

Drones in Education: Make the Days Fly By!

Shana Matz: @shanamatz
Math and Technology Specialist
Apple Teacher

Mike Matz: @mikem011
System Engineer

Wyomissing Area School District

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#LearningWithDrones #Goals

Safety
Legality
Liability

Helpful Hints

Integration
Across
Curriculum

Resources

Coding
Connections

Explore and Fly



Engage and Inspire

- Students are growing up in the digital age
- Drones are engaging educational tools that touch upon a variety of subject areas - not just STEM
- Parrot Education: <https://edu.parrot.com>
- Parrot Education Activities: <https://activities.parrot.com>
- Fairly cheap and easy implementation



ISTE Standards

The ISTE standards consist of five benchmarks for teachers:

1. Student learning and creativity
2. Digital-age learning experiences and assessments
3. Digital-age work and learning
4. Digital Citizenship and responsibility
5. Teacher professional growth and leadership



Safety, Legal, and Liability Issues

- Safety: demonstrate, tutorials, first flight in open space
- Legal: indoor use does not fall under FAA regulations
- Legal: outdoor use - check website for current guidelines (FAA.gov); 5 miles radius of airports and flight paths for flights over 400 feet
 - B4UFLY app - free on Android and iOS
- Liability: photos, risk of injury, damage



Professional Development

- Morning “Appy Hour” meetings to introduce drones to teachers
- Borrowed drones to gain confidence and comfort levels
- Push in support during curriculum use



Helpful Hints

- Label all drones with specific code to that device
- USB charging block for quick charges
- Extra Supplies - batteries, blades, hulls
- Store drones with batteries ejected
- Fly away from walls/lights
- Show introduction video before first flight



Parrot[®]

