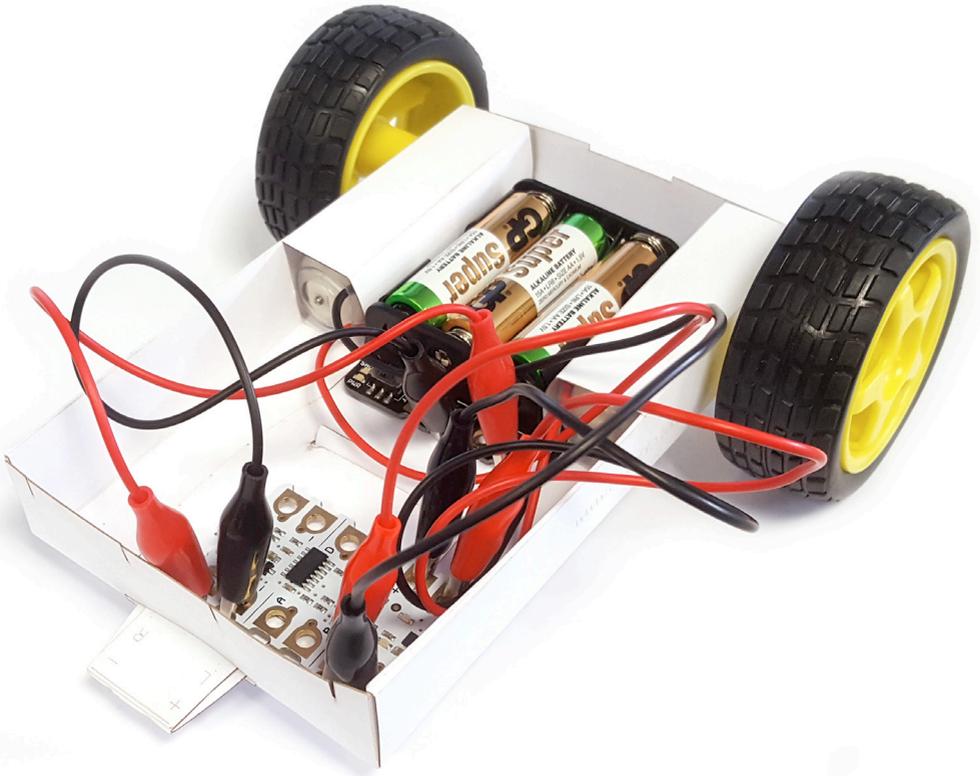
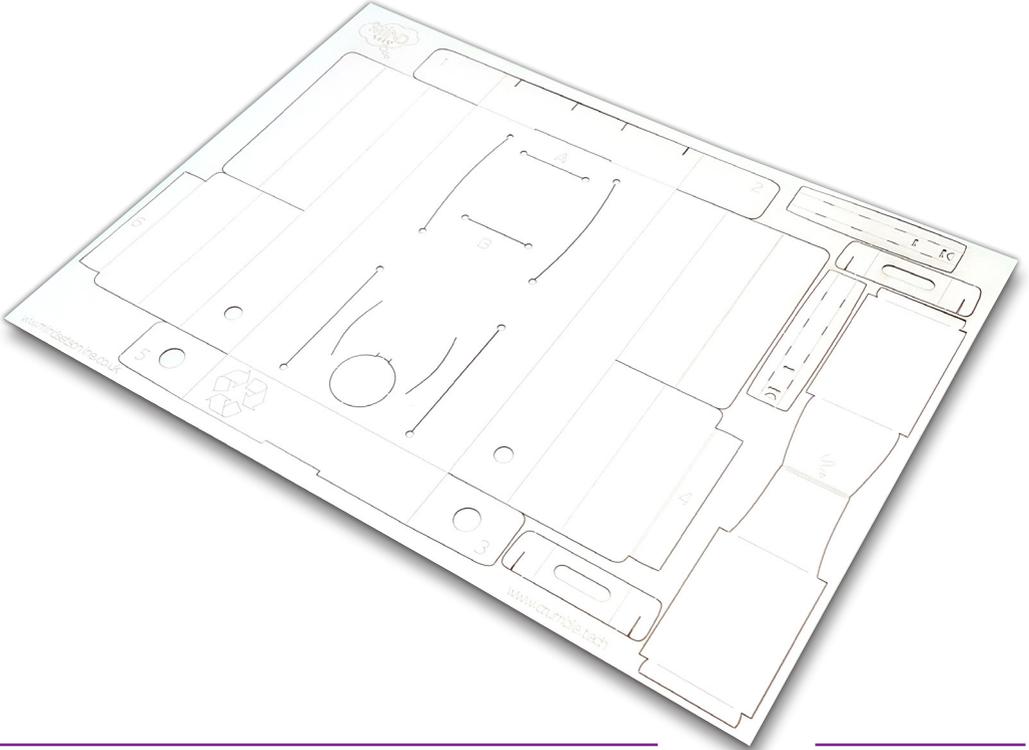


