Lego Drone Building Syllabus

Fall 2017

# Instructor Information

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| --- | --- | --- |
| Instructor | Email | Class Location & Hours |
| **Paul Oblak** | **poblak@gmail.com** | Basement of 111 Main Street, Niles, MI 49120Wednesday – 1:00-2:00pm |

# General Information

Students will start by learning to solder and making their own small, battery-powered, LED circuit. Once they’re comfortable soldering, students will be ready to build and test their first drone – Mini Lego Drone by Kitables. Students will get to take the drone they make home to keep.

Then we can move on to a more complex drone, using the Flybrix drone kit, which allows students to test out quad, hex, and octo airframe designs!

We will compare different designs and discuss basic electronics and flight techniques. Students will test their drones in obstacle courses, search and-rescue simulations, and more!

Grades 4 & up

## Expectations and Goals: (circle one): Pass/Fail or Grade Given

# Course Materials

## Required Materials (most should be provided by teacher covered in course fee, indicate if provided by student, i.e. sewing kit)

* Soldering Iron
* Laptop
* Practice Soldering kits
* Kitables Drone
* Flybrix Drone

## Optional Materials (provided by student/family)

# Course Schedule

| Week | Topic |  |  |
| --- | --- | --- | --- |
| Week 1 | Intro/overview, soldering how-to, Practice soldering kit (LED circuit) |  |  |
| Week 2 | Drone designs + start mini Lego drone |  |  |
| Week 3 | Finish mini Lego drone |  |  |
| Week 4 | Drone - maneuvering, testing, & repair |  |  |
| Week 5 | Drone - relay races + obstacle courses |
| Week 6 | Intro to Flybrix drones + models |
| Week 7 | Building Flybrix drone 1 |
| Week 8 | Finish Building Flybrix drone 1 |
| Week 9 | Drone - testing, camera attachment + aerial photography |
| Week 10 | Drones in search & rescue; drone search simulation (treasure hunt) |
| Week 11 | Building Flybrix drone 2 |
| Week 12 | Finish + testing Flybrix drone 2; start drone 3 |
| Week 13 | Finish + testing Flybrix drone 3 |
| Week 14 | Building Flybrix drone 4 |
| Week 15 | Finish + testing Flybrix drone 4; practice/prep for demo |
| Week 16 | Drone party/demo |

# End of Semester: Finished Work

* Evidence of Learning (circle one): post-test score improvement, fine arts recital, work of art/art show, class/parent/public performance, achievement of a higher level or rank, product creation, scrapbook, written examination or report.