MAMBO



Integration Ideas



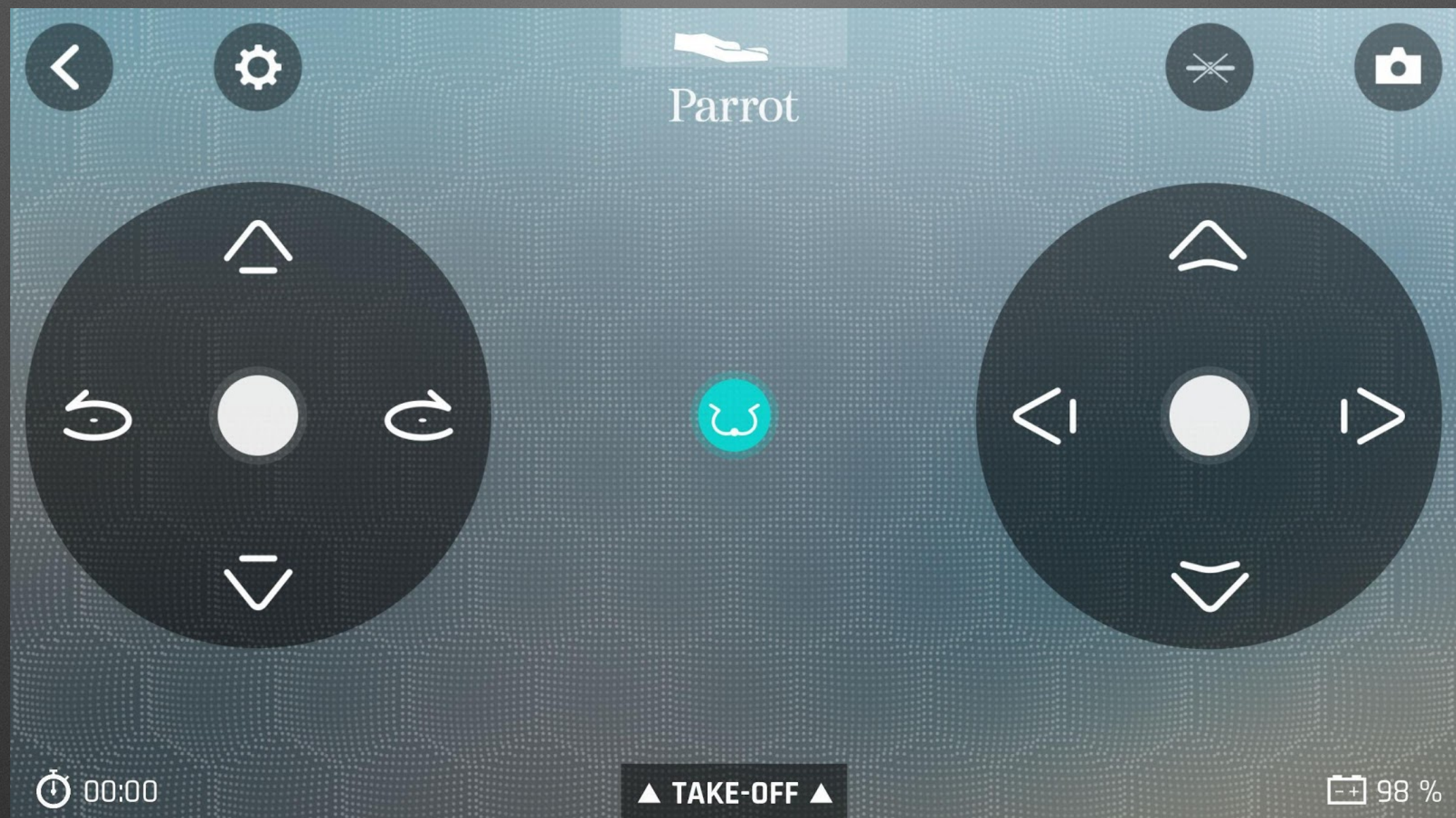
Free Flying with Free Flight Mini app

- Always start with a day of just flying before trying to accomplish any objectives

Challenges:

- start simple with start and stops on red and green dots
- work towards obstacle courses of varying difficulty

Free Flight Mini



Up/Down
Rotation

Forward/Backward
Left/Right



Integration Ideas

- Math: Positive/Negative numbers, Coordinate grid/Ordered Pairs, Geometry Terms, Graphing, Measurement
- Language Arts: Point of View, Storytelling, Research history
- Social Studies: Product Delivery, Geography/Maps, Timelines, Traffic Safety
- Science: Distance/Rate/Time, Solar System
- PE: Birds Eye View
- Art: Video Editing/Photography, VR