Crumble Card Buggy



Parts

- Lasercut card development

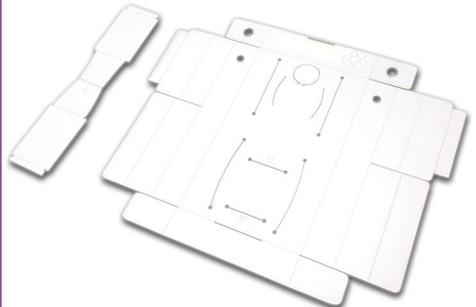


1

Gently press out the two largest sections of the buggy.



You should have the main body section and the long front piece.



2

Crease all the fold lines starting with all numbers / letters facing down.

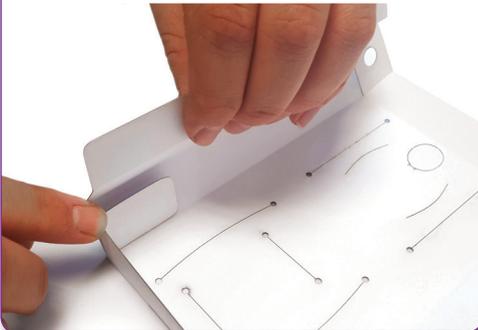


Partially re-flatten.

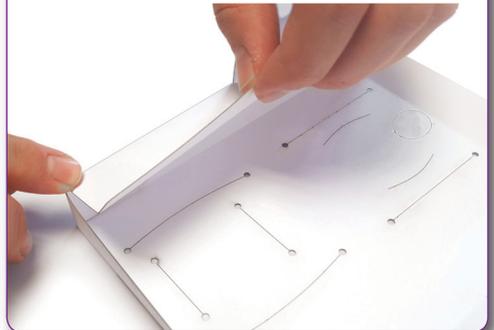


3

Fold tab '1' by 90° and lift the end section to create a box-like corner.



Fold the side section over tab '1' and fold the end section of this back.

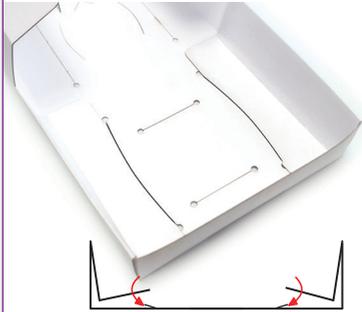


4

Press this long tab section down to be flat with the base.

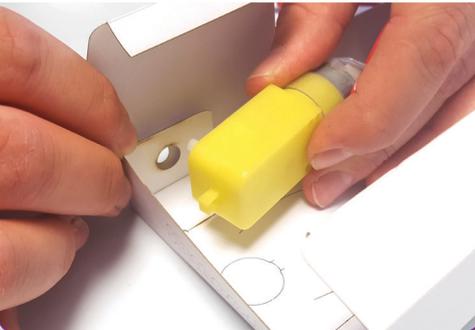


Repeat this with tab '2' and then tuck the long tabs under the curved slots.

