About us.

We are Modular Robotics, the makers of Cubelets® robot blocks, the building blocks of better thinkers.

Modular Robotics is headquartered in Boulder, Colorado, USA. We believe toys shape the way children think about the world, so we design little robots to help build better thinkers.

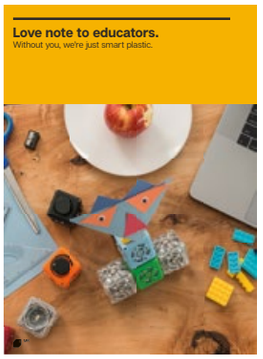
Our goal is to make captivating robot toys that inspire an intuitive understanding of complexity, computational thinking, emergence, design, and a bunch of other vital thinking skills.

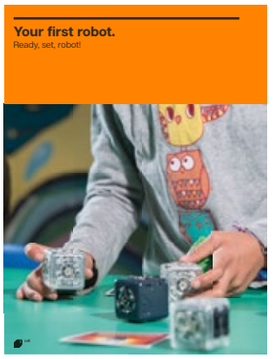
Enjoy making, exploring, and creating with Cubelets robot blocks!

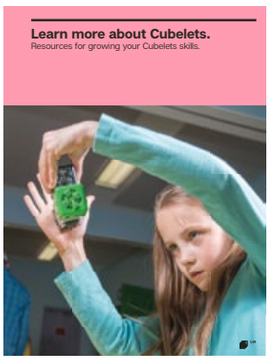
Modular Robotics

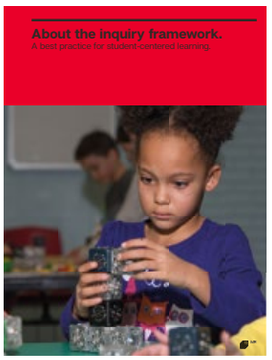
What’s inside.

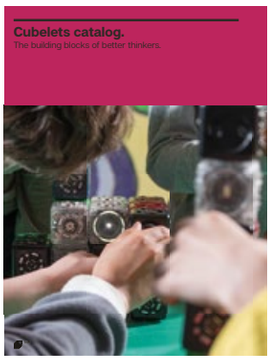
- Educator resource hub & social.
- Love note to educators.
- Your first robot.
- Learn more about Cubelets.
- About the inquiry framework.
- Cubelets catalog.
- Letter to parents.
- Maintenance & support.
- Routines to establish.
- Classroom management.
- Standards.
- Scope & sequence.
- Lesson plans.
- Blackline masters.

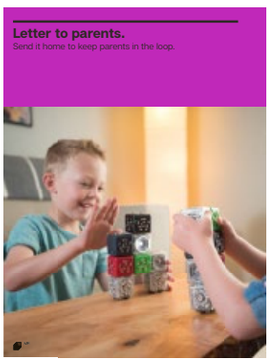


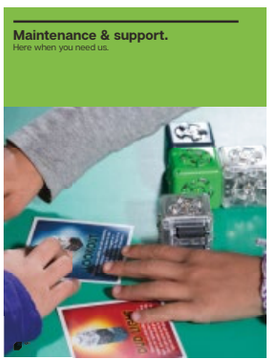


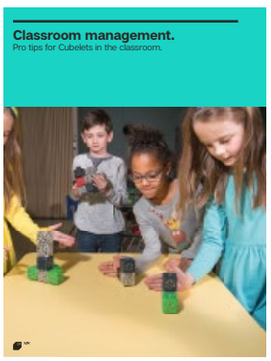


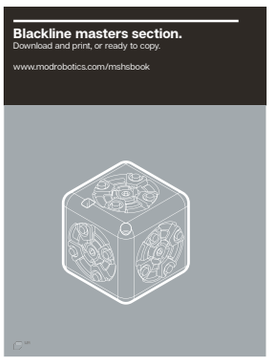












Hello.

Dear Educator,

You are one of the most important people in the lives of your students, and your work is hard. Thank you for everything you do for your students every single day!

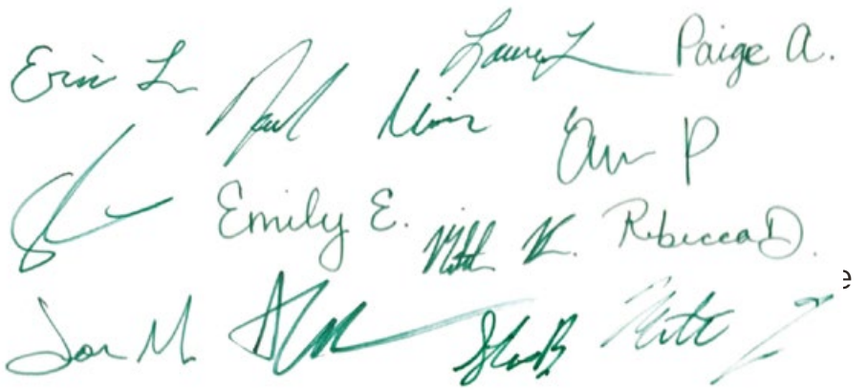
In this bundle, and on our free educator resource hub (found at modrobotics.com/thehub), we have tried to make it easy to introduce Cubelets to your students. However, the best advice we have, echoed by educators around the globe, is just go for it!