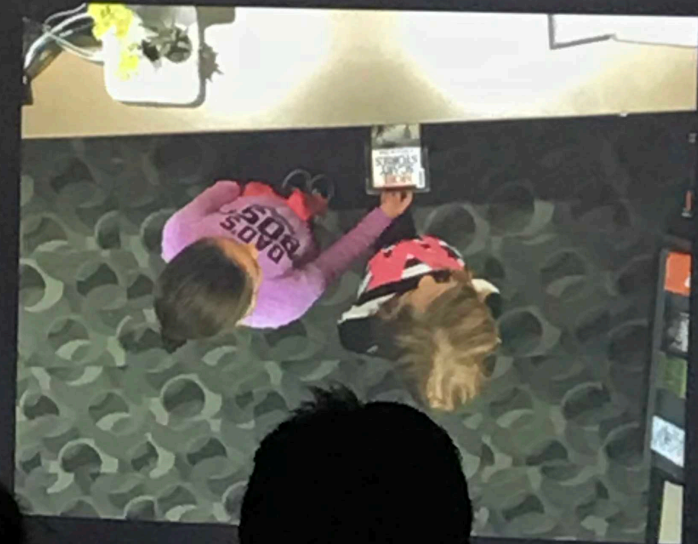




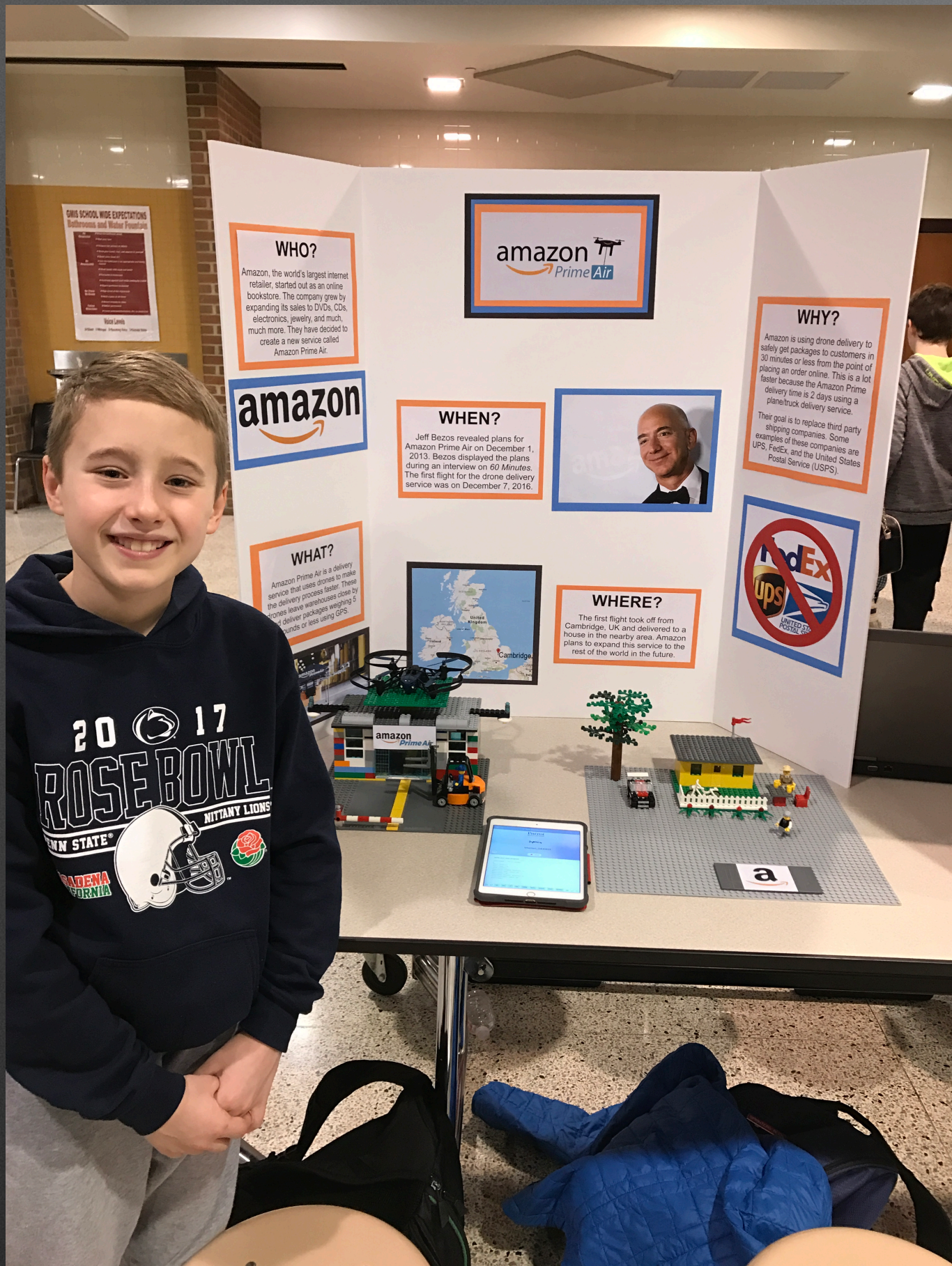
3rd Person Limited



