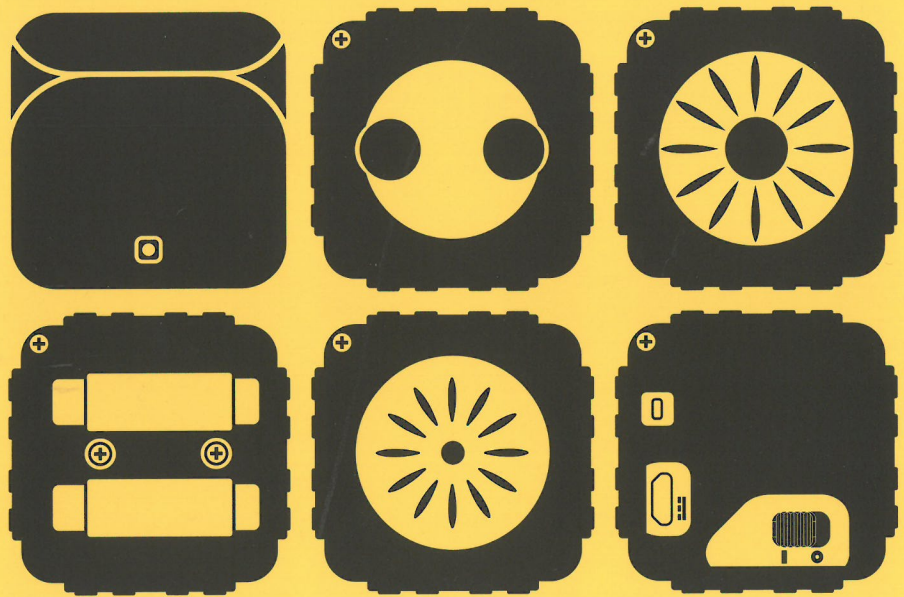


Discovery Guide



Hello.

**We are Modular Robotics,
the makers of Cubelets®
robot blocks that build
better thinkers!**

More about us

Modular Robotics is a small but growing team headquartered in Boulder, Colorado. Toys shape the way that 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!

**Cubelets advance
with you.**

**The more you challenge
yourself, the more Cubelets®
will help you discover.**

Ages 4+

Robotics Basics
Cause and Effect
Gross Motor Skills
Speaking and Questioning
Sorting
Sequencing

Ages 7+

Computational Thinking
Critical Thinking
Design and Engineering Basics
Network Basics
Collaboration Skills
Pattern Recognition

Ages 10+

Computer Science Basics
Coding Smarter
Parallel Programming
Systems Thinking
Complexity Basics
Design Thinking
Networks
Abstraction

0.

Hey, parents!

Hey, parents!

This page is for you. The best forms of play are built on social interaction. Open social play is a great way to spend time together. But sometimes, playing with robot blocks isn't second nature, or their potential isn't immediately obvious. We built a Cubelets Parents' Play Guide to help you. It's free and available when you want to play!

Get your free copy at:
www.modrobotics.com/playguide

You can enhance your play and get your Cubelets to do more when you download the Cubelets app. The app isn't required to enjoy Cubelets. But, we highly recommend it because it enables new ways to build and play with your robot constructions. It's available for free on iOS, Android, and FireOS.

Download the app at:
www.modrobotics.com/cubelets/apps/

1.

What's included

Your Cubelets Discovery Set includes:



**(x1)
Battery
Cubelet**

Provide the energy needed to power robot constructions.



**(x1)
Brightness
Cubelet**

Enable a construction to detect and respond to light.



**(x1)
Drive
Cubelet**

Build robot constructions that navigate their world.



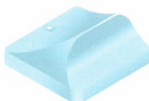
**(x1)
Distance
Cubelet**

Enable a construction to detect and respond to nearby objects.



**(x1)
Flashlight
Cubelet**

Create constructions that shine a dimmable LED light.



**(x1)
Bluetooth®
Hat***

Pair robot constructions with free companion apps.



**(x2)
Brick
Adapter**

Add style and expand building capabilities with LEGO® or other brick building toys.



**(x1)
Micro-USB
Cable**



**(x1)
Guide**

A helpful printed Discovery Guide and downloadable Parents' Play Guide.

*The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc.

2.

Robot blocks

Robots

Robots are machines that can sense, think, and act.

