Oscar and the Bird: LED 3D Tractor

A fun, 2-LED paper craft tractor project referencing the book titled Oscar and the Bird: A Book About Electricity by Geoff Waring. The headlights light up!

Written By: Andy Wallus



INTRODUCTION

A fun, 2-LED paper craft tractor project referencing the book titled Oscar and the Bird: A Book About Electricity by Geoff Waring.

The headlights light up!

You can make this project (and many more!) with our **Paper Circuits Kit.**

TOOLS:

- Scissors (1)
- Markers, Crayons, or Colored Pencils (1)
- Push Pin (1)
- Clear Tape (1)

PARTS:

- Paper Circuits Kit (1)
- Printable Template (1)

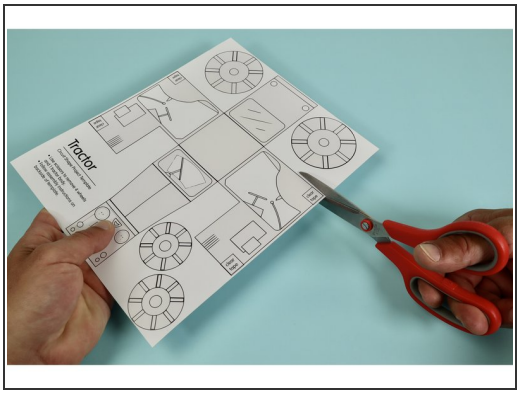
Step 1 — Gather Materials

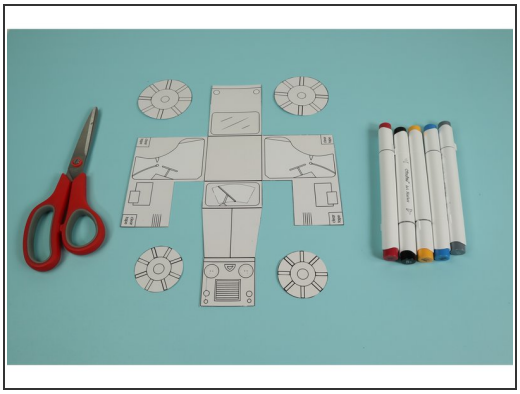


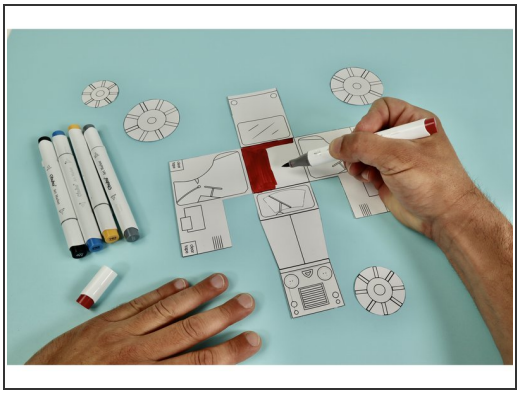
- Gather the materials and tools indicated.

ⓘ There is a black and white version and a color version of the template. We recommend printing this template on heavy cardstock.

