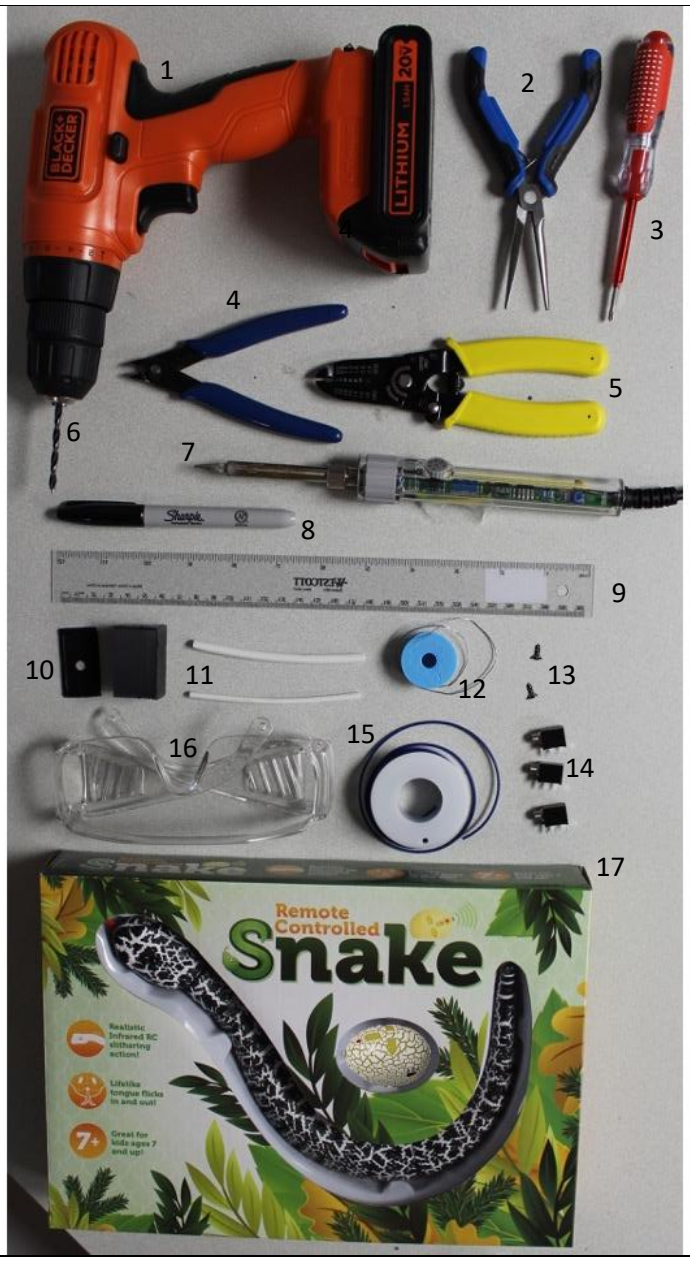
Slithering Snake Switch Adaptation

Assembly Guide

Version: v1.0 Date: 06/23/2021

Components needed:



BOM

1. Drill
2. Needle nosed pliers
3. Screwdriver
4. Flush cutters
5. Wire strippers
6. 5/32” Drill bit
7. Soldering iron
8. Permanent marker
9. Ruler
10. 3D printed parts
11. Heat shrink wire wrap
12. Solder
13. #4 Round head 3/8” screws (2)
14. Mono jacks (3)
15. Wire
16. Safety glasses
17. Toy snake

TOOLS NEEDED:

- Soldering iron
- Solder
- Drill
- 5/32” drill bit
- Wire strippers
- Flush cutters
- Screwdriver
- Needle nosed pliers
- Permanent marker
- Ruler

Personal Protective Equipment (PPE) Required:

- Safety glasses

Step 1:

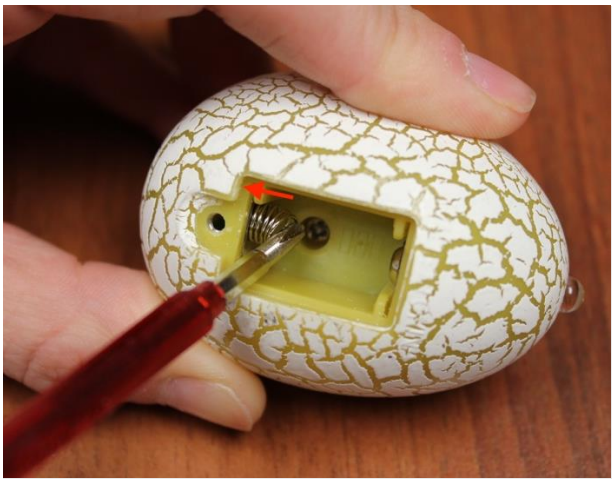
Carefully unpack the toy to preserve the packaging. Test the toy to ensure it works properly. Set the snake toy aside, the work will only be done on the remote control egg.