Blocks

Blocks are basic building units that connect to make something bigger; a construction.

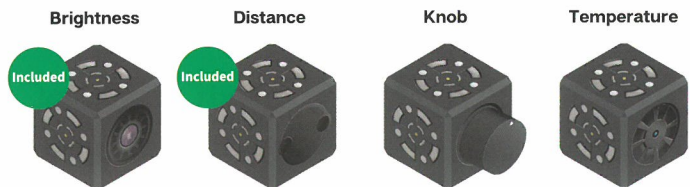
Robot blocks

Robot blocks are reconfigurable robotic modules that connect to make a construction that can sense, think, and act.

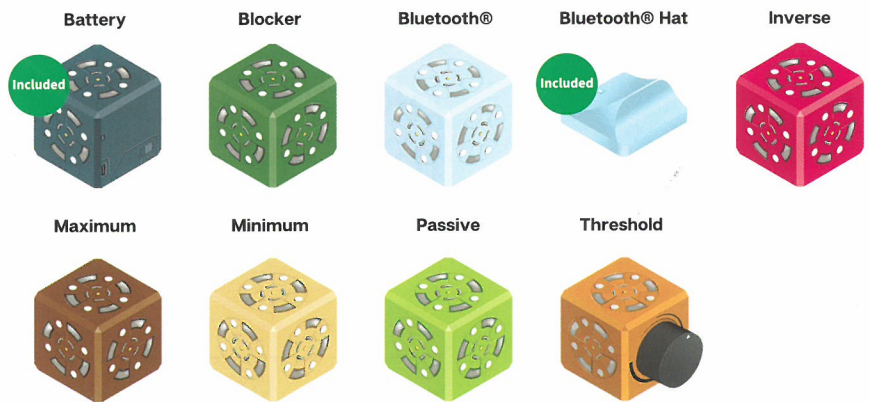
3.

There are three basic categories of Cubelets®

SENSE Cubelets



THINK Cubelets



ACT Cubelets



4.

Faces & Personalities

Cubelet faces

Cubelets have two face types.

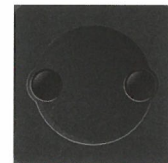
Magnetic faces

Connect Cubelets together.



Special faces

Contain unique hardware that gives a Cubelet robot block its function.



Tip!

You can connect Cubelets in any orientation.

Cubelet Personality

A Cubelet's "Personality" guides how it behaves. Personalities are programs (or software) that control the hardware. Hardware is all the parts and pieces that make up a Cubelet robot block.

Tip!

Use the Cubelets app to swap your block personalities.



Cubelets follow local rules that determine how they interact.

5.

What's needed to make a robot construction

Robot constructions need three or more blocks.

(1) **SENSE** Cubelet
(Any SENSE Cubelet)

(1) **THINK** Cubelet
(Battery always required)

(1) **ACT** Cubelet
(Any ACT Cubelet)



+



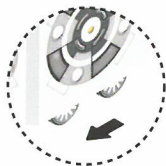
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A robot construction's behavior is emergent.

What your robot construction does is a result of the blocks you connect and how you arrange them.

For example:
Movement and directionality



Tip!

Look for the Drive gears to determine which direction it will move.

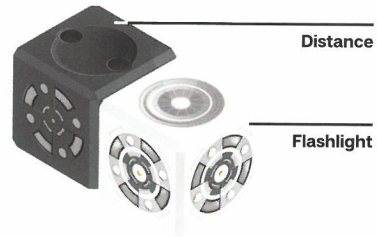


6.

Make your first robot construction!

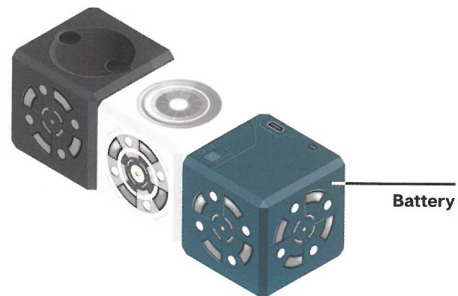
1

Try connecting a Distance SENSE and a Flashlight ACT.