Step 2 — Cut and Color Template

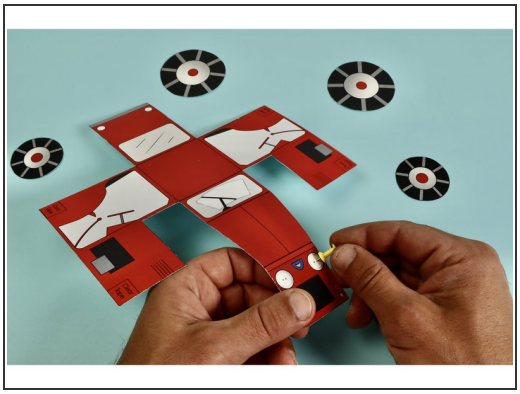
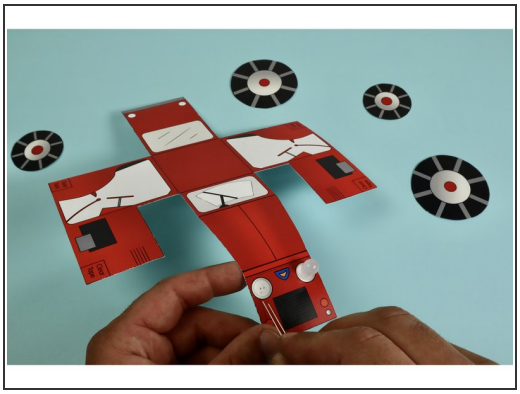
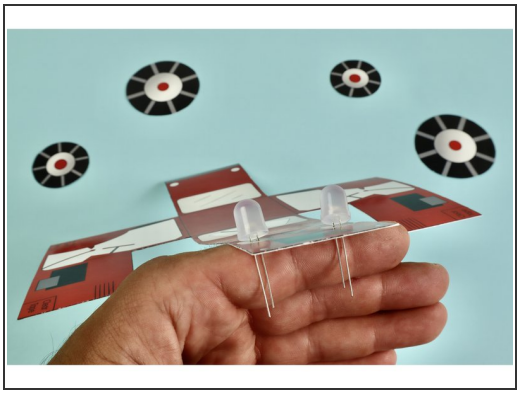






- **Cut** out the 4 wheels and the tractor body.
- If using the black and white template, **color** the tractor.

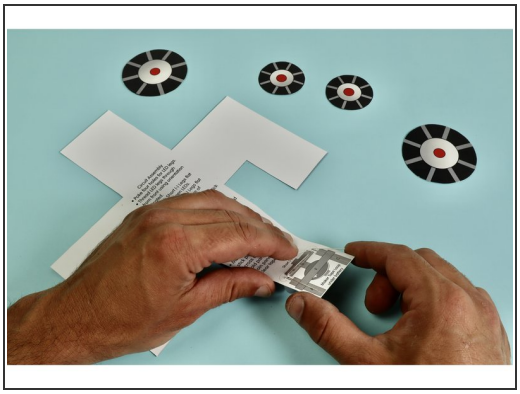
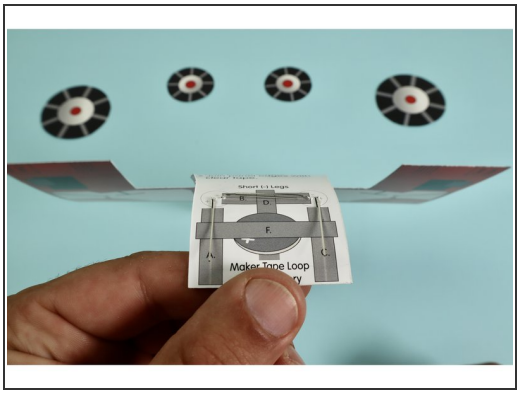
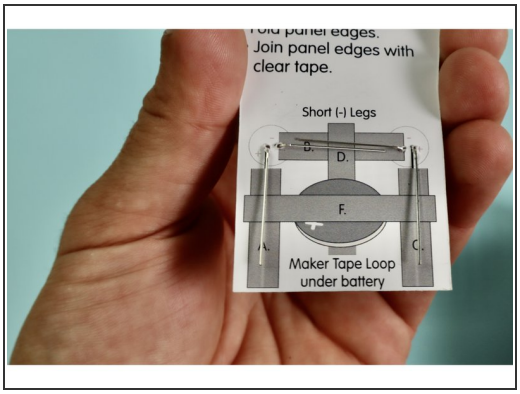
Step 3 — Poke holes and add LEDs

- Using a push pin poke holes through the front of the tractor where the **LEDs** will go.
- Insert the **LEDs** making sure to orient the legs properly.

ⓘ The **Long LED Leg** is **Positive** and needs to go in the hole labeled with +. The **Short LED Leg** is **Negative** and needs to go in the hole labeled -.

