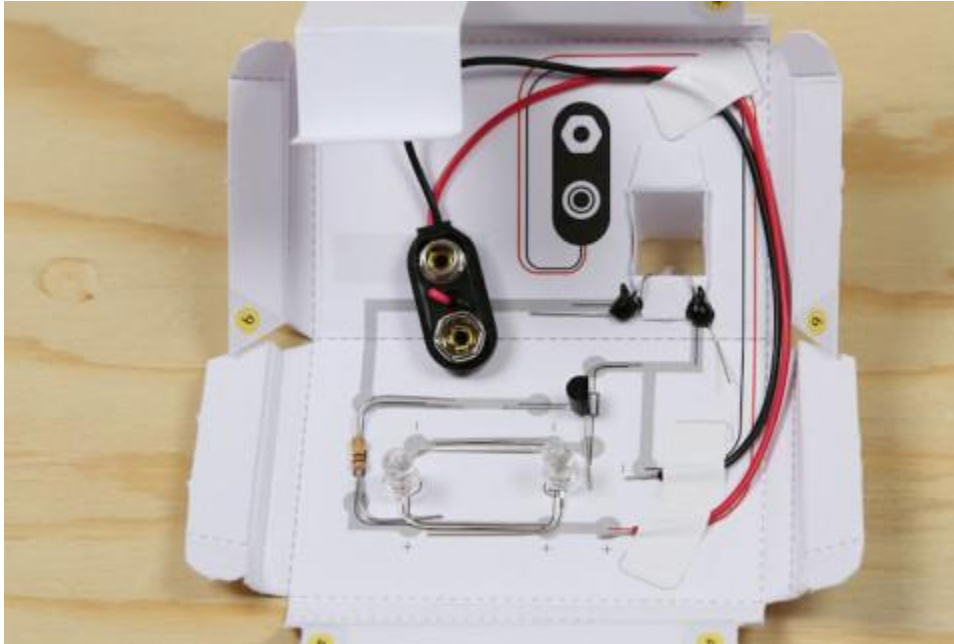
from the Battery. The LED is a light sensor and the Transistor is a switch. Together they control the brightness of the LEDs.



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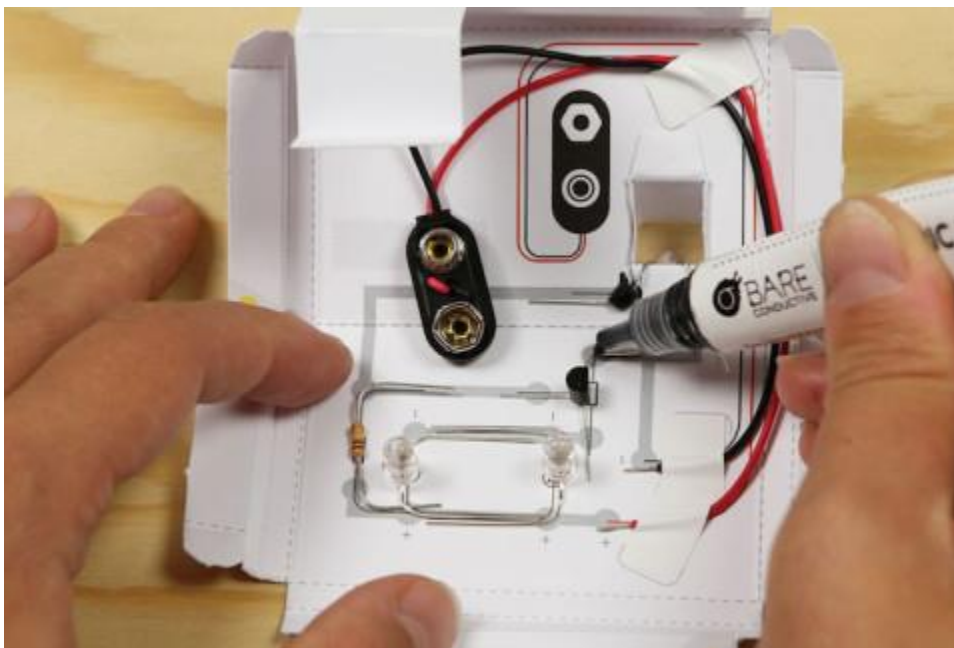


Step 12

Cold Soldering your components

Take your Electric Paint Pen and blob a droplet of paint on each of the component legs, and the wires of the battery clip leads. Make sure the blob covers the legs, as this is what is sticking the component to the paper.