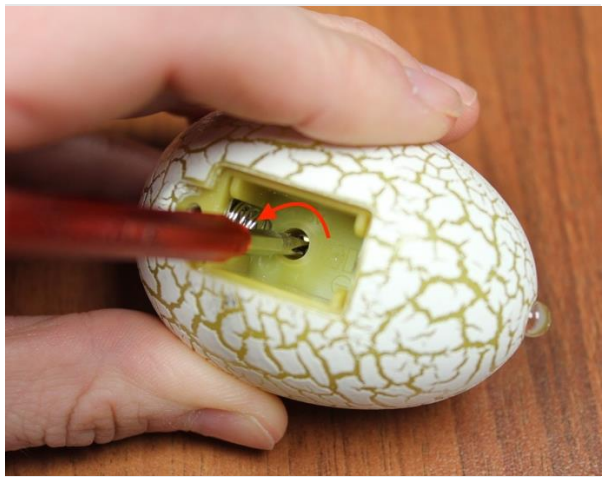
Step 2:

Remove the batteries in the egg with a screwdriver.

Step 3:

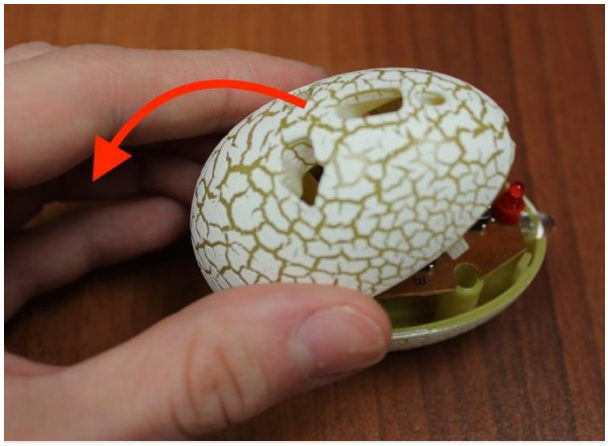
Push the spring back with the screwdriver to access the small screw underneath and remove it.





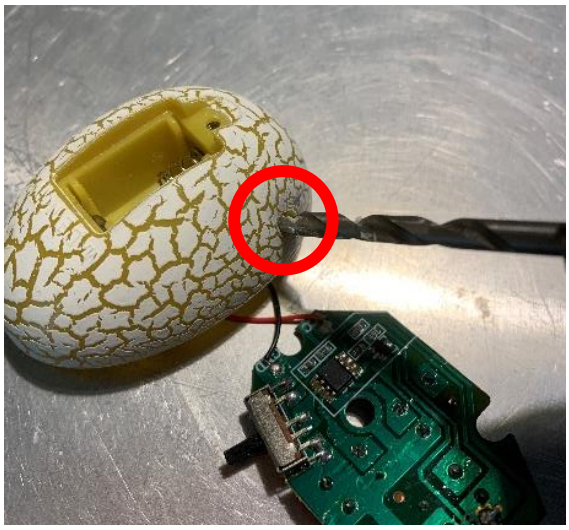
Step 4:

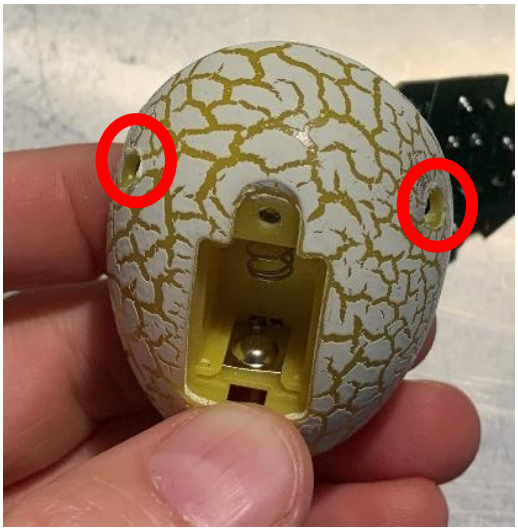
Separate the two halves of the egg and set the top half (containing the arrow button covers) aside.



Step 5:

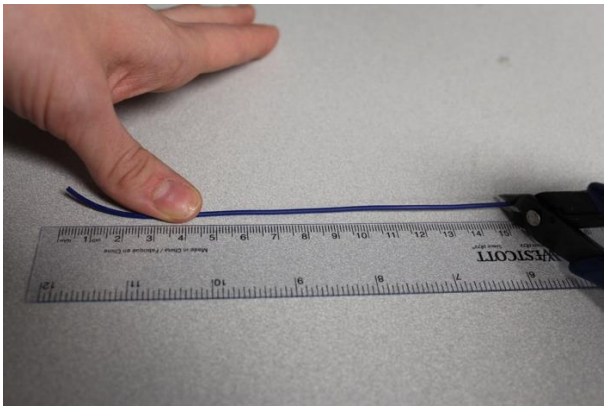
Flip the circuit board out of the remaining half of the egg and drill two 5/32” holes in the sides of the remote as shown.