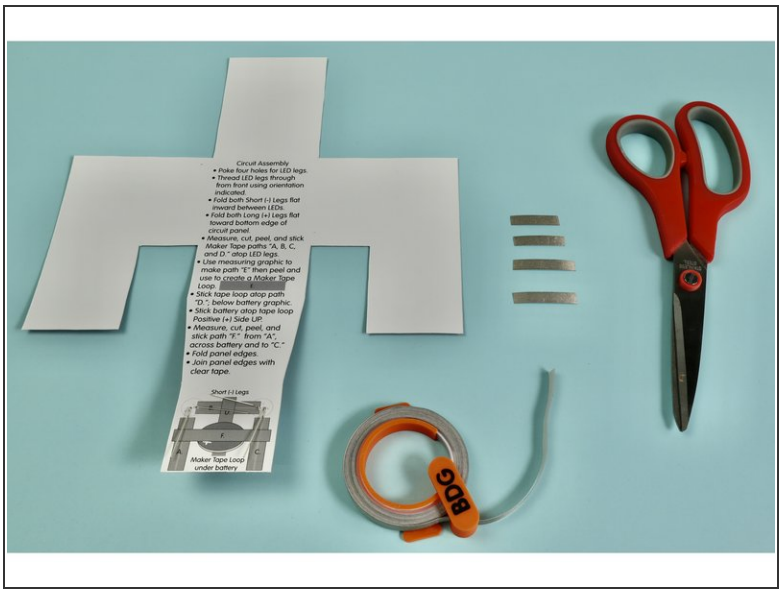
Step 4 — Fold LED Legs

- Flip over the tractor and bend the **LED** legs flat against the paper. Make sure to align the **LED** legs with the diagram on the back.

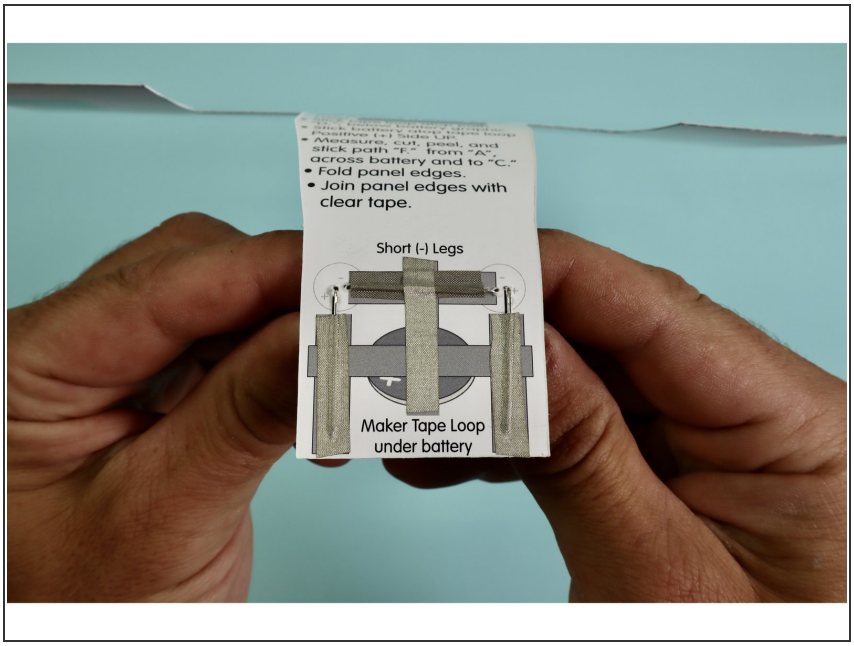
Step 5 — Prepare Maker Tape Paths





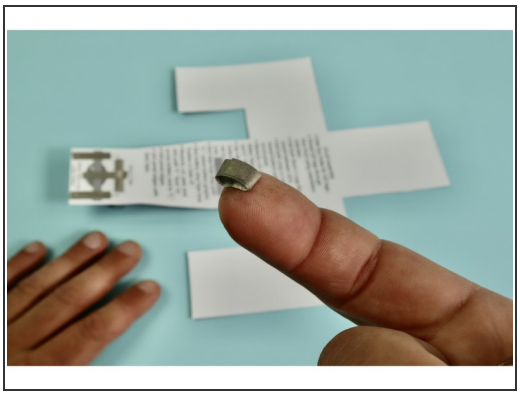
- **Measure and cut Maker Tape Paths "A, B, C, and D"** using the diagram as your reference.