3rd Person Omniscient









Coding Connections



Swift
Playgrounds

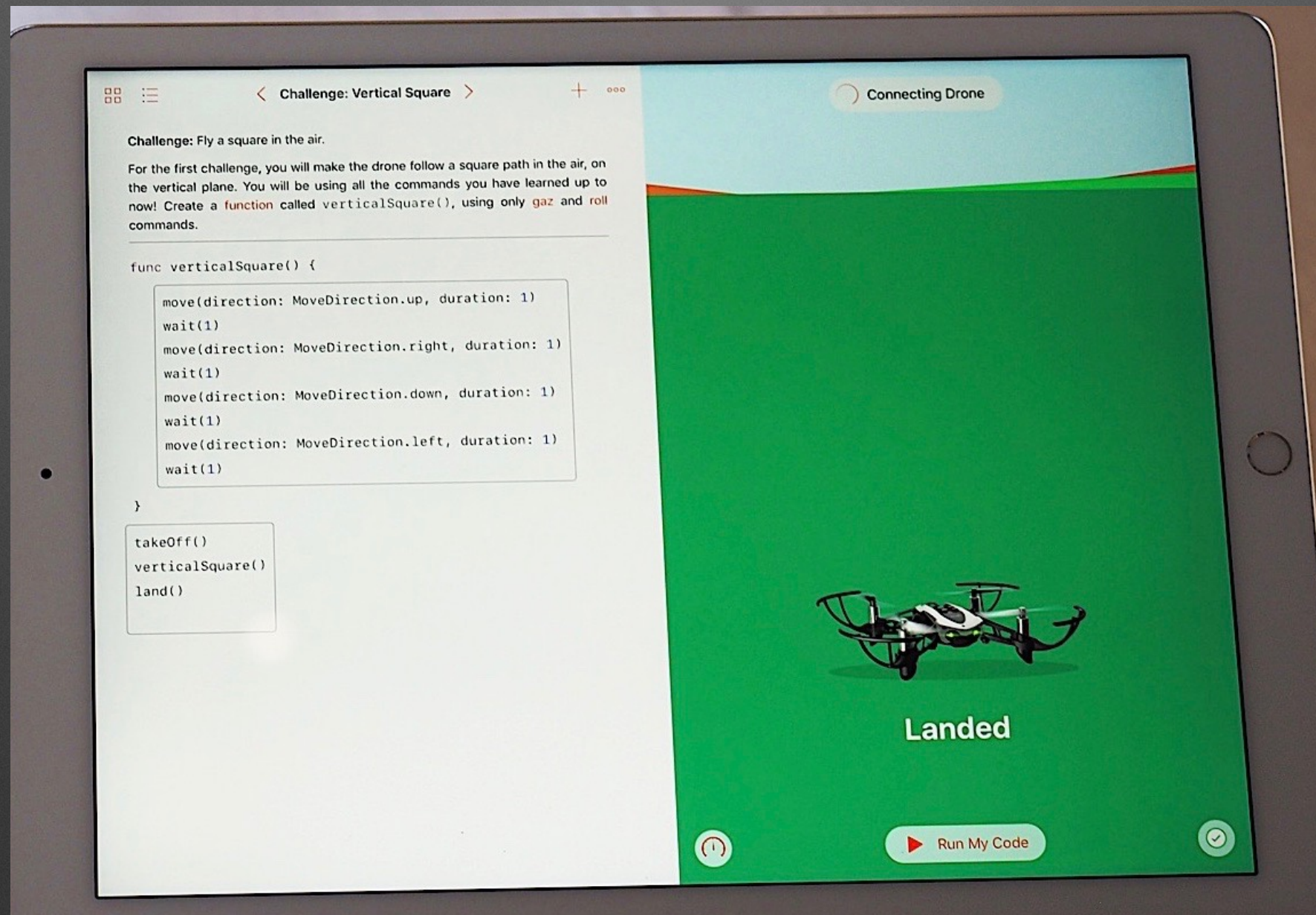


Tynker