Do not fill in the circuit yet. Put aside to dry.





Step 13

Fold up the House base

Put sticky dots, on all the number '3's. Then fold up the base and stick the tabs to the dots.







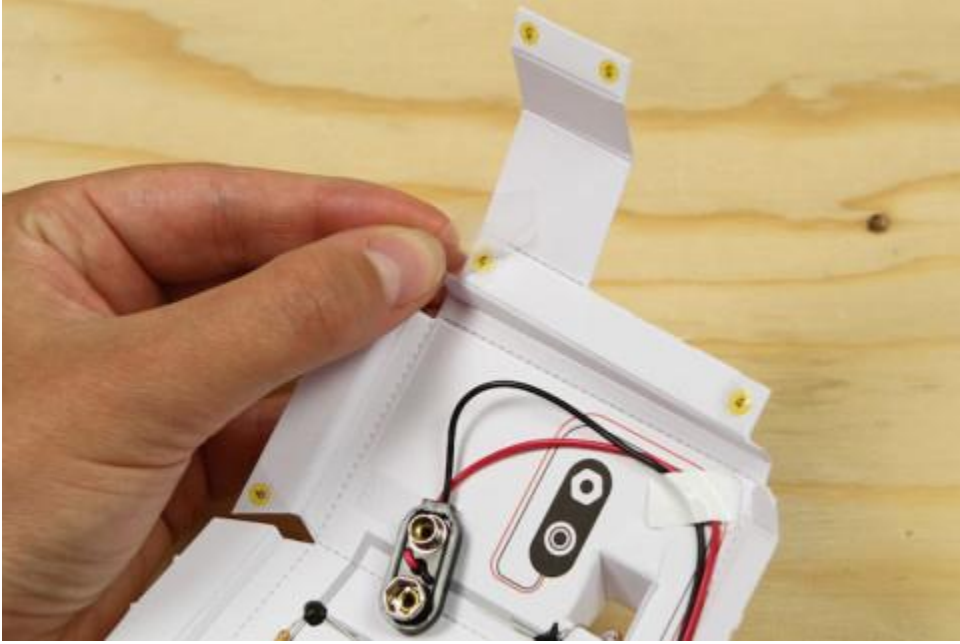
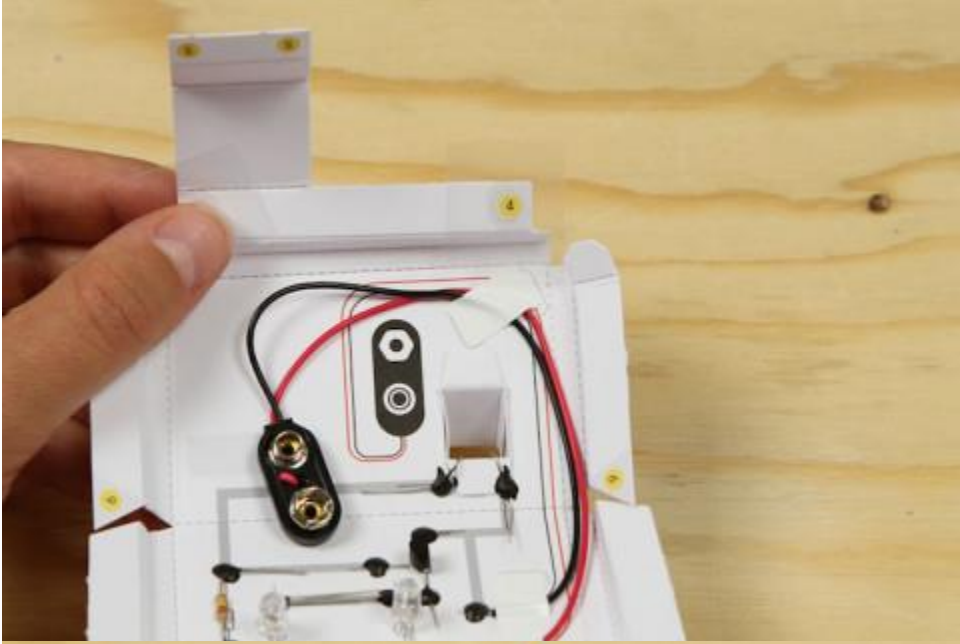
Step 14

Fold up the Roof corners

Once the blobs on the components are dry, it's time to fold up the roof.