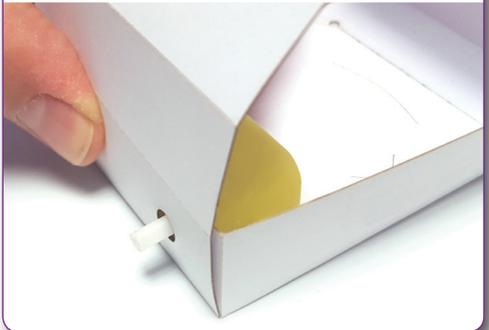


5

Fold tab '3' up by 90° and fold up the side.

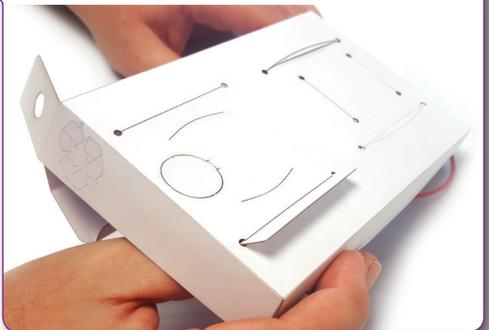


Place a gearbox so that the output shaft is through the hole.



6

Fold the cardboard side around the gearbox and tuck tab '4' through the slot in the base. Check it is completely through the other side.

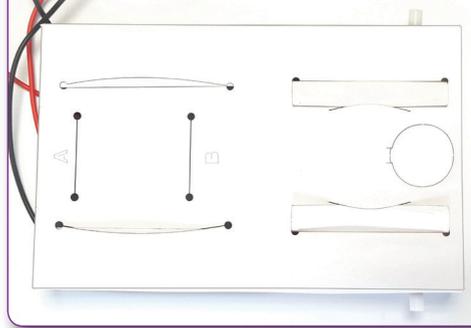


7

Tuck this tab under the curved slot by forcing the curved slot open.

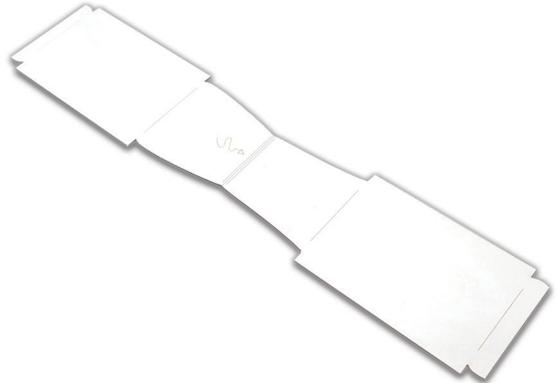


Repeat this process with tabs '5' and '6' until the underside looks like this.



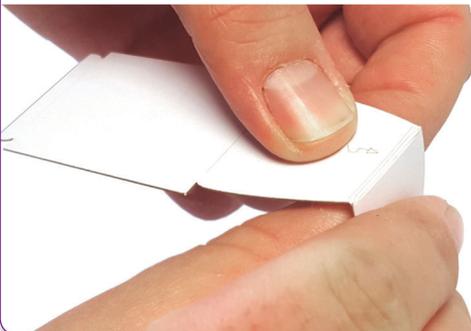
8

The holder for the Line-Follower widget is added next.

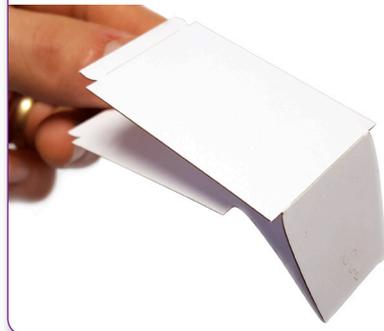


9

Fold this section in half at the middle.



Pre-crease the fold lines and re-flatten.



10

Gently bend this section over a finger or another curved object.



From the underside of the base, insert the narrow end into slot 'A'.



11

Feed this section through the slot in the front of the base section.



This narrow piece should be through two slot as shown here.

