Need to Know:

- Need an app on a mobile device to run FreeFlightMini app (and later Tynker/Swift)
- 25 minute battery life - takes 30-90 minutes to recharge
- Start indoors
- If Coding, drone may pickup another controller
- Swift 3.0 is the fastest growing Programming Language!
- It is a little loud (humm) but is resilient to “crash landings”

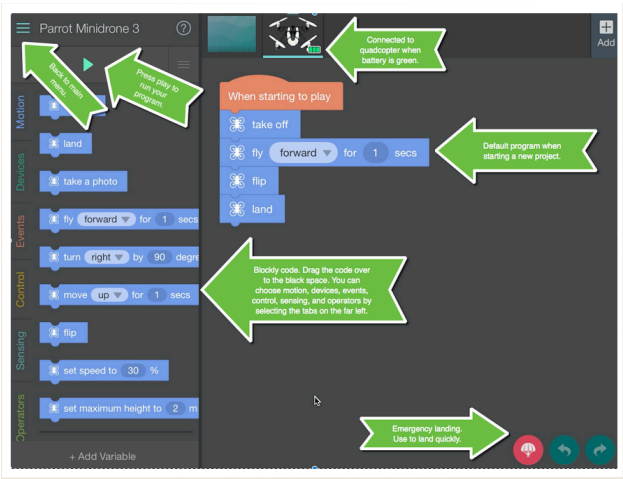
SCAFFOLDED approach for students to explore the tool. Beginning as a “remote control” and expanding into coding and programming

FREE FLIGHT: Allows for real flight time, acrobatics maneuvers and in-flight camera for photos & videos.

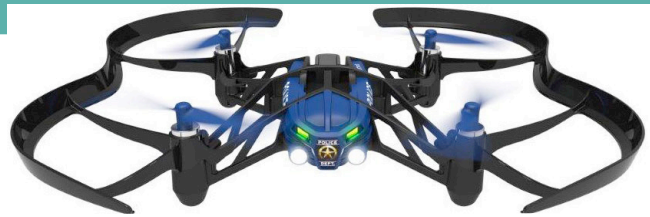
FLIGHT PLAN: An in-app that helps students explores more about autonomous mission plans

TYNKER: Allows for block coding as an interface for elementary-middle school students. Programming tested in-app and then uploaded to the drone

SWIFT: Another coding app that allows students to create more programs to control mini drones.



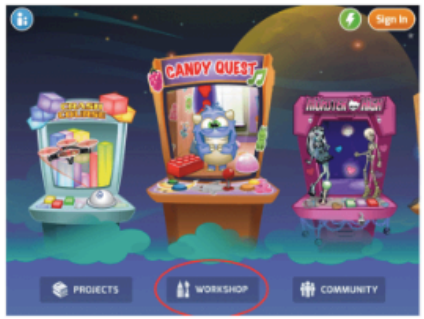
PARROT MINI DRONE



Programming Parrot Drones with Tynker

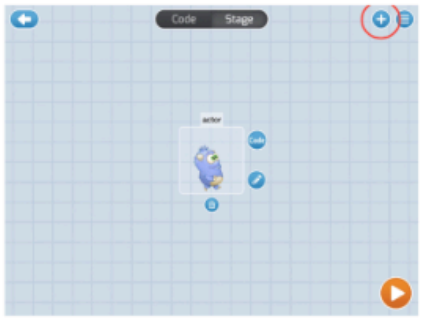
Create your first drone program

Select the “Workshop” section and start a new blank project. Add an Actor to represent the drone. You do this by selecting “+” to add an Actor, choosing the “Connect Device” category and selecting your Drone as an Actor. Once added, you’ll see that it comes with some default code.

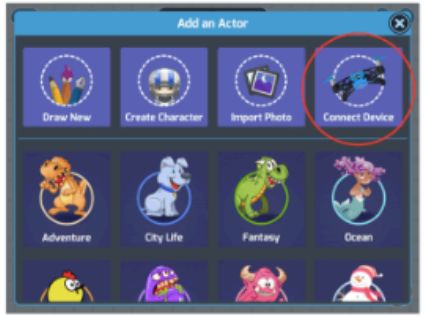


Go to the Workshop

Create a blank project



Add a new Actor



Select “Connect Devices”

Click to see drone code

Indicator is green when paired

STARTING IDEAS

Obstacle Course:
- Two objects the drone has to go around
- An object to fly over
- An object to fly under
- Land on a target

(First via remote, secondly via program)

Photography:
- Unique perspectives of everyday items

Block Programming
- Using Tynker or Swift to explore using block code to create a flight plan

Lesson Details

Concepts Learned

- Simple Events
- Flight Control

Code Blocks Introduced

Parrot Drone Cargo Challenge

Group Member Names:

_____Date_____Class_____

Objective:

To discover how much cargo your Parrot drone can carry from point A to point B. The drone must reach an altitude of at least one meter and safely deliver the cargo.

Materials:

Parrot drone, Lego bricks, balance scale and weights, meter stick, iPad with Tynker app.

Procedure:

1. First program your drone to take off from point A, rise to a height of at least one meter (no more than 2 meters) travel forward and land at point B.
2. Next, experiment with placing Lego bricks on your drone and then attempting to fly the program you created in step one.
3. Adjust your program to compensate for the Lego bricks.
4. Use the balance scale to measure the weight of your cargo.

Reflection:

- How much weight were you able to lift with your drone?

  _____
- How did you adjust your program after you added the weight?

  _____
- What was the most challenging aspect of this lesson?

  _____
- What would you do differently if you were to repeat this lesson?

  _____

From First Peoples Principles Of Learning:
- Learning is holistic, reflexive, reflective and experiential
- Learning involves patience and time