Put sticky dots on all the number '4's. Stick the corner tab onto the sticky dot and repeat on all four corners.



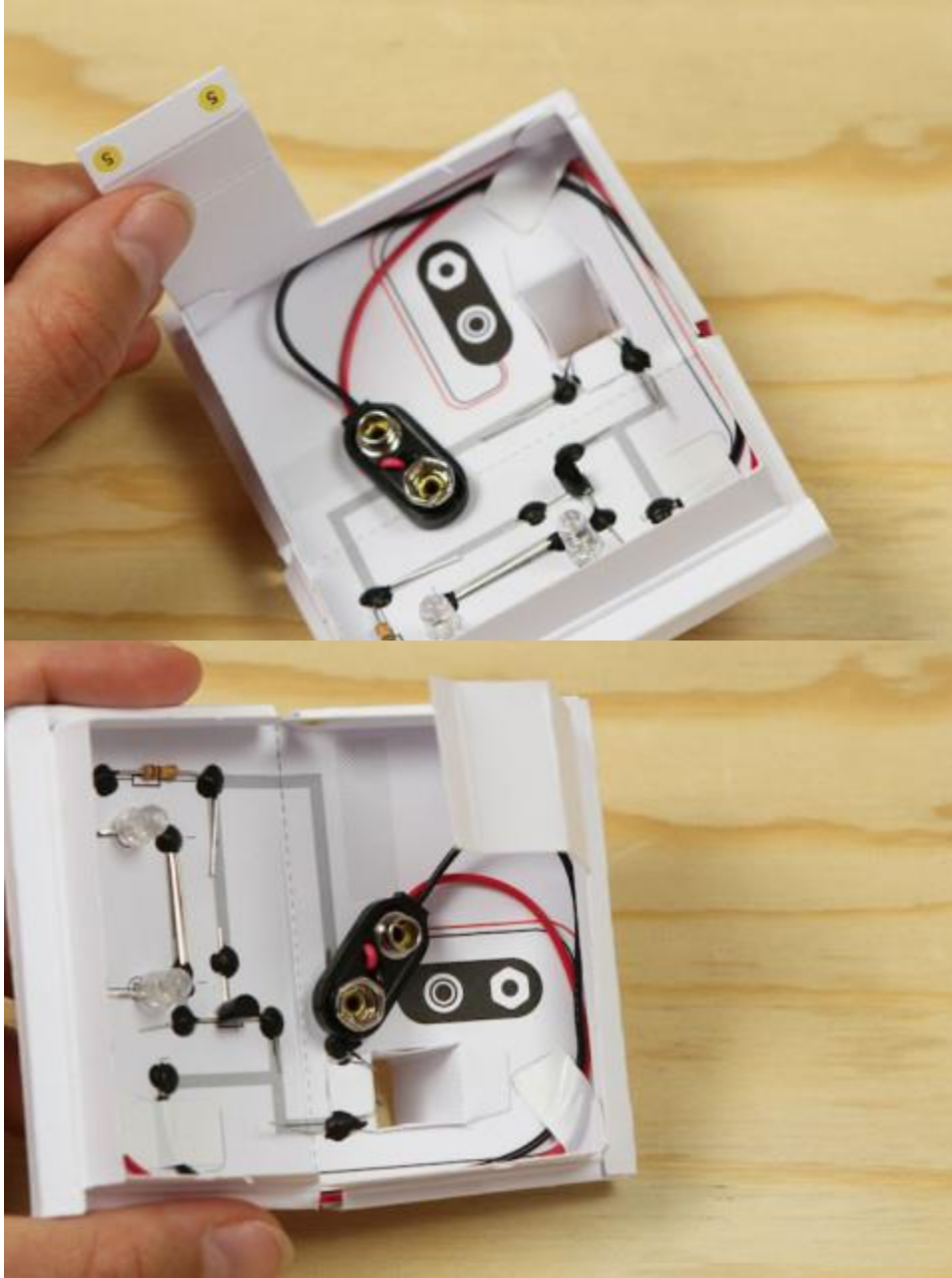




Step 15

Stick down the battery holder

Put some sticky dots on number '5's. Stick the flap onto the inside of the roof to create the battery holder.

