

Introduction to the Cubelets Kit

Note: The print resources in this binder are also available as electronic files on the kit's flash-drive. Due to the dynamic nature of the product, please explore online for further/updated information using the links & search suggestions provided.

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1. What is it?

Cubelets are a modular robotics teaching tool and toy from the aptly named Modular Robotics. (<http://robottestkitchen.com/2014/09/22/review-cubelets/>)

2. How does it work?

Color coded, cube shaped pieces attach to one another with magnets, enabling the user to quickly and easily build a variety of robots.

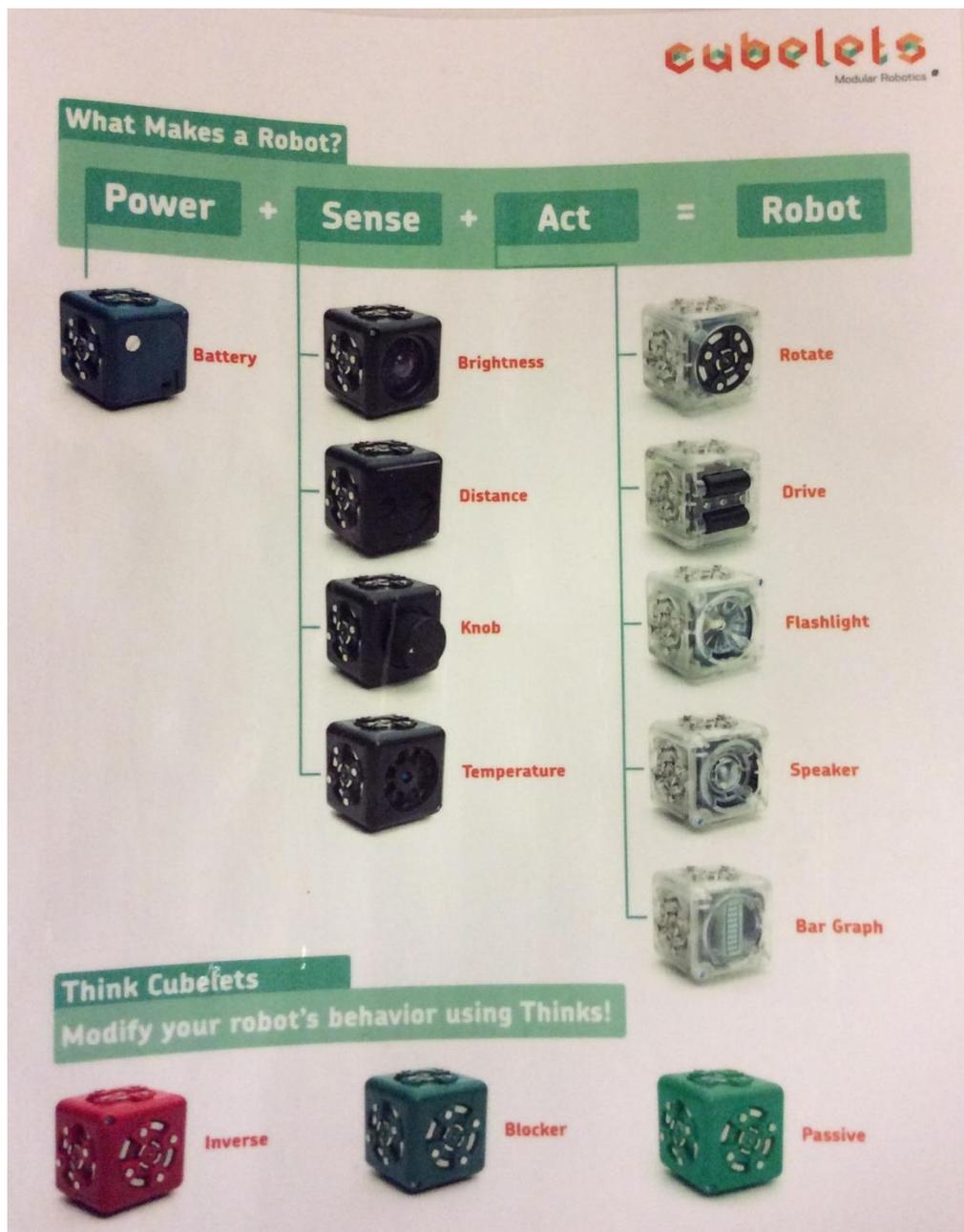
This set of Cubelets is a great tool for teaching the basic concepts of robotics to individuals or small groups. Specifically, this tool helps explain that a robot is a device that senses something and then responds to it in a pre-programmed way. It also demonstrates the specificity required in robotics: placement and orientation of the cubes matters, and the creation will act differently based on the arrangement of the pieces.

