



## Robots #1

<b>Books</b>	<i>Nothing Can Possibly Go Wrong</i>	<i>Revolution 19</i>
	<i>Welcome to Your Awesome Robot</i>	<i>Cinder</i>
	<i>Mila 2.0</i>	<i>Camilla D'errico's Burn</i>
	<i>Etiquette &amp; Espionage</i>	<i>Robotics: Discover the Science &amp; Technology of the Future with 20 Projects</i>
<b>Robots</b>	Make: SpinBot	4M: Techno Robot
	Smithsonian: Robo-Spider	4M: Box Robot
	OWI: 7 in 1 Space Fleet	
<b>Make: SpinBot</b>	Directions	6 small Rubber bands
	8 Zip ties	3 Wire nuts
	Body & 3 legs	2 Rubber wheels
	Motor	8 Markers
	Switch	2 AA Batteries
	Battery Box	Double-sided foam tape
<b>OWI: 7 in 1 Space Fleet</b>	17 white plastic pieces	25 gray plastic pieces
	Detailed instruction booklet	1 yellow pinion gear
	1 blue pinion gear	2 yellow gears
	1 gear with shaft	3 small foam rectangles
	3 round shafts	1 hex shaft
	1 motor with PC board	1 longer round shaft
<b>Smithsonian: Robo-Spider</b>	32 blue plastic pieces	32 clear plastic pieces
	Gear box	Raised terminal
	Flat terminal	Rubber tube
	Battery cover	Instructions
<b>4M: Techno Robot</b>	5 gray thin cardboard pieces	4 red & blue thin cardboard pieces
	11 gray plastic pieces	2 clear plastic eyes
	Motor pieces	Instructions
<b>4M: Box Robot</b>	1 motor module	1 motor with worm gear & wires
	1 motor cover	1 axle with gear wheel
	2 tube structures	2 cams
	2 terminal caps	2 legs
	Screws	1 marker
	Instructions	Box
<b>Other Supplies</b>	AAA batteries	AA batteries
	Diagonal/Wire cutter	Scissors
	Double-sided tape	Small crosshead screwdriver
<b>Documents</b>	Check-out & Return Procedures	Inventory List
	Program Activities & Ideas	40 Developmental Assets for Teens



## Maker Kit Check-Out & Return Procedures

- An Inventory List is included. Check before and after use.
- If kit is incomplete, please e-mail or call Melendra Sanders at [msanders@nckls.org](mailto:msanders@nckls.org) or 1-800-432-2796 ext. 143.
- Loan period: **1 month**
- Kits will be sent, and can be returned, via courier.
- For those libraries not on courier, transportation can be arranged through the rotating book van. However, since the check-out period is for 1 month, either pick-up or return will be the responsibility of the library.
- Partial kits will not be checked out. Even if you are only utilizing a portion of the kit, the kit will remain as a unit.
- If you have created an activity that goes with the theme, please include a description (and photograph if possible) when sending back the kit. In this way, ideas are shared and everyone benefits. Ideas and activities can be added directly to the folder.
- All copying of activity sheets is the responsibility of the library.
- Copies can be made of all program materials to fill patron requests.
- If you have suggestions on how to improve this service, please share your thoughts with NCKLS.
- Excessive damage to the kit will be the responsibility of the library.
- **Please fill out the evaluation form before sending back.**
- Return all items to the original boxes before packing materials.
- Secure lid to bin using the plastic ties included in folder.
- Do not add packing material to the bins.
- If you have suggestions on how to improve this service, please share your thoughts with NCKLS.
- If you have any questions or concerns, e-mail or call Melendra at [msanders@nckls.org](mailto:msanders@nckls.org) or 1-800-432-2796 ext. 143.



