

HANDOUT: Efficient Reading: Building a Drone (3 pages)
Skill Builders: Key Words & Phrases, Skimming, Scanning

IN THE WORKPLACE: People read text for different purposes. Whatever the reason for reading, being able to quickly and accurately find and understand the information you need makes reading both more pleasant and more efficient.

Refer to the excerpt from the text **Building a Drone** to complete the tasks and locate answers to the questions.

Being able to predict content from titles and sub-titles in a document is an effective strategy to make it easier to understand the content and read faster and more efficiently.

1. **Before** reading the text, and just thinking about title, list 2 things you think will be mentioned in the text.

2. **Before** reading the text, look at the information below about the author. What do you think the author's purpose in writing will be? Write it in 1 sentence.

The author describes himself as "I use technology to make the world more open. Linux desktop enthusiast. Map/geospatial nerd. Raspberry Pi tinkerer. Data analysis and visualization geek. Occasional coder. Cloud nativist. Civic tech and open government booster".

3. **Next** reading the text, what is the author's intent in writing? (For example, the author is writing to warn, inform, persuade...) Write your answer in 1 sentence.

4. What is 1 question you could ask that the text answers?

5. What is a related question that the text does NOT answer?

6. Using another source, find the answer to the question you identified in number 5. Identify the source.

7. Does the excerpt want you to read more of this text or a similar one? Why or why not?

Building a Drone

Over the past few years, interest in civilian, military, and commercial drones has grown rapidly, which has also driven the maker community's interest in open source drone projects.

The list of unmanned aerial devices (UAVs) that fit the moniker of drone seems to be constantly expanding. These days, the term seems to encompass everything from what is essentially a cheap, multi-bladed toy helicopter, all the way up to custom-built soaring machines with incredibly adept artificial intelligence capabilities.

Most people are looking for something in the middle. They'd like a flying vehicle that is large enough to support a decently long flight time, hold a camera or other data capture device, and perhaps be able to control some (or all) of its flight autonomously using pre-programmed coordinates or real-time data.

The premade devices in this space vary greatly in both price and build quality, and most of the ones I've seen use proprietary software and hardware. But you don't have to go this route! The drone-building community has created many software and hardware projects under open licenses that allow you to build, repair, customize, and experiment with your own drone, or to supplement the use of drones in some other way. Let's take a look at some of those projects.

Paparazzi UAV: A GPLv2 licensed project that combines both the software and hardware needed to build and fly an open source vehicle under open licenses. Source code and releases of the software components can be found on GitHub, and tutorials for adapting it to off-the-shelf or custom-built hardware can be found on the project's wiki.

ArduPilot: Claims it's "the most advanced, full-featured, and reliable open source autopilot software available." Its features include advanced data-logging, analysis, and simulation tools, and it's supported by a broad ecosystem of third-party sensors, companion computers, and communication systems.

Flone: A cool project that basically turns a smartphone into a drone. It combines a digitally fabricated airframe with software that allows an Android smartphone on the ground to control the one strapped onto the airframe via Bluetooth. It is licensed under GPLv3 and its source code resides on GitHub. English-speaking developers and drone enthusiasts should know that the project is based in Spain and most of the documentation and other materials are in Spanish.

This is definitely an incomplete list of open source drone projects; others you may want to check out include MatrixPilot and AdaPilot.

Ref: Baker, J. (February 12, 2018). 8 open source drone projects. Retrieved from:
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