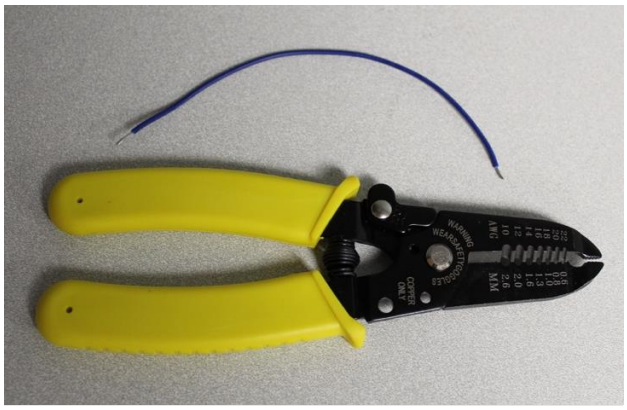




Step 6:

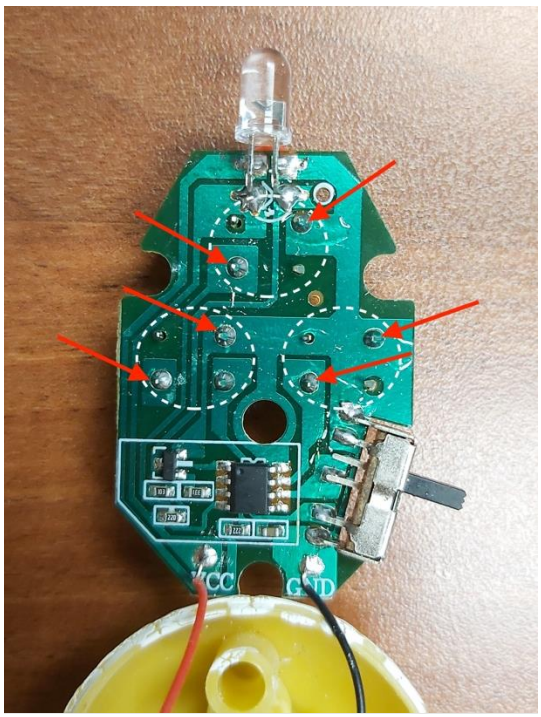
Cut 6 pieces of wire that are 15cm in length. Strip 0.5cm off each of the ends.





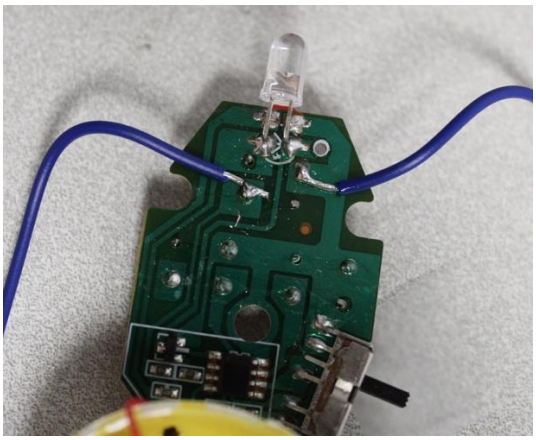
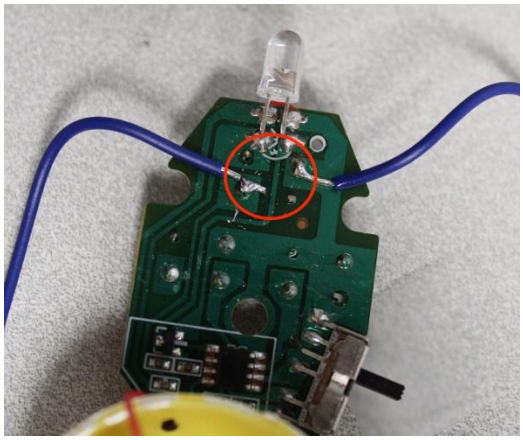
Step 7:

Orient the circuit board as shown and identify the leads on the back of the switches that will be soldered. The upper right lead and lower left lead on each switch will be used.



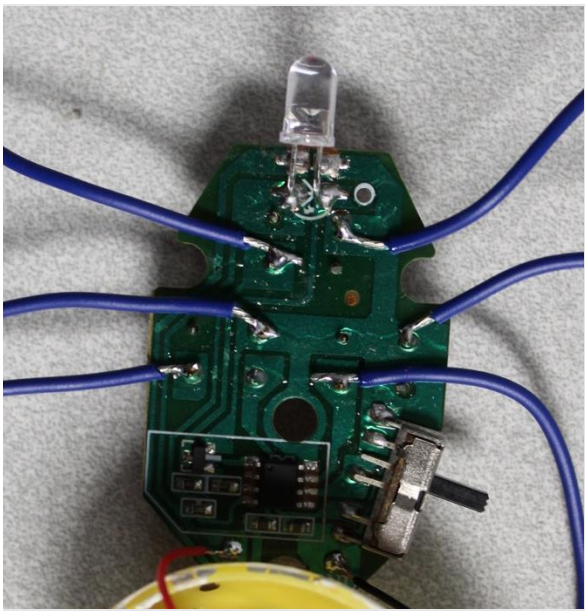
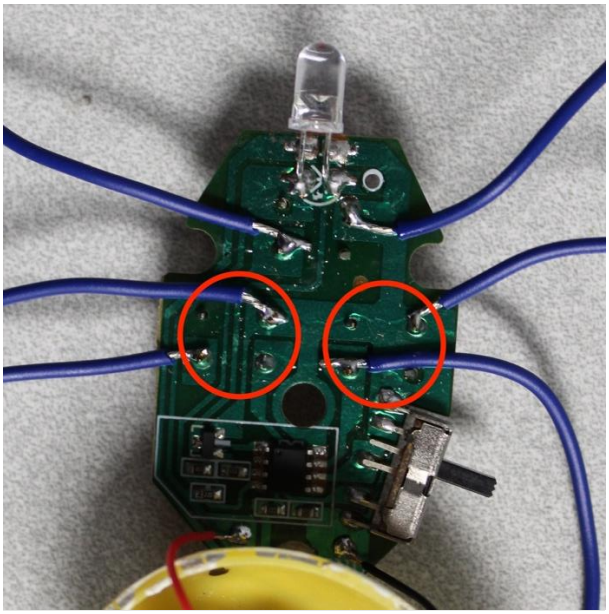
Step 8:

Solder one end of a wire to the upper right lead of the top switch. Solder one end of another wire to the lower left lead of the top switch.

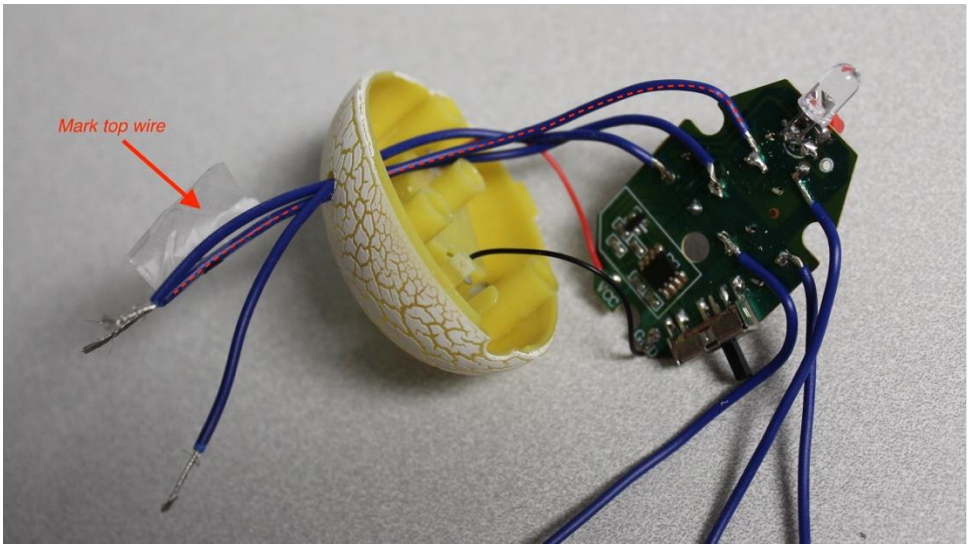
Step 9:

Repeat Step 8 for the left and right switches. If possible, use a different coloured wire for the left and right switches. Ensure that three wires are coming off the right side of the board, and three are coming off the left side.

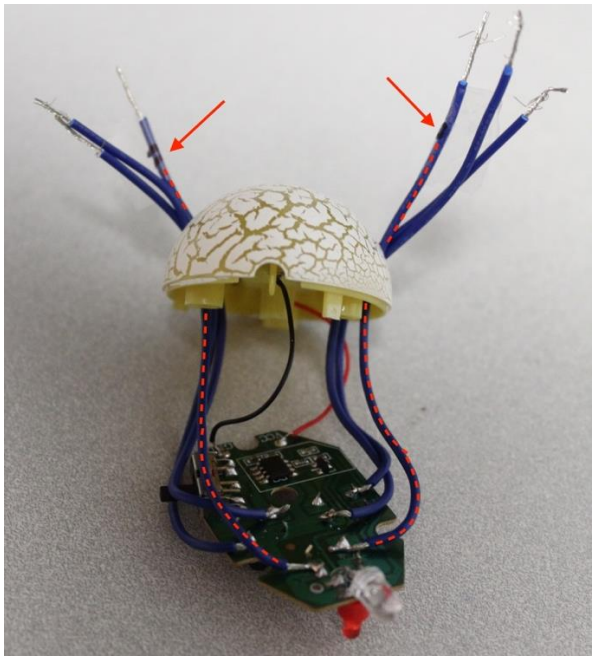
Step 10:

Gather the three wires on the left side of the board and feed them through the left hole in the egg. Add a marking to the wire attached to the top switch with a permanent marker or tape. If your top switch wires are a different colour than the others, the colour will serve as a marking.



