Cubelets Six quickstart guide

ages 4+ with lessons ideas from K-12

Build robots that scoot, shine and react to the world around them in amazing ways.

Kit Includes:

Making with Magnets.

You don’t need to know how to code or wire to construct robots with Cubelets. Snap the robot blocks together and the magnetic faces do the rest. Every unique arrangement is a new robot with novel behaviors emerging from the construction. Invention made easy!

DISCOVERY

Centre Station: have students explore what the robots can do by turning it on and connecting the blocks together

Connections will be made to Lego - in fact it is compatible with Lego in order to "create" extensions into the robots appearance

Providing verbal challenges - such as who can build: tallest robot, longest robot, make it do something cool? during your time at centre

Can students identify how to turn the device on and which block does whatt? Cubelets use magnets, so discovery learning is very possible.

THINGS TO KNOW WHEN STARTING:

- Cubelets come in three types: Sense blocks (black), Action blocks (clear), and Think blocks (different colours).
- Most Cubelets have five connection faces and one special face depending on what it does.
- Every Cubelet has a small LED in a corner that lights up if it is connected correctly to the power block - they are talking to each other when those lights are blinking.
- How you arrange the cubes WILL make a difference/do differently.
- PLAY will engage some students to explore more, so feel free to let them - these are very durable tools.

deeper info at: https://www.modrobotics.com/cubelets/cubelets-getting-started/

GUIDED

Kindergarten: https://www.modrobotics.com/education/lesson-plans/pre-k/

Have learners focus on:
teamwork (guided release of responsibility)
what a robot is; what a robot can do
how to design a robot and have it do a task

Primary: https://www.modrobotics.com/education/lesson-plans/elementary-school/

Have learners focus on:
robots acting and reacting on their own
robots & sensing
robots to explore behaviours; cause & effect

Intermediate/Middle School: https://www.modrobotics.com/education/lesson-plans/middle-school/

Have learners focus on:
robots & sensing & behaviours
robots to explore engineering & design thinking
how robots can assist data & problem solving

Secondary: https://www.modrobotics.com/education/lesson-plans/high-school/

Have learners focus on:
robots & sensing & problem solving
using data in design thinking
using constraints in planning and building

Charging Reminder
Please remember to recharge the power block at the end of a session - the battery is expected to last up to 6 hours, but this depends on the amount of use.
Keep black power block switch 'off' when not in use.

CHALLENGES

Make a robot that will "go forever" by using at least two senses and two actions.

Make a flashlight that "knows" to come on in the dark.

Construct an "environment" (or arrange other objects around a robot) so that it will "go forever" and "never quit".

Make driving robots that represent different creature behaviours.

Make driving robots that help represent different emotions.

Can you make a robot that will slow down and stop before hitting another object?

What other "blocks" do you need before you can create a specialized robot?

Make a robot that is "aggressive" and drives faster as it gets close to something.

Make a robot that is "afraid" and drives away from things.

Make a robot that is "confused" and drives in circles.

Make a robot that lets you "use the force" to control it with your hand.

CODING Opportunities:
https://www.modrobotics.com/cubelets/apps/cubelets-blockly/

*need a bluetooth cube to send code to robot