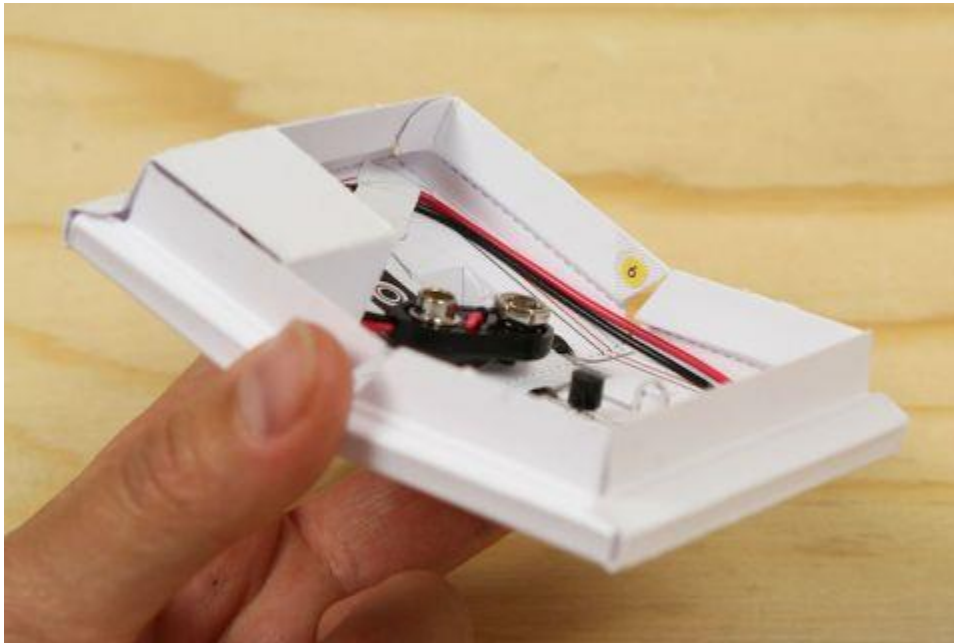


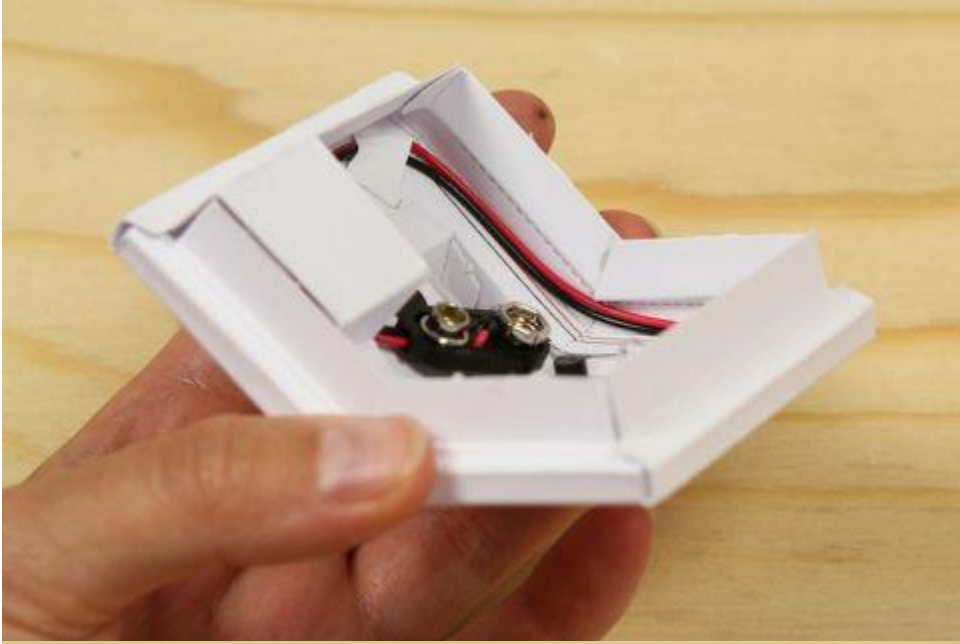


Step 16

Fold the roof to the correct angle

Put sticky dots on number '6's. Align the triangular tab with the angle of the roof fold.



