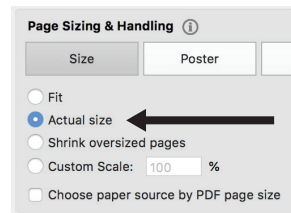
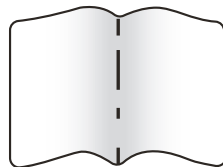


Cubelets® Print and Fold Activity Cards are an out-of-the-box classroom tool for teachers. These cards can be used by educators of any Cubelets skill level. The cards are designed to be set out in small groups to guide learning in a student-driven learning center.

- 1 Print this file. Make sure to print at "Actual size."



- 2 Fold each card along the dotted line in the middle.



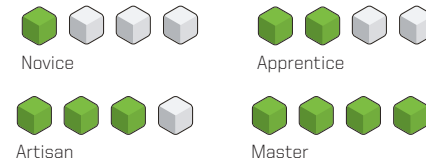
- 3 Tape or laminate the folded card together.



Cubelets Activity Cards are designed to support learning stations for a small group of 2-3 builders, to work on challenges and activities. However, you may choose to experiment with these cards and utilize them in the manner that best suits your learning environment.

Some activities are more difficult than others.

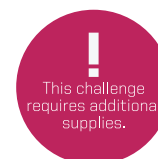
## Difficulty



Select cards are components of two-part activities. Use both cards.



Some challenges require additional supporting materials.



# CAN YOU BUILD?



! This challenge requires additional supplies.

## SAFETY BOT

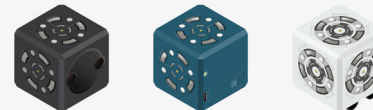
A robot that stops when it gets close to the edge of a table.

### Setup

- DO NOT try to catch your robot!
- Works best with a light colored table.
- Place a pillow below the edge, or build a soft place for your robot to land if it doesn't stop.

### Hints

- Drive Cubelets only move in one direction.
- What direction is your SENSE facing?
- If your robot is moving too fast to stop, add weight at the back, or think about how you can slow it down.



Remember, your robot needs a SENSE, THINK, AND ACT Cubelet!

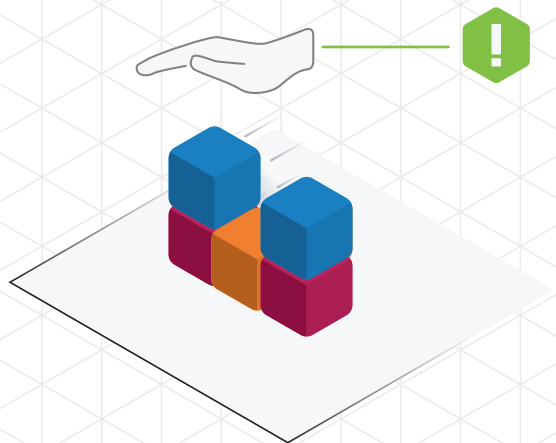
### Difficulty



Artisan

Fold & Tape

# CAN YOU BUILD?



## STEERING BOT

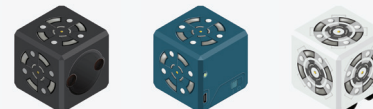
A robot you can steer by hovering your hands.

### Setup

- Find a clean, smooth surface for your robot to drive on.
- Build and test different robots until you've made a robot you can steer by hovering your hands.

### Hints

- You might need to use two SENSES.
- You might need two Drive ACTS.
- Or you might try using a Rotate.
- Or you might try using a Blocker!



Remember, your robot needs a SENSE, THINK, AND ACT Cubelet!

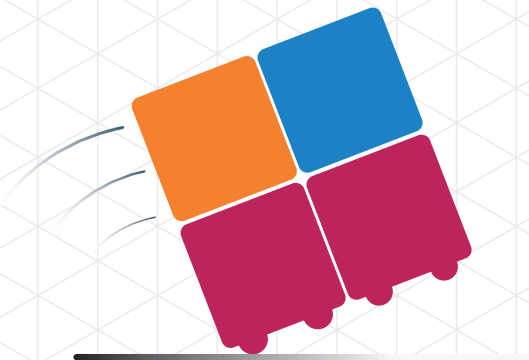
### Difficulty



Artisan

Fold & Tape

# CAN YOU BUILD?



## BUCKING BRONCO

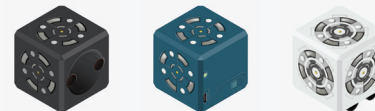
A robot that rocks back and forth  
like a bucking bronco.