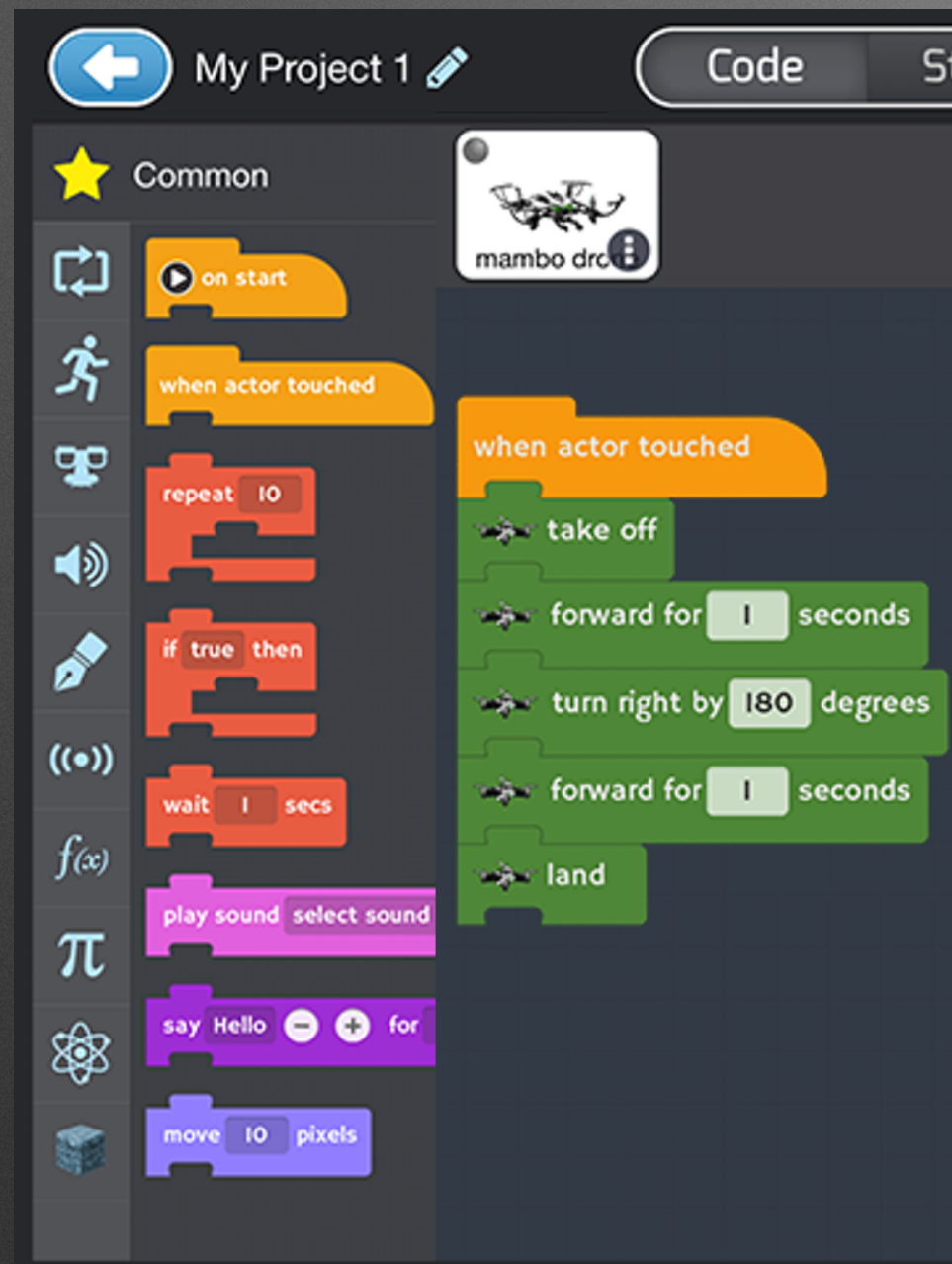
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Coding Connections