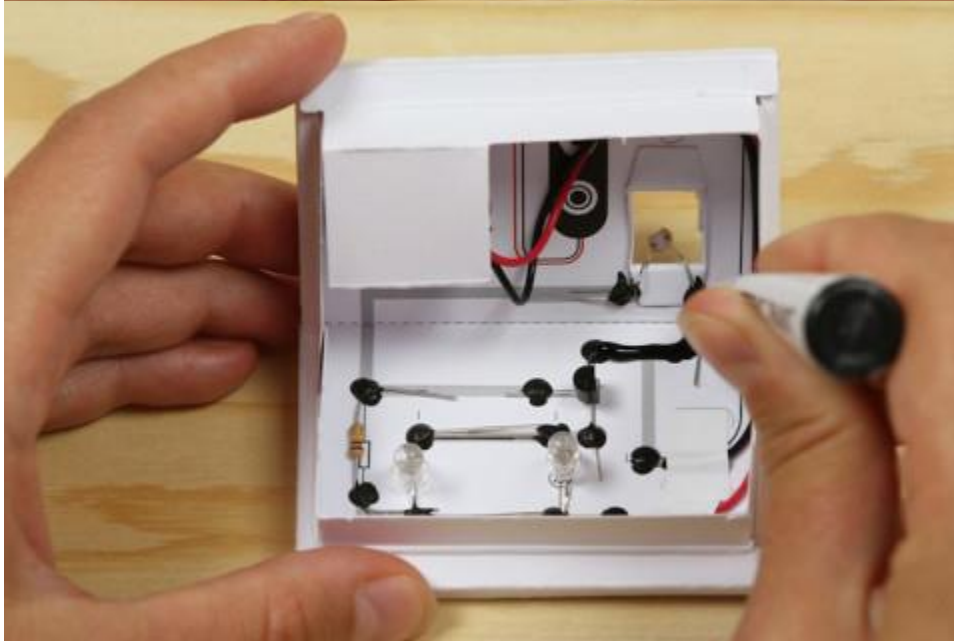
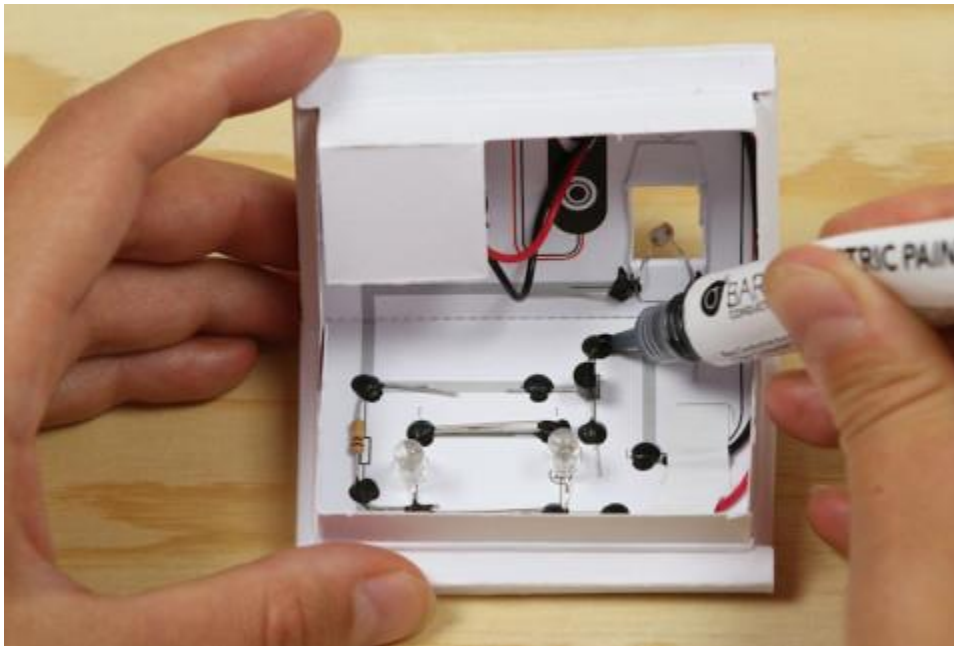