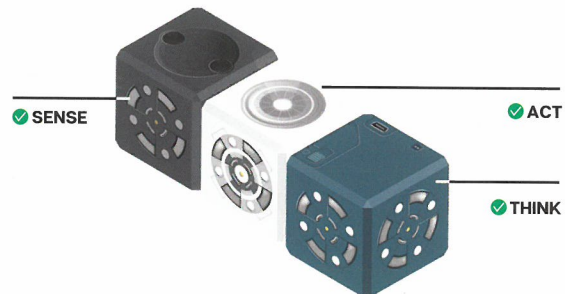
2

Now connect a Battery THINK.



3

Congratulations!
You've built your first robot construction.



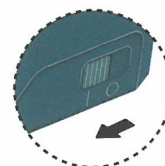
4

Power on your Battery Cubelet using the little switch.



Switch

Tip!
When your Battery has drained, recharge it with the included cable.



ON
OFF

5

What happens as you put your hand close to or far from the Distance SENSE?



6

Your robot construction should shine bright when things get near. But if you're too close, things might get weird!



Too close



7.

Try a different...

ACT Cubelet

A—Try connecting a Distance SENSE, a Drive ACT, and a Battery THINK.

What happens when your hand nears the Distance SENSE?



B—What happens when you flip the Drive Cubelet in the other direction?



SENSE Cubelet

A—Try connecting a Brightness SENSE, a Drive ACT, and a Battery THINK.

B—Can you figure out what triggers the Brightness SENSE?



Tip!

Be careful, this robot likes to move!

Tip!

Try turning the lights on and off to see how your robot responds.

8.

Bluetooth® & App

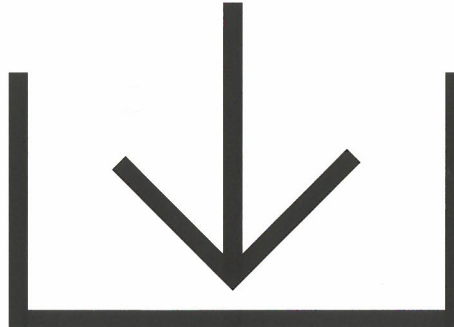
Do more with Bluetooth®

The Bluetooth® Hat connects robot constructions to apps that enable remote control, new Cubelets behaviors, and coding in Blockly or C.



Download the Cubelets app

Want a remote control for your robot construction? What about making the Drive wheels spin the other way? Enhance your Cubelets play when you download the Cubelets app on iOS, Android, or FireOS.



**Download
the Cubelets
app at:**

www.modrobotics.com/cubelets/apps/

9.

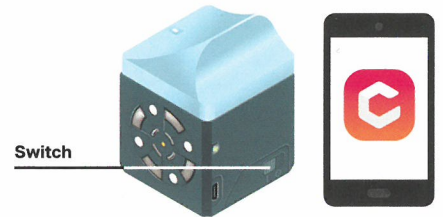
Get connected

Pairing & Remote control

- 01 To pair with the Cubelets app, connect the Battery Cubelet and Bluetooth® Hat.



- 02 Power on the Battery Cubelet and open the Cubelets app on your device.



- 03 Hold the device near the robot construction to pair.



- 04 If you're having trouble pairing, please double-check that your device has Bluetooth® enabled. If the problem persists, contact support@modrobotics.com for help.

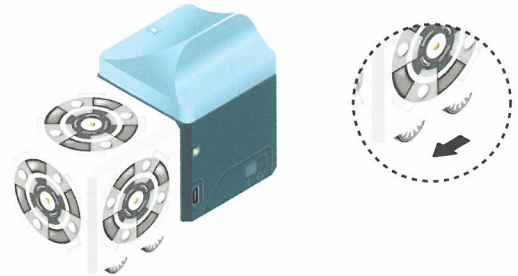


10.