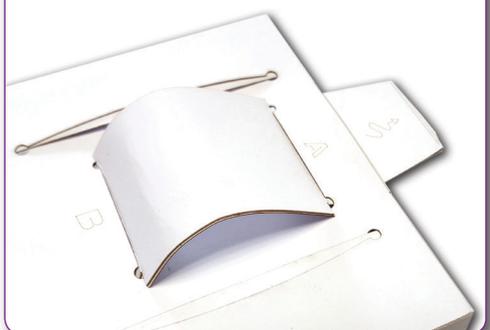


12

On the underside, curve this section back and insert the end into slot 'B'.



It should now look like this. Even out the curve in the card if necessary.



13

Align the gearbox shaft with the shape of the slot in the wheel.



Press the wheels on whilst supporting the back of the gearboxes.

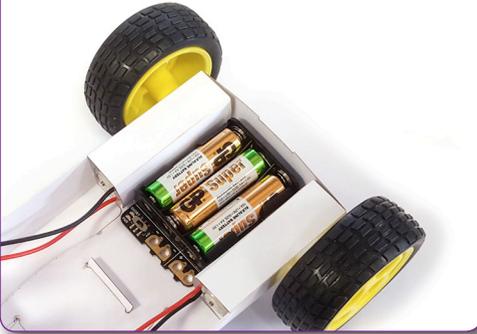


You buggy is now complete.

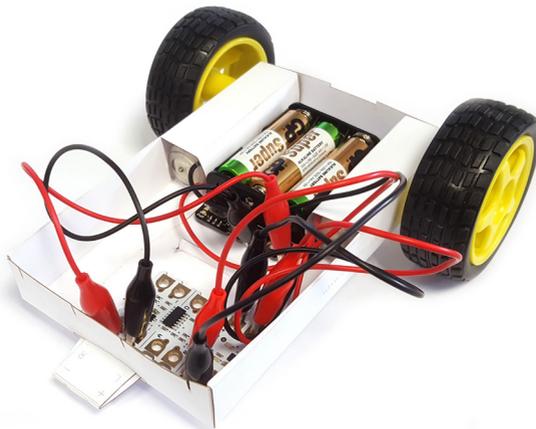
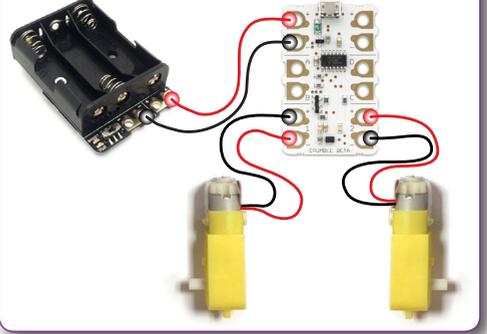
Now add your Crumble controller and the rest of your circuit...

14

Insert 3 x AA batteries (ensure polarity is correct). Place in rear of buggy.



Wire your buggy using crocodile clip leads.



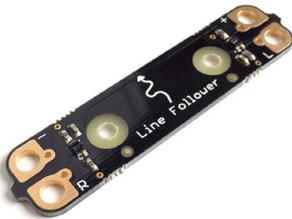
Sample program

```
program start
do forever
  motor 1 FORWARD at 75 %
  motor 2 FORWARD at 75 %
  wait 1 seconds
  motor 1 REVERSE at 75 %
  motor 2 FORWARD at 75 %
  wait 1 seconds
  motor 1 FORWARD at 75 %
  motor 1 FORWARD at 75 %
  wait 1 seconds
  motor 1 FORWARD at 75 %
  motor 1 REVERSE at 75 %
  wait 1 seconds
loop
```

This basic program will make the buggy go forward, turn one way, go forward, turn the other way then go forward again. The program will loop indefinitely.

Optional additions to your Crumble Card Buggy

Line Follower



Micro Switch



Ultrasonic Sensor



Line Drawing



For more information on using your Crumble...
<http://redfernelectronics.co.uk/crumble-getting-started/>

Designed, manufactured and supplied by:

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