Cubelets were designed specifically for kids. Try learning alongside your students so they can see how you learn. Cubelets are the perfect tool for think-alouds because students may be able to help you!

As you look through these getting started lessons and resources, keep in mind that we are always here for you. If you have any questions – even specific to your students, classroom, or school – feel free to email our support team at support@modrobotics.com. They'll be able to connect you to the resources you need and can also refer you to our Education Design Team.

We hope you enjoy these little robot blocks as much as we do!

Sincerely,
The Team at Modular Robotics



Your first robot.

Start with the Distance, Battery, and Drive Cubelets. They represent the three types of Cubelets you need to build a robot construction.

SENSE

THINK

ACT

To build a robot construction, you need:

(1) SENSE Cubelet (Any SENSE Cubelet)	**(1) THINK Cubelet** (Battery always required)	**(1) ACT Cubelet** (Any ACT Cubelet)

Connect the magnetic faces so you have a robot construction that looks like this:

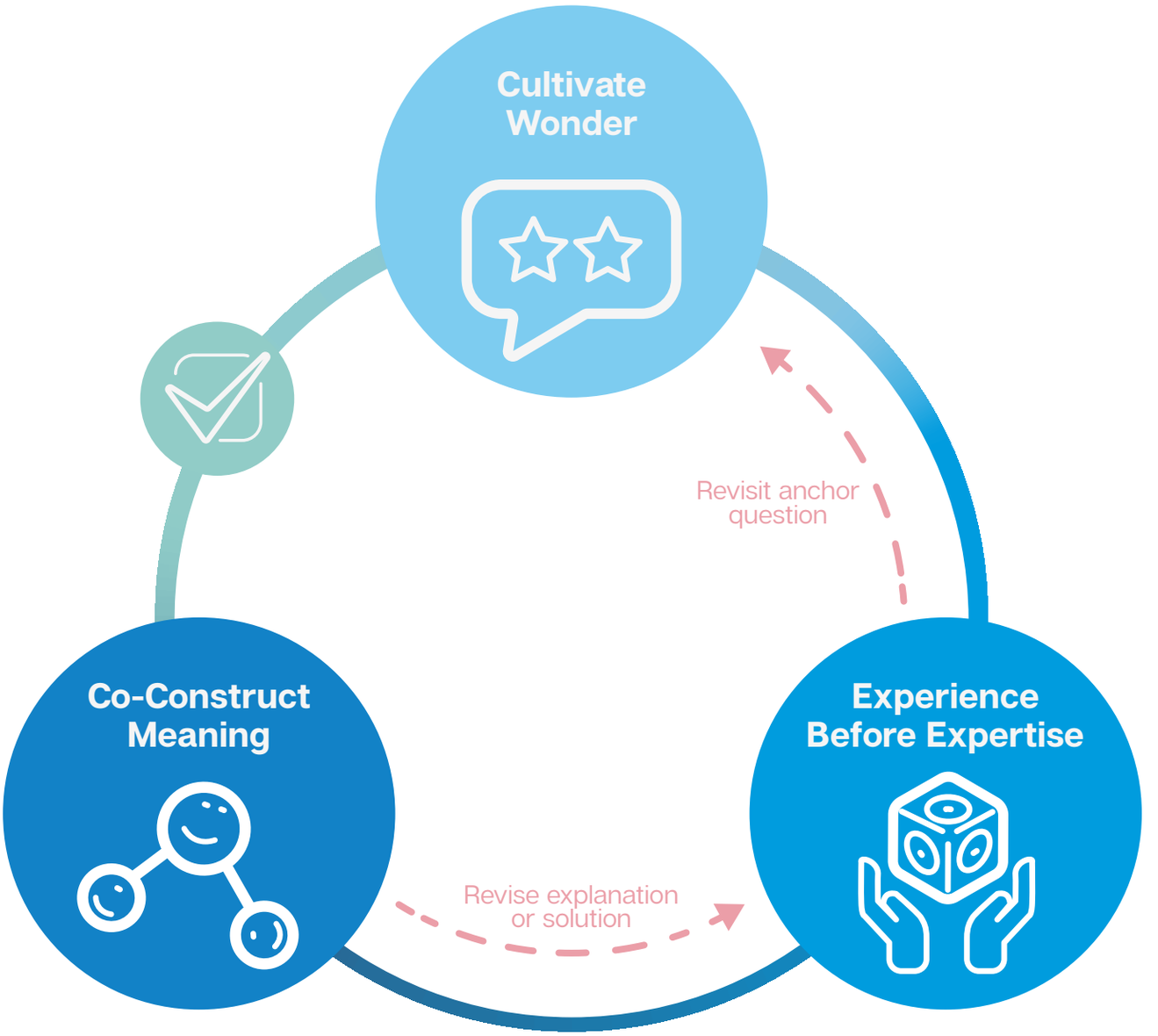
Find the switch on the side of the Battery Cubelet and turn it to the ON position.