Step 6 — Peel and stick paths "A,B,C, and D"



- Measure, cut, peel, and stick a piece of Maker Tape down as indicated atop the letter **'A.'**
- The tape should hold down one of the **Long LED Legs** so it makes the electrical connection for our circuit.
- Measure, cut, peel, and stick a piece of Maker Tape down as indicated atop the letter **'B.'**
- The tape should hold down both **Short LED Legs** so it makes the electrical connection for our circuit.
- Measure, cut, peel, and stick a piece of Maker Tape down as indicated atop the letter **'C.'**
- The tape should hold down the other **Long LED Leg** so it makes the electrical connection for our circuit.
- Measure, cut, peel, and stick a piece of Maker Tape down as indicated atop the letter **'D.'**
- This tape path should overlap path **'B.'** and end underneath the Battery. This connects the **Negative** side of the battery to the **Negative** LED legs of the circuit.

Step 7 — Create and Add Maker Tape Loop 'E.'

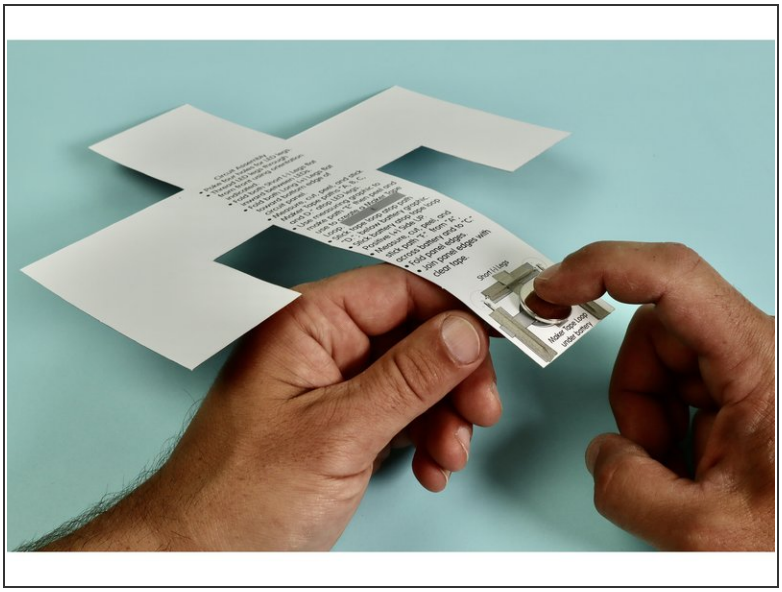




- Use Maker Tape to create a **Tape Loop** (with the sticky side facing out) and stick it down at the bottom of tape path 'D.'

⚠ If the **Tape Loop** is too large it may short out the battery.

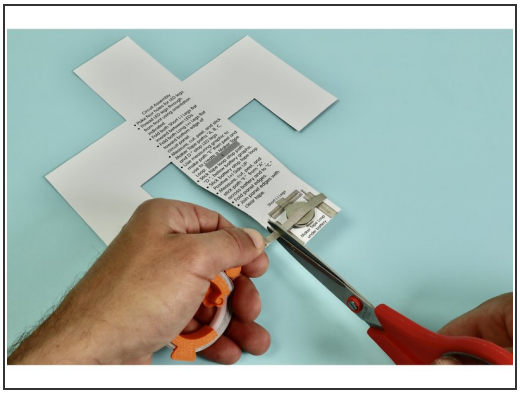
- Stick the **Battery** atop the Tape Loop ‘E.’ with the **Positive** (+) side up.
- The **Battery** should stick down to the Maker Tape securely and the tape will hold it in place.

Step 8 — Install battery

- **Install battery** by pressing it into place atop the tape loop Positive (+) Side UP.

Step 9 — Add Maker Tape to 'F.'