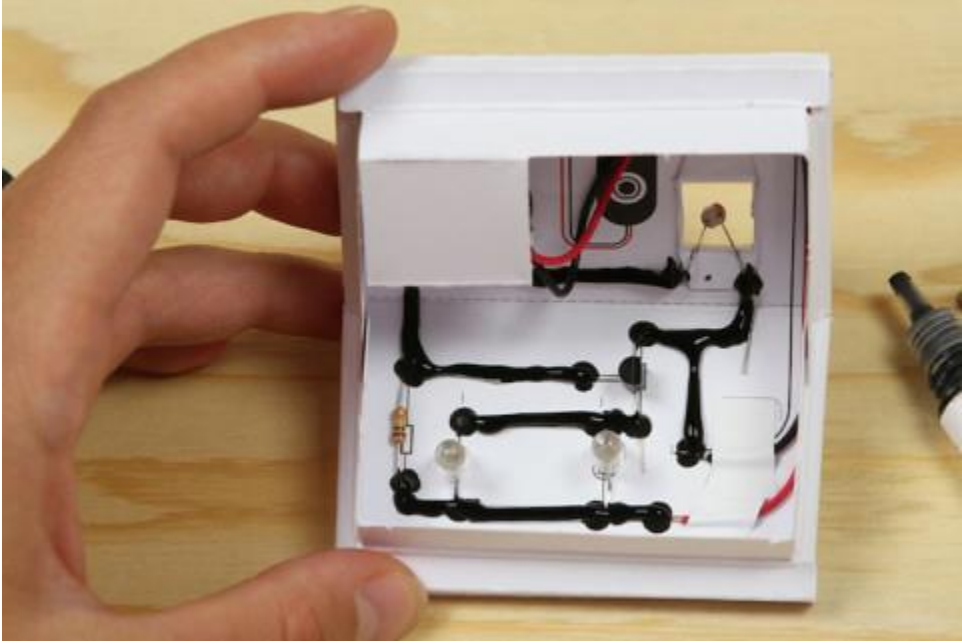
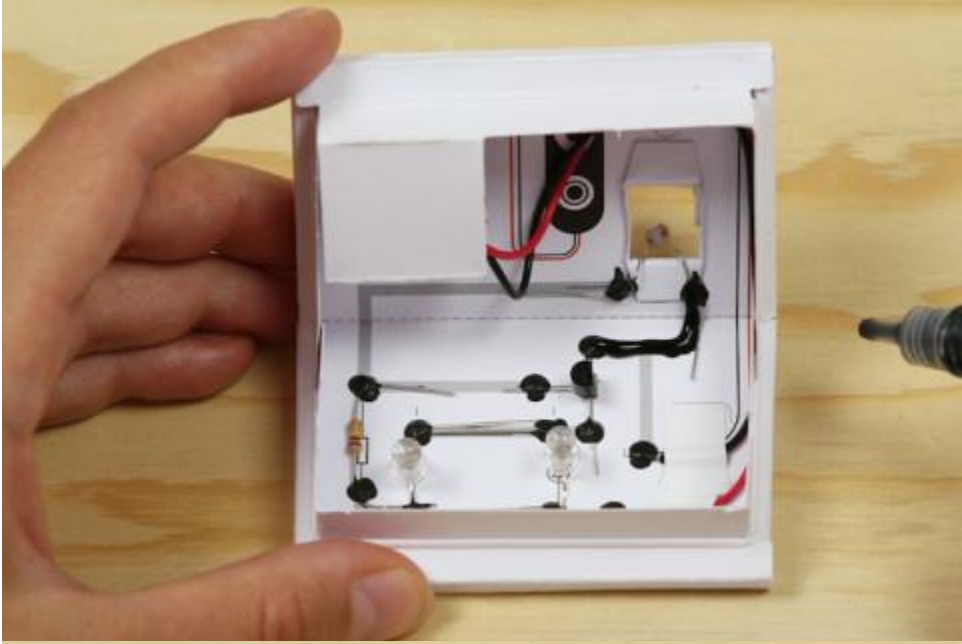
Step 17

