



Introducing Cubelets

What do they do?

Cubelets 6 Box



Cubelets Six Box

- ▶ Battery Cubelet
- ▶ Drive Cubelet
- ▶ Distance Cubelet
- ▶ Brightness Cubelet
- ▶ Flashlight cubelet
- ▶ Passive cubelet
- ▶ Two brick adapters

Battery Cubelet



Drive Cubelet



Distance Cubelet



Brightness Cubelet



brick adapters



Flashlight cubelet



Passive cubelet



Connect with Magnets

Most sides of each cube are the same.

Small magnets attract to the magnets on other cubes. That is how they connect together.

Magnets make it easy to connect cubes and take them apart again.



Battery Cubelet

It provides the energy to make your robots spin, drive and squawk.

It has a switch to turn it on and off.

The power travels to all the cubes that are attached to it.

Has batteries inside that need to be recharged. Plug in the cable.

Has a green light when turned on.



Think

Drive Cubelet

Has a motor and wheels for driving around.

It only moves in one direction.

Speed is controlled with data input from other cubes.

0 is slower and higher numbers are faster.



Action

Flashlight Cubelet

Sends out a light like a flashlight.

Has one light bulb side.

Needs data from other cubes.

Goes off with a value of 0.

Light becomes brighter with higher numbers.



Action

Distance Cubelet

Detects how close or far it is from an object.

Has two sensors that are directional.

Closer objects generate a higher number.

Further away objects generate a lower number.

This number is data that is sent to other connected cubelets.



Sense

Brightness Cubelet

Detects the amount of light.

Has one light sensor.

Darker areas generate a low number.

Brighter areas generate a high number.

This number is data that can be sent to other connected cubelets.



Sense

Passive Cubelet

Sends power and data to other cubes.

Doesn't do anything special.

Can be used to build robots that are taller or wider or keep them from tipping over.



Think

Brick Adapters

Use to connect Lego Bricks to your robot.

Metal side has magnets to attach to one side of a cubelet.

Put Legos on one cubelet or span across two.



Connect

Cubelet Robots

Each Cubelet has one function.

But when put together, they can send and receive information and become a robot!

How the robot behaves depends on how you interact with it.

Sometimes behaviors emerge that you didn't plan on.

They act like people or animals.





Action Cubes

Types of Cubelets

Action Cubes Do Things

Move, Send out light and sounds

Sense Cubes Observe Things

Detect Light, Distance, Movement

Think Cubes are Smart.

Math or Logic or Sending data



Sense Cubes



Think Cubes

Time to build robots.



20 Cube Box



8 More Cubes

- ▶ Rotate Cube
- ▶ Bar Graph Cube
- ▶ Knob Cube
- ▶ Temperature Cube
- ▶ Minimum Cube
- ▶ Maximum Cube
- ▶ Inverse Cube
- ▶ Blocker Cube

Rotate Cube



Bar Graph Cube



Knob Cube



Temperature Cube



Minimum Cube



Maximum Cube



Inverse Cube



Blocker Cube



Rotate Cubelet

Make robot move and spin.

Turning mechanism on one face of block.

Receives data from other blocks.

Speed is controlled with data input from other cubes.

0 is slower and higher numbers are faster.



Think

Bar Graph Cubelet

Shows data in a bar graph.

Receives data from other blocks.

Lights in bar are controlled with data input from other cubes.

0 is no lights and higher numbers are more lights.



Think

Knob Cubelet

Turn knob to set a data value.

Sends data to other blocks.

As knob is turned, data value goes up.

All the way to left - counter-clockwise is 0.

All the way to right - clockwise is highest value.



Counter Clockwise



Clockwise



Sense

Temperature Cubelet

Senses heat and cold.

Sends data to other blocks.

Has a thermometer to detect temperature.

0 is freezing and hotter is higher numbers.

Caution! Don't put water or liquids directly on cubes - ice cubes or boiling water.



Sense

Minimum Cubelet

Sends out the lowest data value.

Sends data to other blocks.

Accepts any data value from other blocks.

Handy for creating on off switch or use with distance cube.



0 or Lowest

Think

Maximum Cubelet

Sends out the highest data value.

Sends data to other blocks.

Accepts any data value from other blocks.

Handy for creating a robot that only takes action when it receives a high data value.



Highest number

Think

Inverse Cubelet

Flips the data value it receives to the opposite.

Sends data to other blocks.

Accepts any data value from other blocks.

If a low number is received, it outputs a high number.

If a high number is received, it outputs a low number.



Think

Blocker Cubelet

Keeps cubes from receiving data.

Accepts any data value from other blocks.

Blocks the sending of data to other cubes.

Connect independent modules that you don't want to communicate with each other.



NO data

Think

20 Cube Box





Bluetooth Cubelet

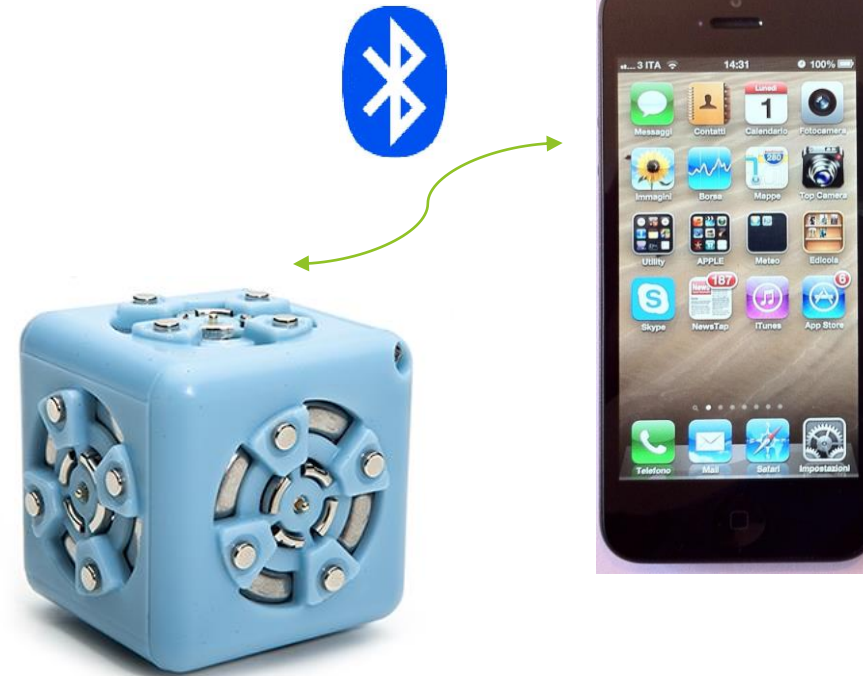
Communicate wirelessly with your robot.

Bluetooth radio to communicate with phone, tablet, or PC.

Compatible with iOS and Android devices.

Apps available for download to control robot from a phone or tablet or PC.

(For Advanced Users)



Think