HYBRID LEARNING - 1:1 HUMMINGBIRD

Robofun Teaches 1 Week Virtual Robotics Camps with Students Grades 3-6

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robotics ▸ game design ▸ stop motion animation ▸ minecraft & circuitry

Imagine ▶ Inspire ▶ Ignite

Robofun, based in NYC, uses technology to foster experiential learning for pre-K through 6th grade students. Traditionally they host in-studio classes that allow children to be builders, makers, and coders.

In March 2020, Robofun designed an online course driven by the Hummingbird Robotics Kit. This kit was chosen based on its interdisciplinary nature, compatibility with common craft materials, and research-based design. BirdBrain shipped kits to students' homes, and Robofun continued valuable hands-on learning outside of the classroom.

ADAPTATIONS

• 5 Students : 1 Teacher

• Slower teaching pace

• Place more problem-solving ownership on students

RECOMMENDATIONS FOR DISTANCE LEARNING*

1. Consider teaching small groups of up to 5 students. Smaller groups allow for greater engagement and differentiation when grouping by coding experience, device, or other commonality.

2. Allow students to come up with their own creative solutions to problems. You won't be able to act on your instinct to jump in and physically help students troubleshoot. Remind yourself that this fosters confidence-building for future challenges!

3. Show and tell, and take it slow. You won't be able to read students' cues as clearly as in the classroom, so plan extra time when presenting new content. It's possible to reach different types of learners virtually.

*As of 7/15/20, Robofun has hosted 11 weeks of camps, which serves as the basis for these recommendations.

CHALLENGES

• Younger students' fine motor skills were still developing, so some tasks were more difficult than expected

• Troubleshooting user error with Hummingbird mid-project (wire connections, file downloads) takes longer virtually

SUCCESSES

• Students expressed so much joy through customizing and approaching their projects creatively. Often they created stories around their robots.

• The teacher reported increased comfort and confidence in students' use of the technology

TEACHING SEQUENCE

Caregivers enrolled students in a 1 week online camp that ran for 5 days, one 90 minute session per day. Class size was restricted to 5 students, grades 3-6. Hummingbird Kits were shipped to students' homes prior to the start of the camp.

The teacher was given a Hummingbird Bit Premium Kit a week prior to instruction and encouraged to take the free online PD course as an introduction to teaching with the new technology. See resources for teacher introduction.

"Using recycled materials such as cereal boxes teaches kids that you can often do more with less materials."

1. Animal Planet was the theme of the camp, with a focus on animal behaviors and animal conservation. In Session 1 of 5, the teacher introduced students to the components of the Hummingbird Kit, one by one, and checked comprehension with an identification game. Create your own game with this guide.

2. In Session 1 the teacher guided students through connecting a few outputs (2 motors and 2 LEDs) and creating code to trigger movement and light. See resources for student introduction.

"It's amazing to see students able to thrive in an online environment with the help of Hummingbird. It is a great way to explore wide ranging concepts while also giving the students something tangible to work on."

3. Sessions 2-3 were spent making multiple small projects that related to the theme. See examples of small robot projects.

4. Students were comfortable by sessions 4-5, and ready to tackle a more difficult build or add features with code.

Check out this interview highlighting a student's experience learning virtually with the Hummingbird Kit.

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