Fill in the circuit

Once your roof is folded, fill in the rest of the circuit with the Electric Paint Pen. You can tuck the battery clip into the battery holder to get it out of the way, while you are drawing.

Make sure to draw an even consistent line covering the grey printed line. Now wait for it to dry completely.





Step 18

Plug in the battery

Once your circuit is totally dry you are ready to power your circuit!

Take one of the 9V batteries and attach it to the battery clip.

Insert the battery into the paper holder and slide the roof section into the base.





Step 19

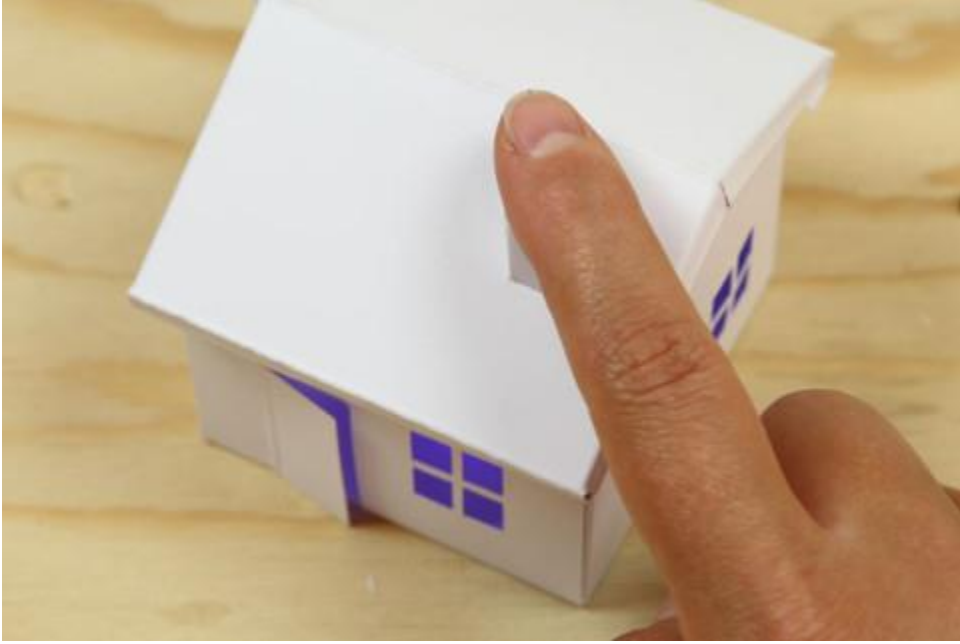
Test your House

Congratulations! Your house should now be complete.

You can test your circuit by holding your finger over the chimney and covering the LDR to simulate night time.

You don't need to touch the LDR, it's a light sensor so you just need to block out the light. The LED should come on when the LDR is covered.





Step 20

Decorate your village scene

We have added some optional extras to our packaging for you to cut out and use in making a village scene. But feel free to customise and make your own town or city scene!

Send us some photos of your finished houses to info@bareconductive.com. We'd love to add them to our gallery!





Step 21

Troubleshooting

If your LEDs don't turn on or off at this stage don't fret, there's a few things you can check:

1. Is your paint dry? If not leave it overnight or put it in a warm place until it's completely dry.
2. Are any of your components short circuiting – is the paint joined up underneath them? If so take out this component and remove the paint with a knife. Make sure the paint isn't connecting between the legs, then place back in the circuit.
3. Are your components in the right way round? Check your component key to make sure the polarity (+) and (-) is correct for all of them.
4. Are your lines too thin or broken? Your lines may be too resistant to pass sufficient current – try making them wider or thicker. Check the corners of the circuit where the paint may have bent and cracked.