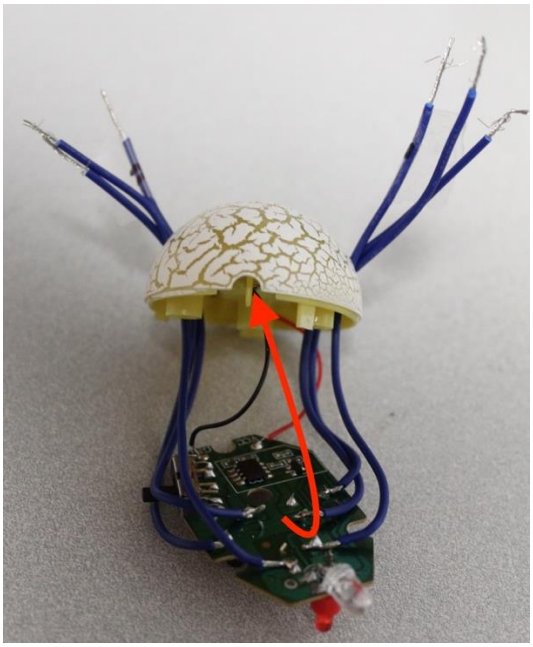
Step 11:

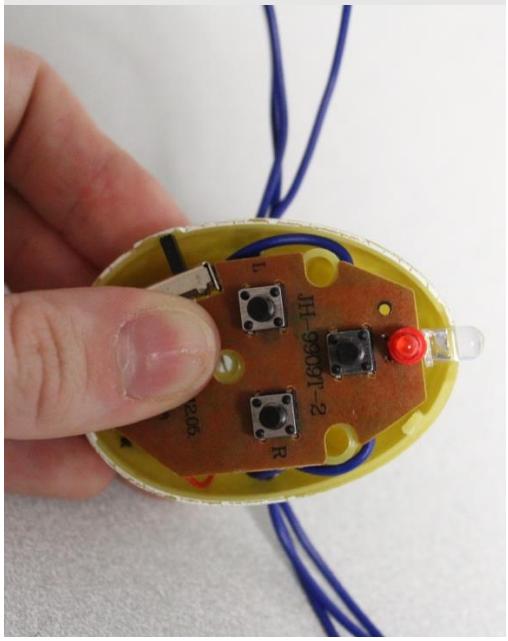
Repeat Step 10 for the right side.



Step 12:

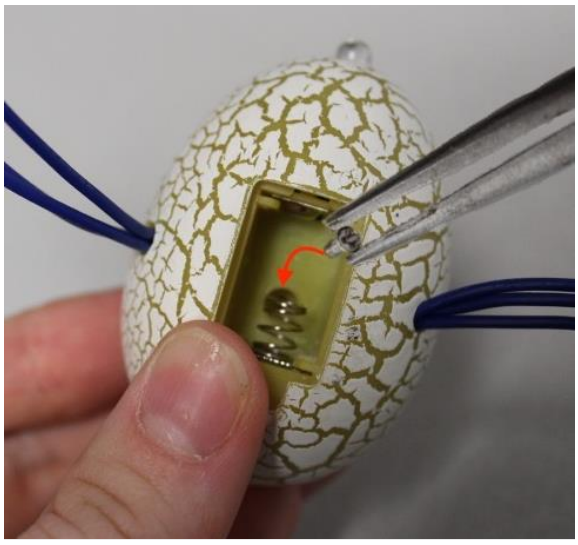
Gently push the wires further through the holes and reposition the circuit board on its resting posts in the egg. Play with the wire placement until it lies flat.

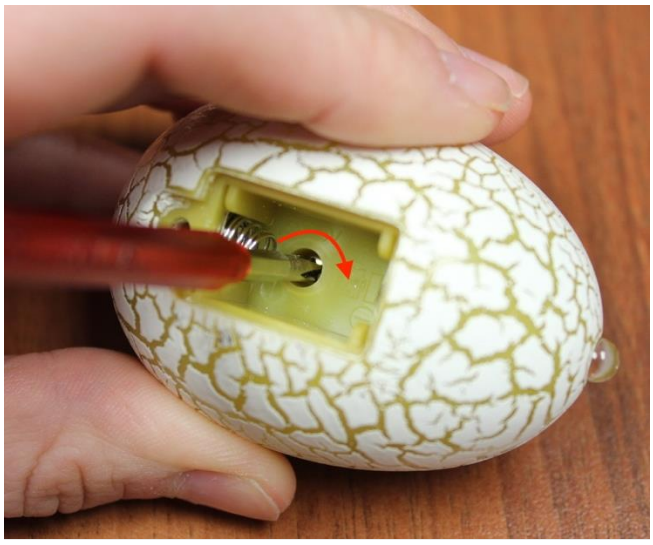




Step 13:

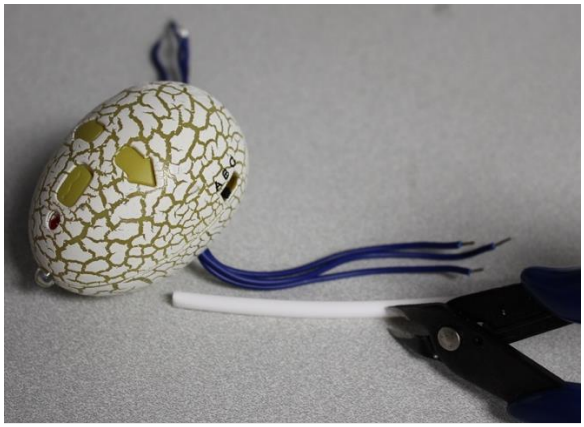
Place the other half of the egg back on and secure the egg with the screw removed earlier. It may help to hold the screw with needle nosed pliers and push the spring back with the pliers to drop the screw in place.