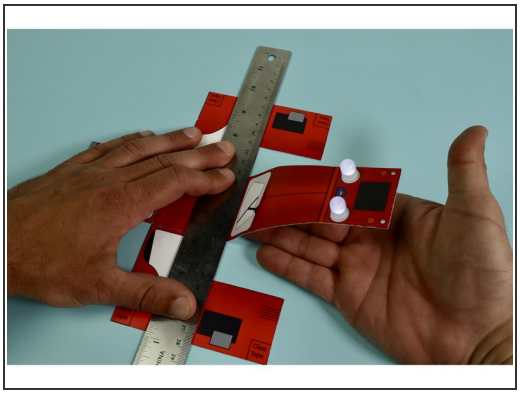


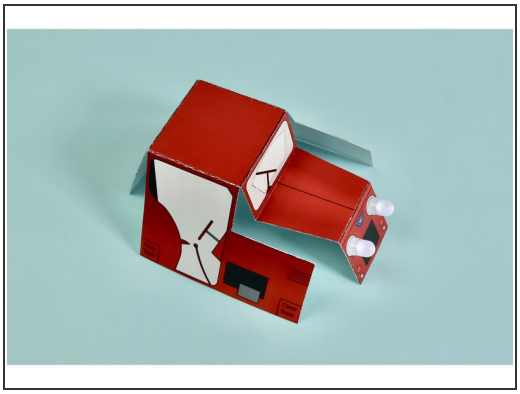


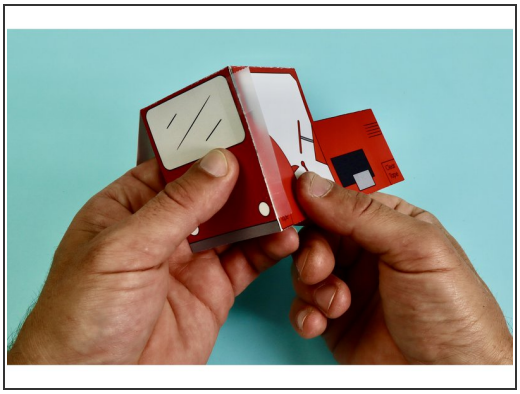


- Measure, cut, peel, and stick a piece of Maker Tape down as indicated atop the letter **'F.'**
- This tape path will connect path **'A.',** the **Positive** side of the battery, and path **'C.'**

Step 10 — Assemble the tractor





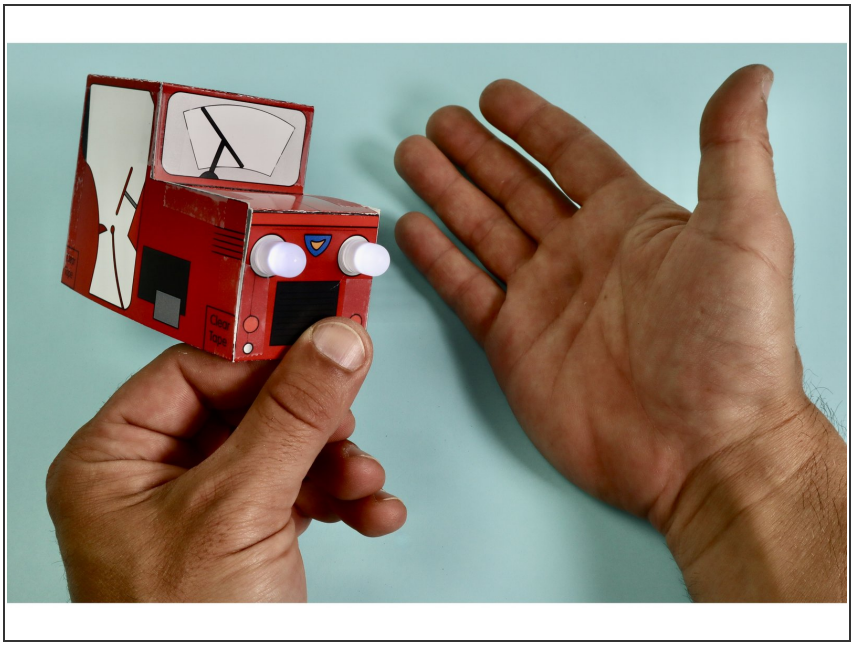


- Fold the **tractor** so it matches the image.