### Setup

- Find a clean, smooth surface to build and test your Bucking Bronco design.
- Build and test different robots until you've made a robot that rocks back and forth without falling over.

### Hints

- Drive Cubelets only move in one direction.
- Most solutions need TWO Drive Cubelets.
- Experiment with different SENSE Cubelets and levels of input.



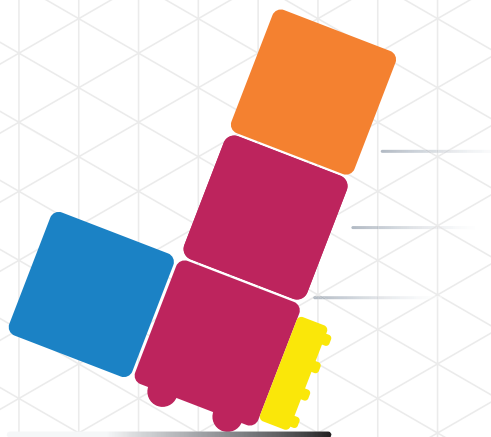
Remember, your robot needs a  
SENSE, THINK, AND ACT Cubelet!

### Difficulty



Artisan

# CAN YOU BUILD?



## WHEELIE BOT

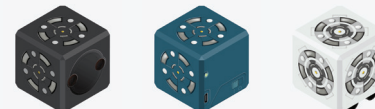
A robot that does a wheelie!

### Setup

- Find a clean, smooth surface for your robot to drive on.
- Build and test different robots until you've made a robot that can move with one wheel in the air!

### Hints

- You might need to use more than three blocks.
- Think about how you might balance your robot.
- You might want to use a Brick Adapter to help it tilt.



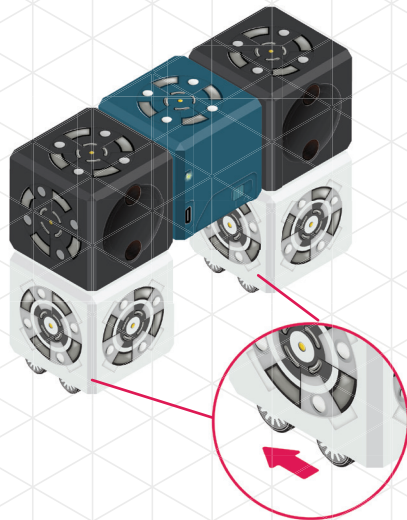
Remember, your robot needs a  
SENSE, THINK, AND ACT Cubelet!

### Difficulty



Artisan

# CAN YOU PREDICT...



## WHAT WILL IT DO?

**WAIT! DO NOT BUILD THIS ROBOT!**  
Turn card over for more instructions.

### Setup

- **WITHOUT BUILDING THE ROBOT**, find evidence that hints at what you think the robot will do.
- You might build a few smaller robots—or one different robot—to help refine your hypothesis.
- After you've recorded your hypothesis, or shared it with a partner, build the robot and test your theory!

### Hints

- Think about what the SENSE Cubelets detect.
- Think about how the ACT Cubelets will behave.

### Difficulty

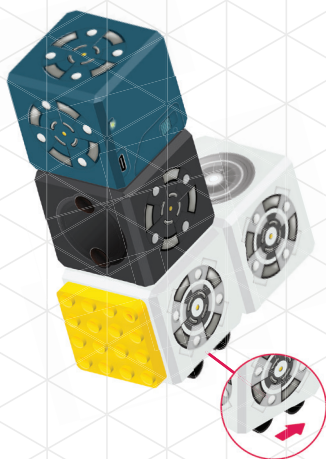


Artisan

Fold & Tape

# CAN YOU PREDICT...

BUILD VIEW



SIDE VIEW



## WHAT WILL IT DO?

**WAIT! DO NOT BUILD THIS ROBOT!**  
Turn card over for more instructions.

### Setup

- **WITHOUT BUILDING THE ROBOT**, find evidence that hints at what you think the robot will do.
- You might build a few smaller robots—or one different robot—to help refine your hypothesis.
- After you've recorded your hypothesis, or shared it with a partner, build the featured robot and test your theory!