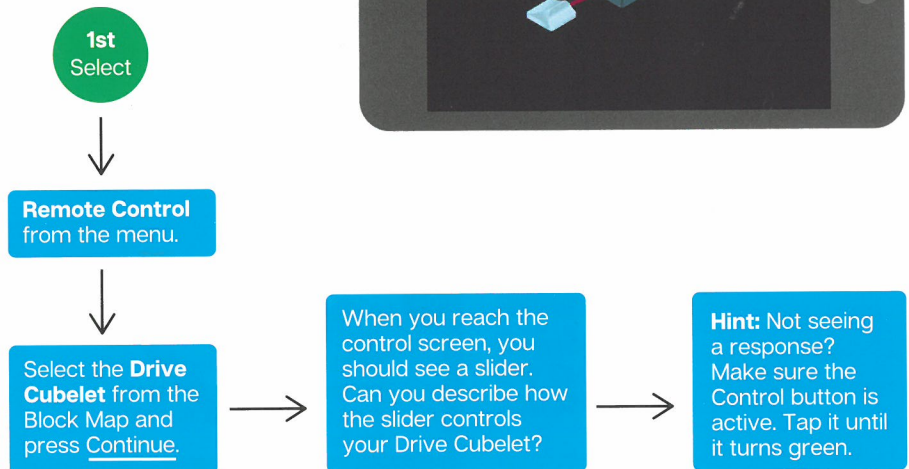
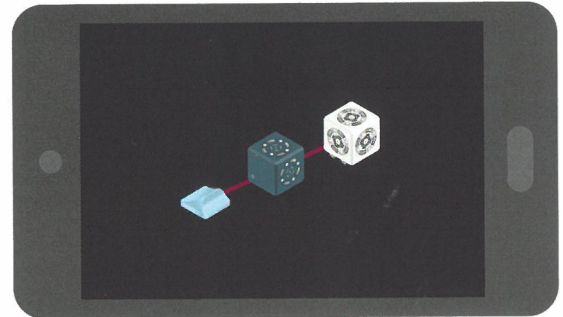
More with remote control

Remote control

Build a remote control robot construction by connecting the Drive Cubelet to the Battery and Bluetooth® Hat.



If you've paired successfully you should see a screen with a small representation of your robot called the Block Map.

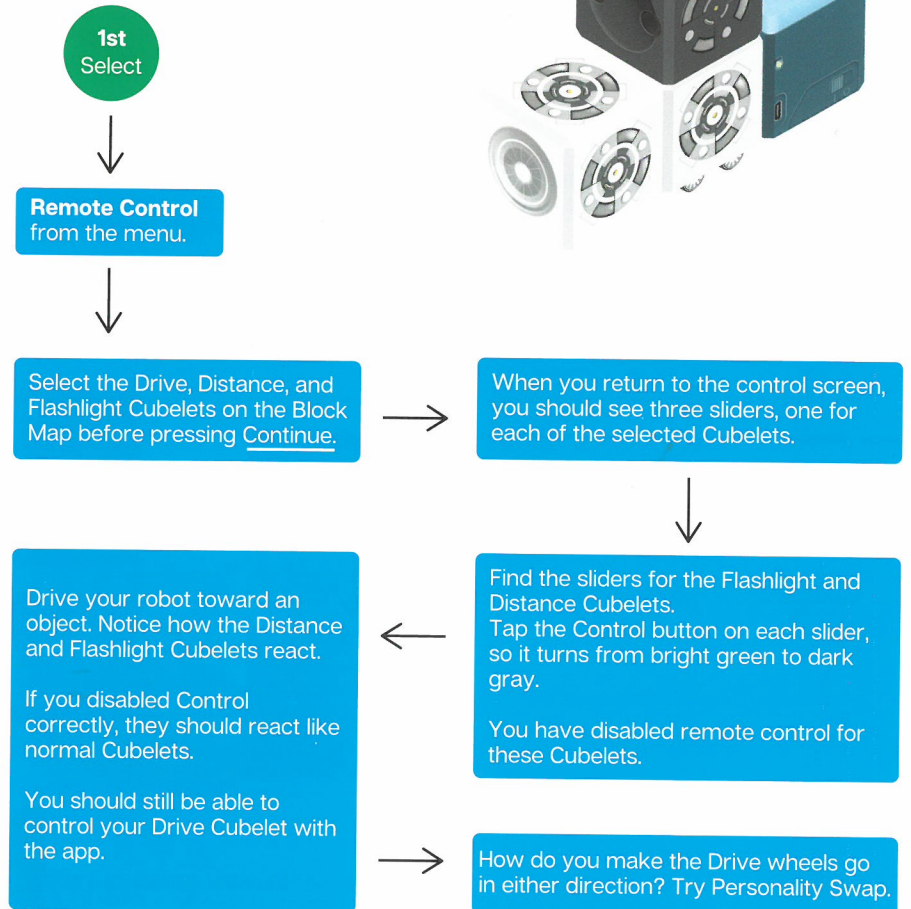


Block map

Bring the robot construction to a stop. Tap the Block Map icon at the top of the screen to exit remote control.



