cubelets
ROBOT BLOCKS

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Act Out Cubelets



Lesson Overview

Students practice acting out 3-block Cubelets robots.

Students make a Drive Bot with Cubelets, then another group acts out the robot the first group built. The teacher can be the "hand" signalling the student who is being the Distance Cubelet.



Lesson Tags

Grade Level
Preschool & Kindergarten

Difficulty
Apprentice

Duration
30 minutes

Prerequisite Knowledge
Distance SENSE Cubelet
Drive ACT Cubelet
Battery Cubelet



Supplies

Cubelets (6 groups of)
1 Distance SENSE
1 Drive ACT
1 Battery

Other Supplies
(optional) Cubelets Costumes
(optional) Blindfolds for non-SENSE Cubelets actors



Description

Outline

1. Review what we know about robots and Drive Bots
2. Play Red Light, Green Light
3. Act Out Cubelets

Objectives
Students will act out the Cubelets in a 3-block Drive Bot, paying attention to the differences between the jobs of each robot block in the robot construction.

Assessment
Students will demonstrate an understanding of the different jobs of the Distance SENSE Cubelet, Drive ACT Cubelet, and Battery Cubelet.

How did this lesson work for you? Let us know! goo.gl/sLsypR
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Standards

ISTE

1.d. With guidance from an educator, students explore a variety of technologies that will help them in their learning and begin to demonstrate an understanding of how knowledge can be transferred between tools.
4.b. Students use age-appropriate digital and non-digital tools to design something and are aware of the step-by-step process of designing.
4.d. Students demonstrate perseverance when working to complete a challenging task.
5.c. With guidance from an educator, students break a problem into parts and identify ways to solve the problem.
7.c. With guidance from an educator, students take on different team roles and use age-appropriate technologies to complete projects.

Common Core

NA

NGSS

NA

Vocabulary

Collaborate
Cubelets
Robot
Sense
Think
Act
Battery
Distance
Drive
Toward
Away
Cuddle-Bot
Fraidy-Bot
Dizzy-Bot

Resources

Attachments

NA

Tips & Tricks

- Have the cubelets for each group already at each table - make sure they are *not* connected together yet.
- It is very hard for young children to understand that they control the robot with the black SENSE Cubelet - many students fixate on the ACT Cubelet instead
- Before class, reflect on your students as collaborators. What support will they need to work together successfully today? Possible team roles:
  - Materials Manager
  - Team Leader (in charge of making sure group stays on task)
  - Recorder

Pacing

5 minutes: Review what we know about robots and Drive Bots
10 minutes: Play Red Light, Green Light
15 minutes: Act Out Cubelets

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Instructional Steps

Step 1 - Pre-class setup

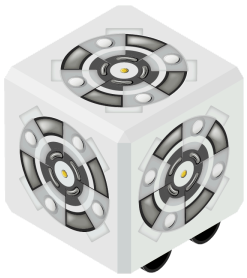
Time: 10 minutes

Cubelets Needed

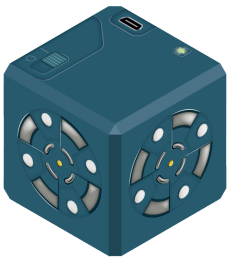
- ❏ Separate Cubelets into 6 groups, each containing:



1 Distance SENSE



1 Drive ACT



1 Battery



- ❏ Make one "Cuddle-Bot" before class. (Remember, a Cuddle-Bot is a robot construction that drives *toward* your hand)

Classroom Management

- ❏ Plan student groups with no more than 3 members in each group. It is ok if you have more groups than Cubelets. Not every group will need Cubelets at the same time.
- ❏ It is wise to start every class with a reminder of the behavior expectations. What are the norms when students are working together? What are the norms when they are discussing as a whole group?

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Step 2 - Cultivate Wonder

Time: 5 minutes

Setting the Stage for Today's Learning

"We've already learned a lot about robots. Can anyone remind me what is a robot?"

- [A robot is a machine that can SENSE, THINK, and ACT]

"And what do we know about Drive Bots?"

- [Identify Drive Cubelet, Distance Cubelet, and Battery Cubelet]
- [Our hand controls the Distance Cubelet]
- [The Drive Cubelet only drives one direction, but we can turn it any direction we want]
- [The Cubelets can be in any order we want them]



Step 3 - Experience Before Expertise

Time: 10 minutes

Red Light, Green Light

"Now we're going to play the game we've played before. It's called Red Light, Green Light. Does anyone remember how we play?

- [First, you're all going to stand in a line on one side of the room and I'll stand on the other side.
- Then when we're all ready, we'll turn on our batteries [use same gesture as yesterday.]
- Once you're on, you'll first need to SENSE whether I'm holding up a Green Light or a Red Light [Show students what each looks like - a plain piece of red construction paper and green construction paper will be plenty]. If you SENSE a Green Light, you will move forward like a robot. If you SENSE a Red Light, you will freeze. The goal is to be the robot that uses their SENSE best.]
- Answer questions, then dismiss students to stand at one end of the room.
- Play Red Light, Green Light for a few minutes.



Step 4 - Co-Construct Meaning

Time: 15 Minutes

Students Act Out Cubelets Robot Constructions.

"We've now reviewed what we remember about Cubelets and robots, and we practiced acting like a robot when we played Red Light, Green Light. Now, we're going to try to act out a Cubelet robot construction. Last class, we built robots with how many blocks?"

- [3]

"Yes! We built Drive Bots with 3 robot blocks! So today, when we are acting them out, we'll be in groups of 3 students. First, I want to see what you can come up with as a group. Here is a robot I built (Hold up a "Cuddle-Bot" - show how it moves towards your hand, and stops when it doesn't see your hand). In your groups, can you plan a way to act out this robot?"

- Students separate into groups of three.
- Students try to act out the "Cuddle-Bot" in their groups.

After several groups have tried to act out the "Cuddle-Bot", pause students and have a few groups share their interpretation of the Cuddle-Bot.

"Now, we're going to pair up our groups - so two groups will work together. One group of three is going to build a Drive Bot and show it to the other group of three. Then that group of three is going to work together to act out the Drive Bot. Then the two groups will switch jobs."

- Students combine into group "pairs" and begin task.
- ***Teachers will likely choose to scaffold this step for the class by pausing between each direction.***

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Notes

- ❏ Notice how students are communicating in their groups
- ❏ Walk around to support students using Cubelets-specific vocabulary
- ❏ Look for students working together and asking for others' ideas.
- ❏ Look for students who can *explain* why their group is acting the way they are - and look for students who cannot explain what's happening.



Differentiation - Intervention & Extension

Time: NA

Intervention

If students have trouble acting out the Cuddle-Bot, keep the class together and you (the teacher) make new Drive Bots that the class has to act out. Consider giving some instructions or helpful hints for the first couple Drive Bots as needed.

Extension

For student groups who accurately and easily acted out the Cuddle-Bot *and the second Drive-Bot made by their group pair*, have their next challenge be to only *look* at the robot construction without turning on the battery. Then they should try to act out the robot construction and check their work afterward by turning on the battery to see if the robot does what they acted out.