### Hints

- Think about what the SENSE Cubelet detects.
- Think about how the ACT Cubelets will behave.

### Difficulty



Master

Fold & Tape

**INVENT IT!**



## DANCING ROBOTS

A robot that dances!

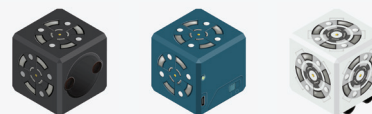
You may use as many Cubelets as you like  
to build your dancing robot.

### Setup

- How many different dancing robots can you make?
- Build and test different robots until you've made one that looks like it's dancing.

### Hints

- There are many ways to dance, because not everyone dances the same way.



Remember, your robot needs a  
SENSE, THINK, AND ACT Cubelet!

### Difficulty



Novice





# INVENT IT!



## FAST & SLOW BOTS

Can you design two separate robots that drive at different speeds?

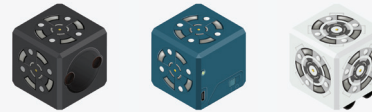
You may use as many Cubelets as you like to build your fast and slow robots.

### Setup

- Build and test different robots until you've made a fast driving robot and a slow driving robot.
- You may use as many Cubelets as you like to build your racing robot.

### Hints

- What's the fastest robot you can build?
- What's the slowest?
- Did any specific Cubelets make the biggest difference in how fast your robot moves?



Remember, your robot needs a SENSE, THINK, AND ACT Cubelet!

### Difficulty



Apprentice

Fold & Tape

**INVENT IT!**



## STORYBOOK BOT

Build a robot that represents a character from a book you've read recently. You may use as many Cubelets as you like to build your character robot.

### Setup

- Make a museum label for your robot that includes:

Character Name:

How the robot moves:

What the robot and book character have in common:

### Hints

- Think about your character. What might they run away from? What might they run toward?
- Is there anything that makes your character "light up"?

Remember, your robot needs a SENSE, THINK, AND ACT Cubelet!

### Difficulty



Apprentice



# INVENT IT!



## ROBOT ANIMAL

Invent a Cubelet construction that represents a simple animal. Then design something that shows off what your animal can to do.

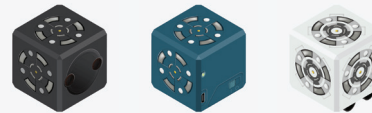
Fold & Tape

### Setup

- You may use as many Cubelets as you like to build your animal-robot.
- Build and test different robots until you've made one that behaves like an animal.
- Design a way to test how your robot animal behaves.

### Hints

- One school made a model of a crab and lured it into a trap so they could research it before releasing it back into the wild!



Remember, your robot needs a  
SENSE, THINK, AND ACT Cubelet!

### Difficulty



Apprentice

# INVENT IT!



## ESCAPE ARTIST

Invent a robot that can help you escape a dark room.

You may use as many Cubelets as you like to build your escape robot.

### Setup

- Build and test different robots until you've made a robot that can help you navigate and escape a dark room!
- BONUS CHALLENGE: What if you could not use a Brightness or Flashlight Cubelets?



### Hints

- Think about what you would do to escape a dark room.
- Which tools would you use?
- Which SENSES would you use?
- What would you be careful about?



Remember, your robot needs a SENSE, THINK, AND ACT Cubelet!

### Difficulty



Artisan



# INVENT IT!



## SENSE ROBOTS

Can you design TWO separate robots where one SENSES the other?