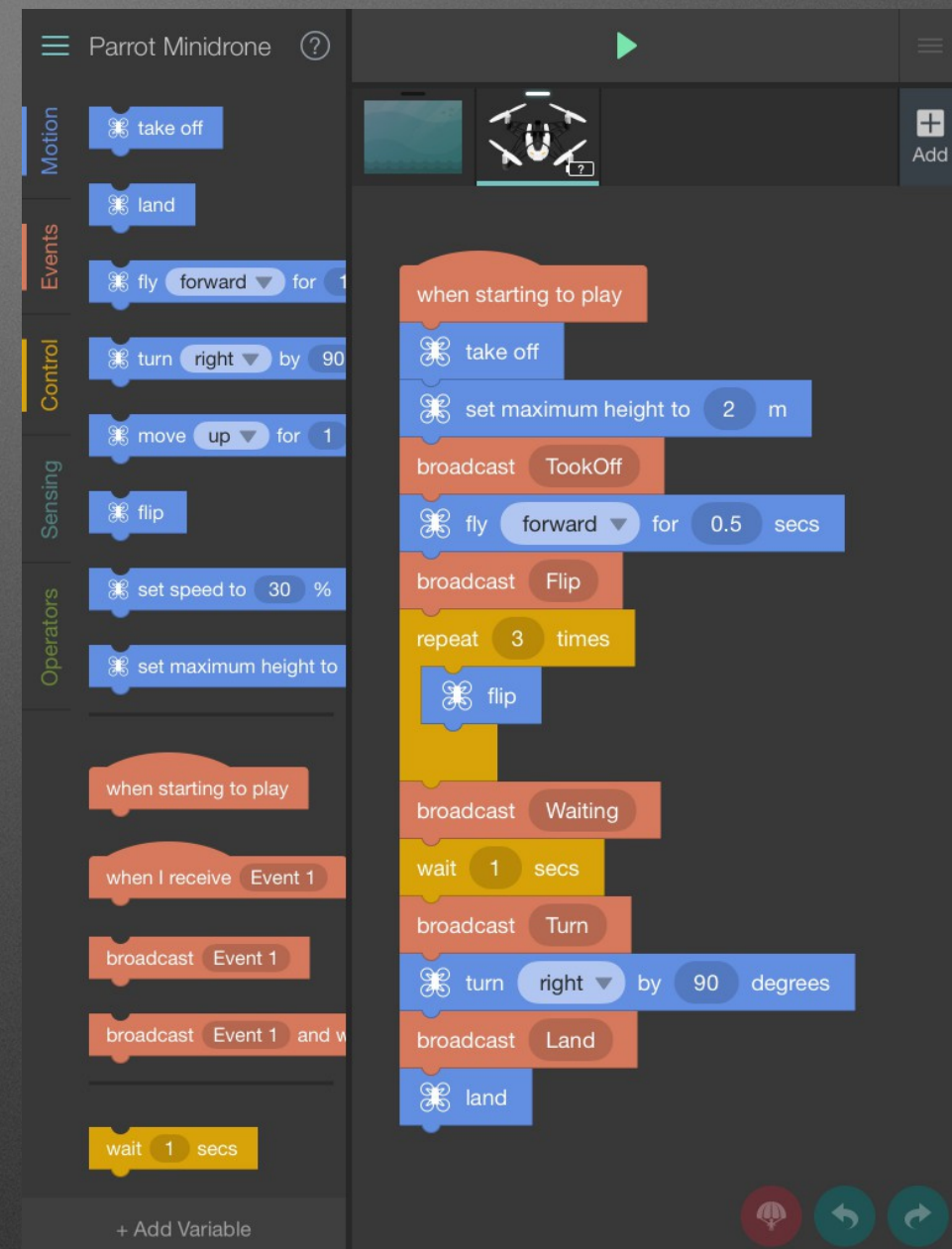


Swift
Playgrounds

Coding Connections



Tynker



Tickle

Resources

- Drones in Education: Let Your Students' Imaginations Soar by Chris Carnahan, Laura Zieger, and Kimberly Crowley (book)
- Drones Can Be Fun by Heather Wolpert-Gawron (Edutopia)
- Parrot Education
- Parrot YouTube Channel