Congratulations! You've completed your first robot construction!

What happens when you place your hand in front of the Distance SENSE? Can you figure out what makes the robot construction move faster and slower?

Cubelets Inquiry Framework.

As you dig into the Cubelets Lesson Plans, you will notice they all use a common format. This format represents our version of an Inquiry Framework. In each lesson, after you find the Overview and Classroom Prep sections, you'll notice the following sections:



01

Drive bots.

01 02 03

Lesson overview.

Students make Drive bots and practice revising their robots.

Students will practice turning the Battery on and off and talk about what humans and robots have in common and what makes humans and robots different. Using only the Drive ACT Cubelet, the Distance SENSE Cubelet, and the Battery, students will design three different robots. Students will investigate how Cubelets robots work by using their hands to control the SENSE block.

Objectives	Students design their first robot construction and practice vocabulary to describe their designs.
Assessment	Students design three simple robots: one that moves **toward** their hand, one that moves **away** from their hand, and one that spins **around** in circles.

Supplies needed.

Cubelets (6 groups of)

- 1 Distance SENSE
- 1 Drive ACT
- 1 Battery Cubelet

Assorted

Boy + Bot by Amy Dyckman

Vocabulary.

- Sense
- Think
- Act
- Battery
- Toward
- Away
- Around

Pacing.

- 5 minutes: Introduce learning target and success criteria
- 20 minutes: Student groups investigate Drive bots
- 5 minutes: Wrap up and reflect

Look for the little gears on the side of the wheels to identify Drive direction.

Away Toward Around

01 Drive bots.

Cultivate wonder.

Read *Boy + Bot* by Ame Dyckman

"Today, we will be reading a story about a boy and a robot. As we read, think about what is the same between the boy and the robot and what makes them different."

Read aloud *Boy + Bot* by Amy Dyckman or watch the Youtube Read Aloud.

Choose questions appropriate to your students:

- *"What did you notice in the story?"*
- *"What did the boy and the robot have in common?"*
- *"What makes you think that?"*
- *"What was different between the boy and the robot?"*
- *"What makes you think that?"*

"Robots need power, but humans do not. What do humans need to have energy?"

Pass around a few Battery Cubelets so students can practice turning them on and off and make general observations about Cubelets.

Experience before expertise.

Design Drive bots.

First, it's your job to figure out how to build a robot that moves at all. Then, you'll get to build robots that move in different ways.

- Students build Drive bots.

Notes:

- Look for students who are struggling to remember to wave their hand at the SENSE Cubelet.
- Look for groups who may need prompting to remember to rotate the Drive Cubelet in different directions.
- Look for groups who may need some prompting to remember to try rotating the Distance Cubelet in different directions.
- Ask students to explain how their robot works and why they made the revisions they made.
- Students may need help remembering to be gentle with Cubelets.

Look for the little "eyes" on Distance SENSE Cubelets. The "eyes" must be able to see a nearby object to make your robot move.

01 Drive bots.

Co-construct meaning.

Students invent Drive bots that move in different ways.

*"Now it's time to figure out how to create robots that move in different ways. By the end of class today, I want you to have figured out how to build **three** different robots:*

- *A robot that moves toward your hand*
- *A robot that moves away from your hand*
- *A robot that spins around in circles*

"I'll ask your group to share at least one of these robots at the end of class, so it's important to make sure every member of your group knows how to build each one!"

Look for the little gears on the side of the Drive wheels.

The gears can help you identify which way your robot will move.

Check for understanding.

Students explain how Drive bots work.

"Could someone please share one robot your group built today and tell us how it works?"

- Have several students share out.

Notes

- Be mindful of helping students practice using "Distance Cubelet" and "Drive Cubelet" to describe their robot constructions.

01 Drive bots.

Differentiation – Intervention & extension.

Intervention

For students who are struggling to understand the Distance SENSE Cubelet, try assembling a robot for them in a horizontal line (like a snake), with the Distance Cubelet at the front with its eyes facing forward like an animal. Then ask the student to hold their hand in front of its "face." From there, ask them to **only** rotate the Drive ACT Cubelet until they get the hang of it. *Then* they might try to rotate the SENSE Cubelet or move it.

Extension

Challenge students to come up with as many robots as they can of each type:

- Fraidy bot (away)
- Cuddle bot (toward)
- Dizzy bot (around)

What can they do with the robot if the Drive Cubelet is wheels-up? (conveyor belt robot)

END OF LESSON #1

How did this lesson work for you? Let us know!
Check out our newest resources at [redacted]