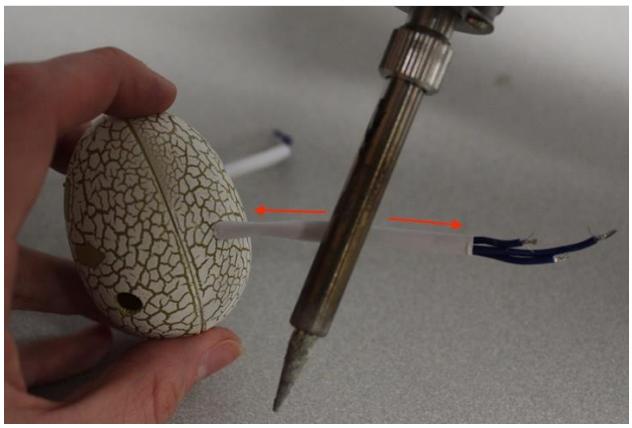




Step 14:

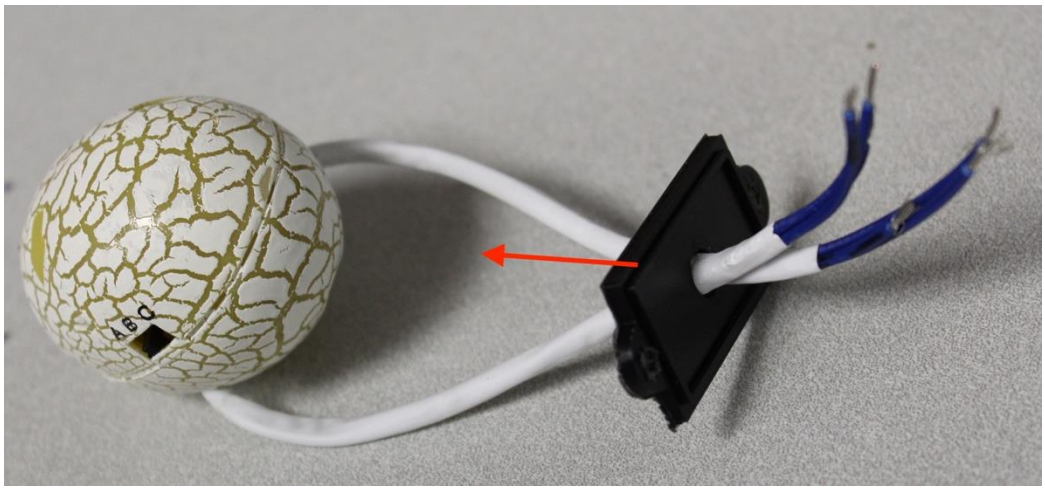
Thread a piece of heat shrink wrap that is a few centimeters shorter than the wires onto each set of wires. Thread the heat wrap onto the wires as close to the egg as possible, then heat the wrap with a heat gun or the side of a soldering iron.





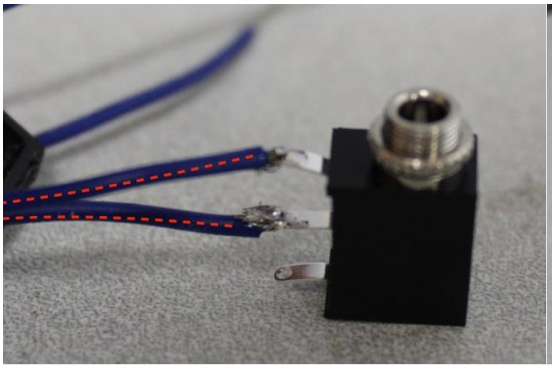
Step 15:

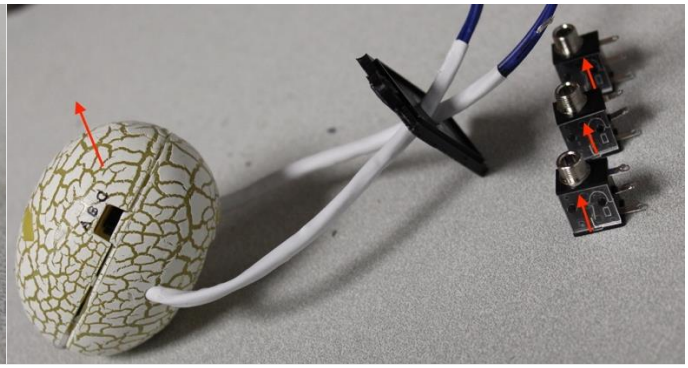
Thread both bundles of wires through the hole in the mono jack box lid, making sure the lip around the lid is facing away from the egg. Push the lid up along the wire so there is lots of wire to work with.