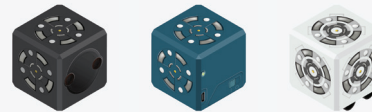
Fold & Tape

### Setup

- Build and test two different robots until you've made a set of robots where one can sense the other.
- You may use as many Cubelets as you like to build your chasing robots. (But we recommend starting small!)

### Hints

- Think about games you know:
  - Follow the Leader
  - Tag



Remember, your robot needs a SENSE, THINK, AND ACT Cubelet!

### Difficulty



Artisan



# INVENT IT!



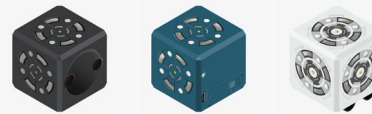
## CUBELETS KIT

Choose your own combination of Cubelets  
to sell in one box together.

### Setup

- Choose your own combination of Cubelets to sell in one box together.
- Design the box for these Cubelets.
- How will you fit them all in the box together?
- What are some robots you can build with this combination of Cubelets that you'd like to put on the outside of the box?

### Hints



Remember, your robot needs a  
SENSE, THINK, AND ACT Cubelet!

### Difficulty



Artisan

Fold & Tape

**INVENT IT!**



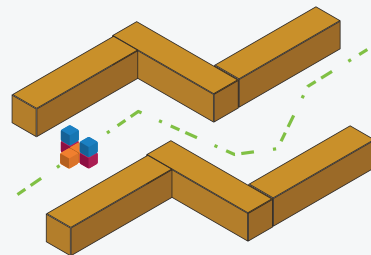
**!**  
This challenge  
requires additional  
supplies.

## MAZE SOLVER

A robot that can go through a simple maze.  
You may use as many Cubelets as you like  
to build your maze-solving robot.

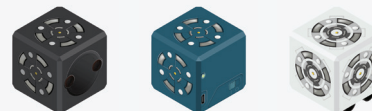
### Setup

- You may need to widen your maze to help your robot complete the maze.
- Stack some books or boxes to look like this..



### Hints

- It is possible to build a maze solver with only seven Cubelets.



Remember, your robot needs a  
SENSE, THINK, AND ACT Cubelet!

### Difficulty



Master



# INVENT IT!



! This challenge requires additional supplies.

## PROBLEM SOLVER

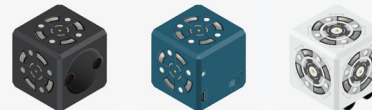
Invent a robot that solves a real-world problem. You might need to use some supplies like LEGO® bricks or paper & tape.



### Setup

- Invent a robot that solves a real-world problem. You might need to use some supplies like LEGO® bricks or paper and tape.
- Build and test different robots until you've made one that solves your chosen problem.
- Here are some ideas to get you started:
  - Windmill
  - Earthquake-proof Building Testing Site
  - Drawing a Circle
  - Crane

### Hints



Remember, your robot needs a SENSE, THINK, AND ACT Cubelet!

### Difficulty



Master



# INVENT IT!



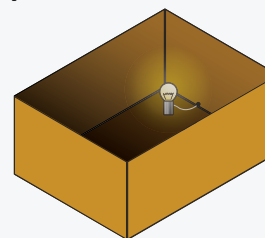
! This challenge requires additional supplies.

## LIGHT SEEKER

Build a robot that can find a light in a dark room.  
You may use as many Cubelets as you like to build your light-finding robot.

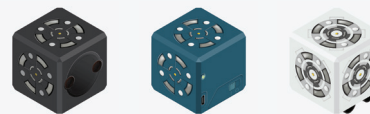
### Setup

- Try turning on a bright lightbulb in a completely dark room. Can you design a robot that can find the light, regardless of where the robot starts in the room?
- If your room isn't dark enough, try placing your robot in a big box with a lid. Peek in to see how your robot solves the puzzle.



### Hints

- No coding required.



Remember, your robot needs a  
SENSE, THINK, AND ACT Cubelet!

### Difficulty



Master



# INVENT IT!



! This challenge requires additional supplies.

## LINE FOLLOWER

Make a shape or trail on a white piece of paper using black tape. Can you design a robot that follows the trail you made?