⚠ **Tip:** Laying a ruler across an intended fold and using it to fold against is helpful in creating accurate folds.

- **Use clear tape** along the edges to keep the panels together.

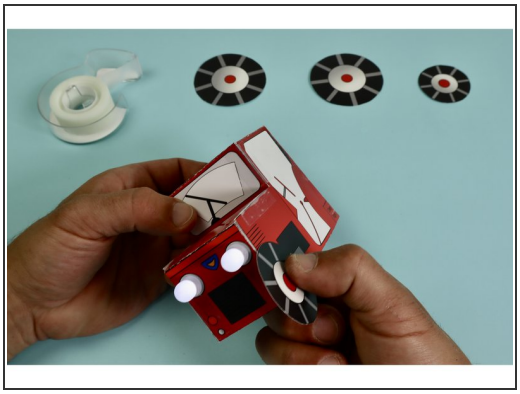
Step 11 — Tractor assembly continued

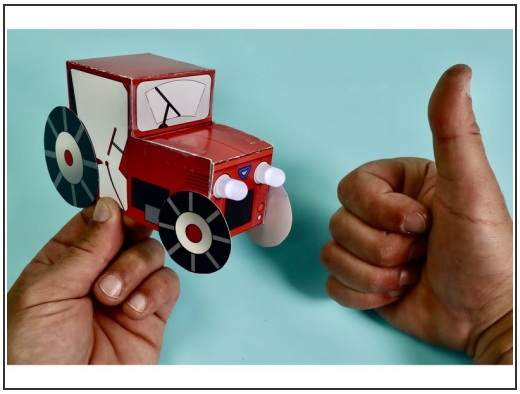


- **Your assembled tractor body should look like this and will have required 8 total pieces of tape.**

Step 12 — Add wheels

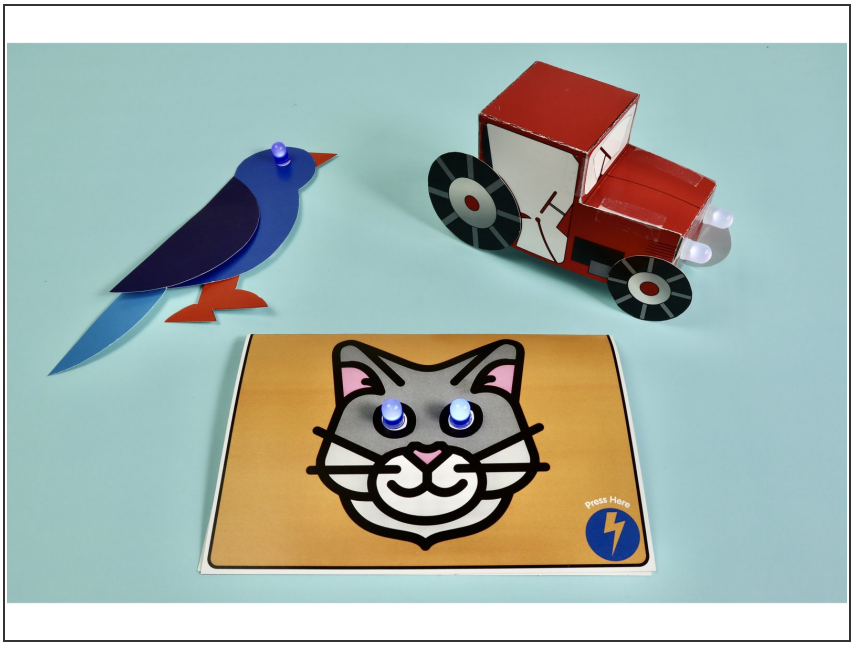






- Using clear tape make a loop of tape on the back of the **two large wheels**. These wheels get attached to the back of the tractor where it says "clear tape."
- Make loops of clear tape for the **two small wheels** and attach them to the front of the tractor where it says "clear tape."
- Congratulations! Your tractor is now complete.

Step 13 — More Oscar and the Bird Projects!



- Make more Oscar and the Bird themed projects! We've got more paper circuit activities to choose from.
  - Oscar and the Bird: Cat Card
  - Oscar and the Bird: LED Bird