Step 16:

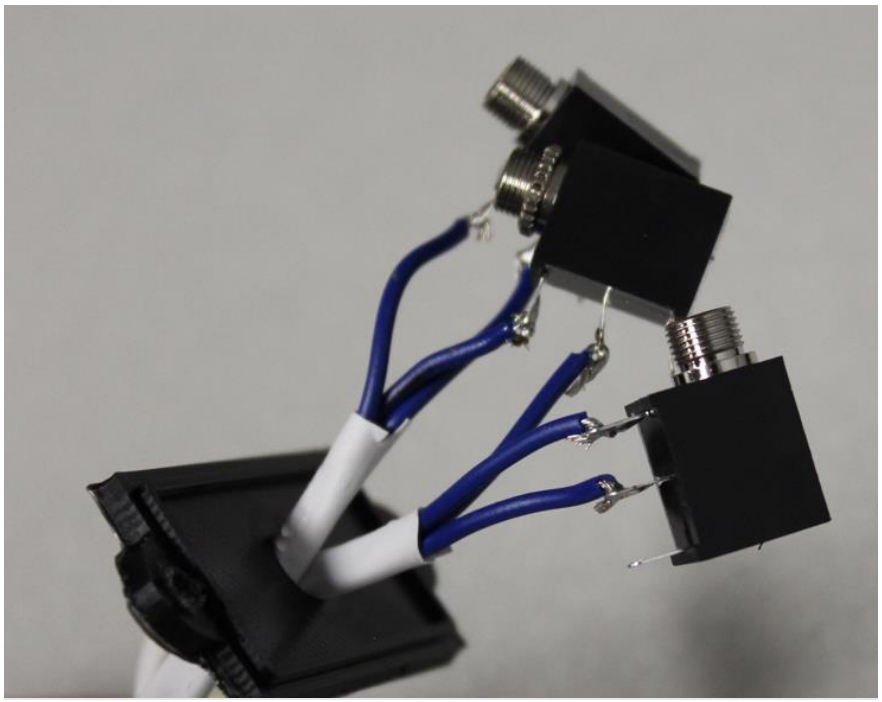
Identify the two wires with markings that are attached to the top switch. Solder one of these wires onto the middle leg of the mono jack and solder the other to the first leg. Solder so that the mono jacks' heads naturally point in the same direction as the side of the egg with buttons.





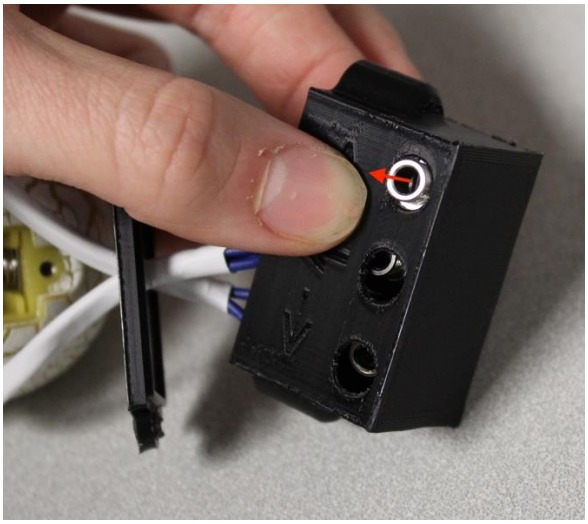
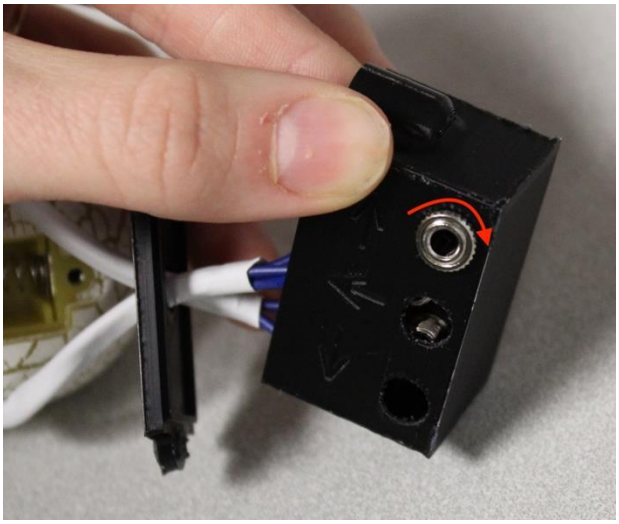
Step 17:

Solder the two wires from one of the bundles onto the first two legs of another mono jack. Repeat for the second bundle of wires. There should now be three mono jacks attached.



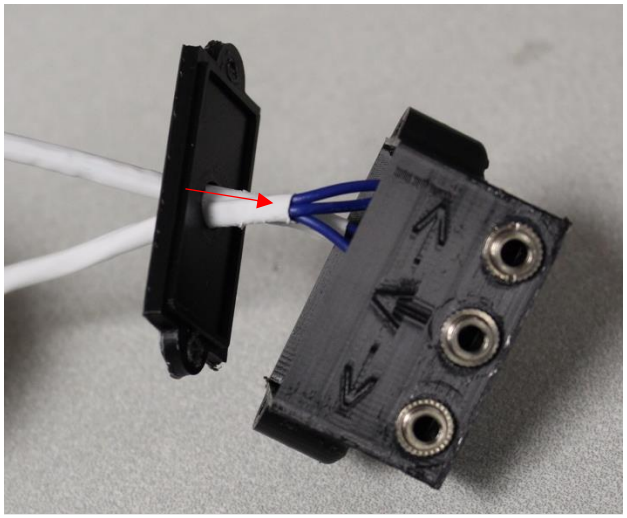
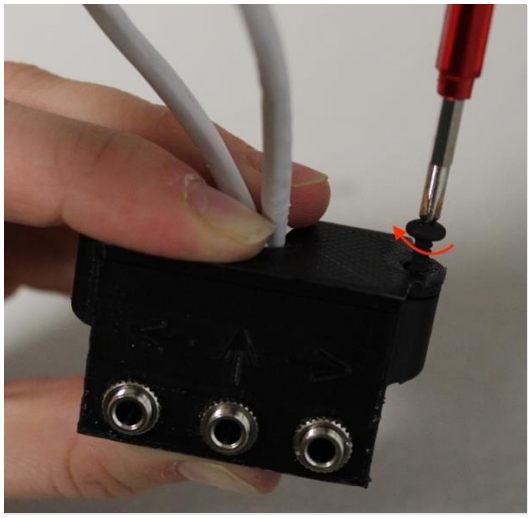
Step 18:

Unscrew the nuts from the ends of the mono jacks. Slide the mono jacks into the mono jack box and push each mono jack out through a hole. Ensure the mono jack soldered to the right side of the remote is in the right side of the box and the same for the left. Screw the nuts back onto the mono jacks, securing them in place.

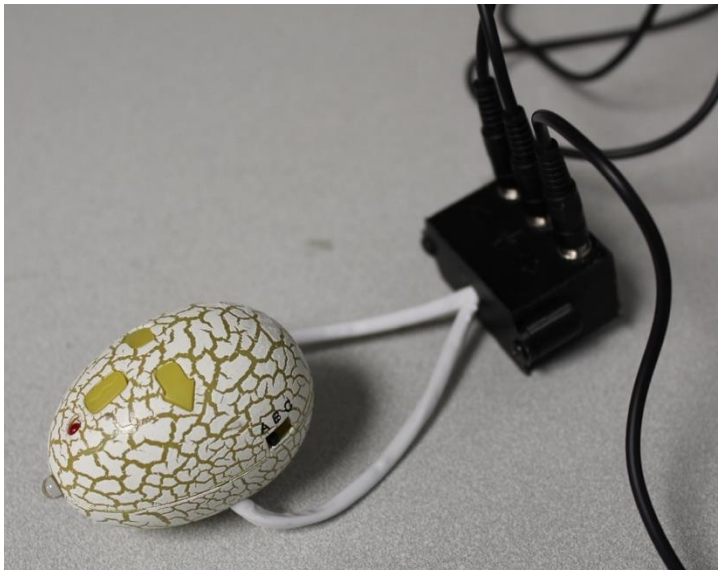
Step 19:

Push the lid down to rest against the box. Locate the holes on either side of the box and secure the lid with screws in these holes.

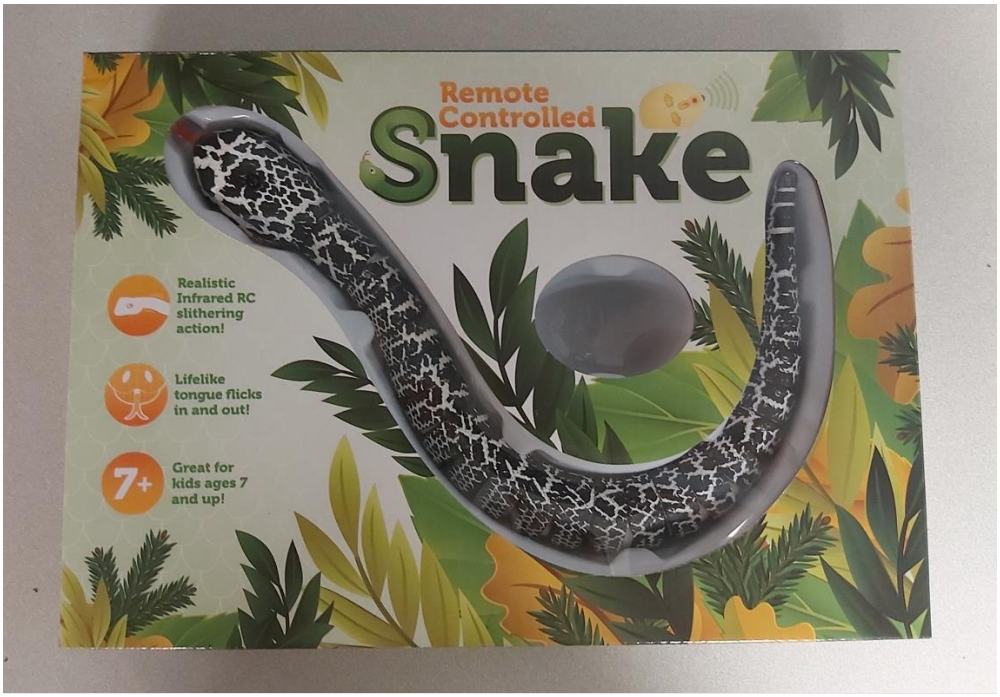
Step 20:

Put the batteries back into the egg and secure the battery compartment with the screw. Plug three switches into the mono jack box and test the toy.



Step 21:

Repackage the toy. The egg may not fit in its original position but can be slid underneath the plastic lining.



Files available at https://www.makersmakingchange.com/project/slithering-snake/