UNSW MAKERBUS WORKSHOPS

# Mechanical Dragonfly

**DIFFICULTY**

★★☆☆☆

**WORKSHOP AGES**
Years K-2

**DURATION**
Approx. 90 minutes



## Learning Outcomes

- Laser cutting
- 3D printing
- Computer design
- Hand construction
- Simple circuits

## Parts List

### Premade

- 3D printed body and fittings
- Circuit board
- Solar panel
- Laser cut metal legs
- Screws

### Made during workshop

- Laser cut card wings

## Tools

- Screwdriver
- Hex wrench



## Pre-workshop

Students will be introduced to the basics of the technologies used in making their dragonfly kits i.e. 3D printing, simple electronics, and laser cutting. Teachers may like to introduce similar topics to students prior to the day of the workshop.

## Practical Workshop

A step-by-step procedure will be walked through by Makerbus ambassadors with all construction being either press fit or screwed in place. Mechanical parts are marked with the correct alignment to be fitted, but some students may require a little extra attention in placing these correctly.

Electronic parts are designed to fit loosely into the printed parts and should not require any force to be put in place. The solar panel that powers the circuit board does have a correct positive and negative lead, so confirmation of the right placement should be done before students power up their project in the sun.

A portion of the workshop may also be learning and using a laser cutter to create the dragonfly wings. Students will be shown individually or in pairs, throughout the course of the workshop, how to use the laser software and draw their own designs within a provided template. Makerspace ambassadors will then run the laser cutter for them to produce their own custom card wings to be fitted to their project.

## Safety

Tools and parts used in this workshop pose low risk for safety concerns with the attending students when given appropriate supervision. No PPE is required beyond basic school uniform.

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Created by Miles Moody