Add the Flashlight and Distance Cubelets to the robot construction.

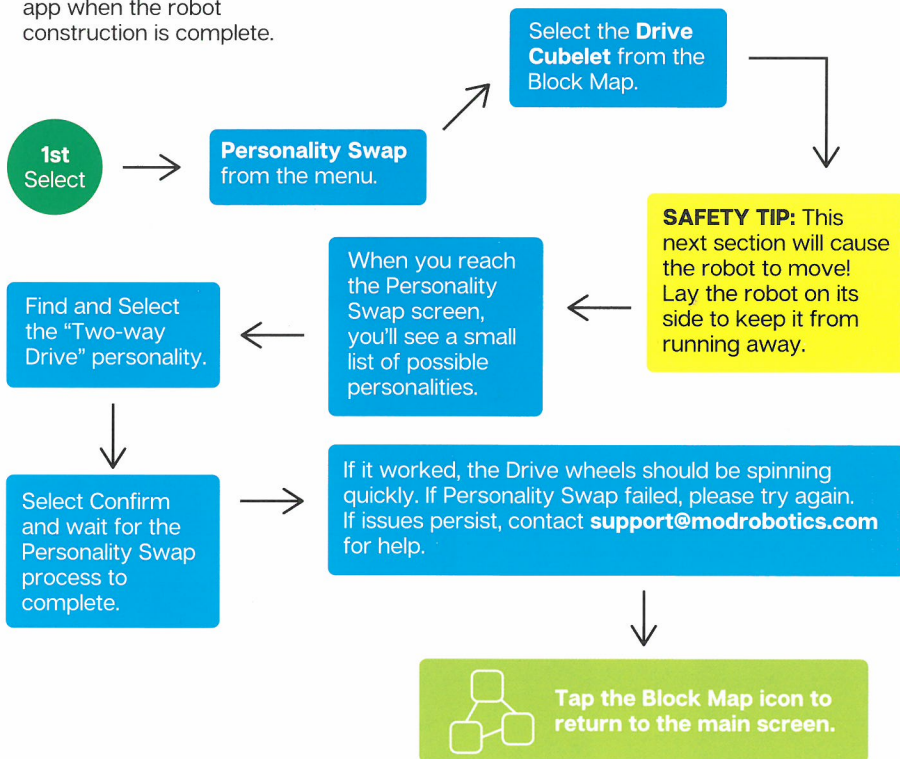
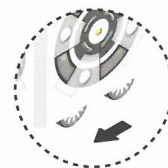


Personality Swap

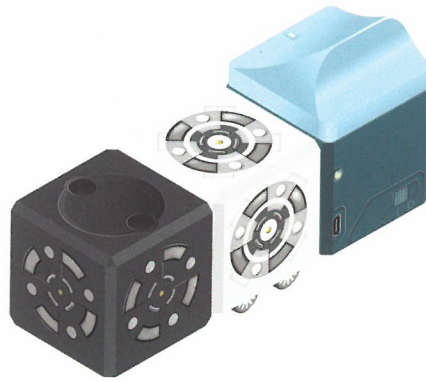
Personalities are software programs that control how Cubelets behave. If you swap one Personality for another, your Cubelets may behave differently.

If you're following along with these instructions, bring your robot to a stop and return to the Block Map.

Build a robot construction like the one pictured. Pair with the app when the robot construction is complete.



Add a Distance Cubelet to the robot construction.

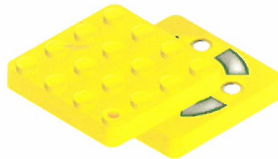


Can you describe how your robot behaves now? What makes it go forward? What makes it go backward? Where should you place your hand if you want to stop your robot without touching it?

If you want to reset the Drive Cubelet to its normal, default behavior select the Default Personality from the list of options. Or tap the "Reset to Default" button on the Personality Swap screen.

Brick adapters

Cubelets Brick Adapters connect Cubelets to brick-based construction toys like LEGO®. Each Brick Adapter has a magnetic Cubelets face and a stud or socket face that allows you to connect other toys.



LEGO® is a trademark of the LEGO Group, which does not sponsor, authorize, or endorse this product.