(<http://robottestkitchen.com/2014/09/22/review-cubelets/>)

There are also some Lego adaptors so the look and size of the robots can be changed with Lego.

3. Are there instructions?

Each set of six Cubelets comes with some cards (which we laminated for the kits) with instructions to build simple robots. There are also six laminated copies of the "What Makes a Robot" page in the kit.



4. I don't have time for complex – what is the simplest project?

The simplest approach is to just put out the cubelet sets, group the kids to work in teams with them, and let the kid's explore!

The "10 cool things to do with Cubelets" and the "Cubelets Challenges" are also open-ended but give some focus to the experiences.

These and additional Lesson plans and a blog are available on the Cubelets website: <http://www.modrobotics.com/education/>

5. Any safety concerns?

Like any electronics, you don't want to put them in water! Please don't combine them with other electrical devices or add on conductive materials of your own. Also, while they are durable they can move quickly. We are providing "corrals" made of pool noodles & rope) to contain the Cubelets so that they don't run off the edge of tables or other surfaces. We recommend using them on the floor, and cleaning the floor beforehand so the wheels don't pick up dirt/lint.

6. I'm ready for some more– what's next?

The "Getting Started" guide <http://www.modrobotics.com/cubelets/cubelets-getting-started/> goes from simple to complex in its topics. For example, I learned there that Cubelets can be used to demonstrate mathematical processes like averaging by using the bar graph cube. (Note – there is only one bar graph cube in the kit so this would be a demonstration or turn-taking activity)

Adding Lego into the mix is an easy way to expand the experimenting time with Cubelets and give students a chance to think about and see what effects adding shapes to their robot has.

Lesson plans (from simple to complex) and a blog are available on the Cubelets website: <http://www.modrobotics.com/education/> A word of caution: the lesson plans are repetitive so if you plan to do more than one please read through them first so you can eliminate the repeats and keep your students engaged. I would use the plans as a guide and add in your own creative teaching ideas!

You also might enjoy reading through the forum topics, where teachers respond with their experiences and Modrobotics supplies information: <https://www.modrobotics.com/forums/forum/education-forum/> For example, I found out it is okay to use two battery modules in one robot by searching battery in the forum.

Here is a sample entry by a teacher:

Cubelet Challenges: Part 1: Secret Senses

[Home](#) › [Forums](#) › [Education Forum](#) › Cubelet Challenges: Part 1: Secret Senses

This topic contains 2 replies, has 3 voices, and was last updated by  [Christie Veitch 1 year, 4 months ago](#).

Viewing 3 posts - 1 through 3 (of 3 total)

- AuthorPosts
- February 27, 2014 at 5:52 pm [#1640](#)



[Shelia Phillips](#)

Participant

When I first introduce a new cubelet, or two new ones in this case, I always allow students to “play” with them for part of our class time. As they investigated the combination of Battery, Brightness, and Flashlight, I had student teams figure out how to have ALL flashlight-bots go OUT when I switched off our classroom lights. The students were in awe! However, even better was having them learn how to have ALL of the flashlight-bots remain ON when I turned out our classroom lights. They CHEERED with delight ! We then switched the Brightness cubelet for the Motion-Activated sense Cubelet and began discussing motion sensors that they were familiar with,... like car sensors that beep when people get too close, or light sensors that come on around homes when uninvited guests approach. So, when we began working with the scenario of protecting their journals or diaries from culprits who wished to read or swipe them, the students had a clear understanding of what was to happen with their sensor devices. After each team was given time to prepare their scenarios, they came to the front of the room for a performance. Students were engaged and intrigued!

7. I've heard you can program Cubelets – true?

Yes, but no. There is a “Bluetooth” cube available for purchase, but not included in our STEM2U kit. It requires an IOS device to communicate with the cube. Would you use it? Let us know!

8. I did something really cool with this and want to share!

Wonderful! Please add your document/video/pictures whatever you want to share onto the kit's flash-drive inside the “Rio Rancho Educator Sharing” folder. Please add a subfolder if you have several files. Please include your school name, your name, and the grade level you teach in the items you share. Thank you!