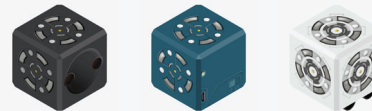
Fold & Tape

### Setup

- Using black tape, make a shape or trail on a white piece of paper .
- Build and test different robots until you've made one that successfully follows the black tape line on white paper.
- You may use as many Cubelets as you like to build your line-following robot.
- OPTIONAL: Try building a path with curves and tight corners. Can your robot stay on both types?

### Hints

- Experiment until you find a SENSE Cubelet that can detect the black tape line. The answer might surprise you!



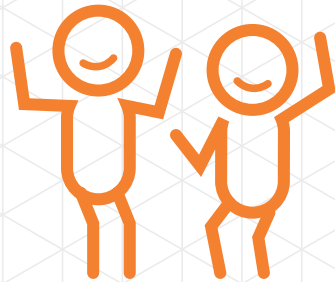
Remember, your robot needs a SENSE, THINK, AND ACT Cubelet!

### Difficulty



Master

# BLIND DIRECTIONS



! This challenge requires a partner & additional materials.

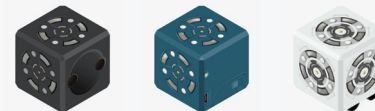
## DRAW-N-TRADE

Find a partner and some drawing supplies.

### Setup

- Design a robot. (Free choice - or use another card for inspiration!)
- Draw a model of your robot so you remember it.
- Sit back-to-back with a partner.
- Give the Cubelets you used to your partner.
- Give your partner directions on how to build the robot without seeing what they are doing. (Your partner can ask you questions).
- Test the robot to see if it's the same as the one you drew!

### Hints



Remember, your robot needs a SENSE, THINK, AND ACT Cubelet!

### Difficulty



Apprentice

# THINK ABOUT IT!



Card 1 of 2

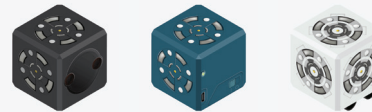
## CONFUSED ROBOT 1

Confused Robot Creation: Build a malfunctioning robot for a classmate to "debug," or fix.

### Setup

- Think about some easy mistakes people might make when building with Cubelets.
- Design a confused robot that includes one of these mistakes!
- Write an explanation describing what your robot is supposed to do if it is made correctly.
- Leave the robot and explanation behind for the next builder.

### Hints



Remember, your robot needs a SENSE, THINK, AND ACT Cubelet!

### Difficulty



Artisan

# THINK ABOUT IT!



Card 2 of 2

## CONFUSED ROBOT 2

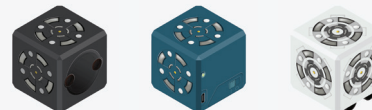
Confused Robot Debug: Debug, or fix, the robot so it does what the explanation says it will do.

### Setup

- Read the confused robot explanation to figure out what the robot should do.
- When you think you understand, build and test possible fixes for the robot until you've made a robot that can do what the explanation says it will do.
- Write a short note back to the designer explaining the mistake you found and how you fixed it.

### Hints

- Diagram your robot before you begin, so you can refer back to where you started.



Remember, your robot needs a SENSE, THINK, AND ACT Cubelet!

### Difficulty



Artisan

**DRAW IT!**



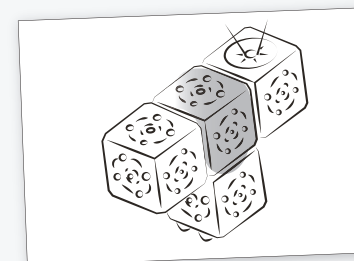
! This challenge requires additional supplies.

## ROBOT MODEL

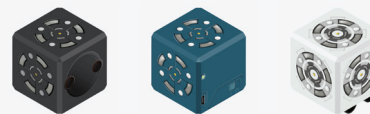
Collect some drawing supplies!

### Setup

- Build a Cubelets robot construction.
- Set it on the table in front of you.
- Draw what your construction looks like from the **OPPOSITE** side.



### Hints



Remember, your robot needs a  
SENSE, THINK, AND ACT Cubelet!

### Difficulty



Artisan