## Robot #1

### Program Activities & Ideas

#### Activities on the Computer:

Simple Make a Robot websites:

Make a Robot: [http://iwaswondering.org/robot\\_game.html](http://iwaswondering.org/robot_game.html)

Build-a-Robot: <http://www.kanogames.com/build/robot>

Build a Robot and Test it on simple tasks:

Wonderville Robot Factory: <http://www.wonderville.ca/asset/robot-factory>

Robot Related Computer Games:

Robot vs. Alien game: <http://www.luckygamez.com/kids/play1391#.UssNwFRDu5J>

Escape from Robotron game: <http://www.luckygamez.com/kids/play1496#.UssOEPRDu5I>

Short Robot Videos:

Robot Horse: <https://www.youtube.com/watch?v=YEzNJ9Ttsjs>

Kangaroo: <https://www.youtube.com/watch?v=4luJ0ZSqy8>

Flipping Pancakes: [https://www.youtube.com/watch?v=W\\_gxLKSsSIE](https://www.youtube.com/watch?v=W_gxLKSsSIE)

Stacking: <https://www.youtube.com/watch?v=v9oeOYMRvuQ>

ArtBots: <https://www.youtube.com/watch?v=VnL4222gtWc>

#### Other Ideas:

Watch Wall-E

4-H Robotics Curriculum: <http://www.4-h.org/resource-library/curriculum/4-h-robotics/>

Cereal Box Robots

Make ArtBots

Make a Mini-Robot

#### Building Non-Kit Robots

4H Robotics Curriculum: <http://4-h.org/parents/curriculum/robotics/>

Boy Scouts Robotics: [http://www.scouting.org/filestore/Merit\\_Badge\\_RegandRes/Robotics.pdf](http://www.scouting.org/filestore/Merit_Badge_RegandRes/Robotics.pdf)  
diyready: <http://diyready.com/how-to-make-a-robot/>

Instructables: <http://www.instructables.com/howto/robots/>

Let's Make Robots: <http://letsmakerobots.com/>

Make: <https://goo.gl/yrI4Q0>

Popular Mechanics: <https://goo.gl/0xgw64>

Science Buddies: <https://goo.gl/mk0eiC>



## **Robot #1 Book Trailers**

*Nothing Can Possibly Go Wrong* by Prudence Shen

[https://www.youtube.com/watch?v=Dq\\_q8hJB6Gc](https://www.youtube.com/watch?v=Dq_q8hJB6Gc)

[https://www.youtube.com/watch?v=rS-Dz\\_f52Gk](https://www.youtube.com/watch?v=rS-Dz_f52Gk)

*Mila 2.0* by Debra Driza

<https://www.youtube.com/watch?v=vaHXY9ckU40>

<https://www.youtube.com/watch?v=UdSHme671Hg>

*Etiquette & Espionage* by Gail Carriger

[https://www.youtube.com/watch?v=5CCTCH\\_h9L0](https://www.youtube.com/watch?v=5CCTCH_h9L0)

<https://www.youtube.com/watch?v=aOhd6BCCI2k>

<https://www.youtube.com/watch?v=8vy2uGmSFIE>

*Revolution 19* by Gregg Rosenblum

<https://www.youtube.com/watch?v=D1nGapA6fHU>

*Cinder* by Marissa Meyer

<https://www.youtube.com/watch?v=pXrMAFGWyuE>

<https://www.youtube.com/watch?v=sY-RUc9USEI>

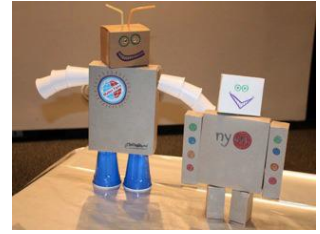
<https://www.youtube.com/watch?v=nyBypR51Bt0>

<https://www.youtube.com/watch?v=bRmxQxflaGc>

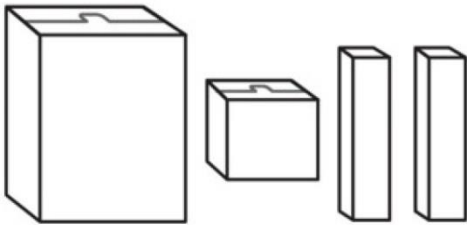
## Maker



## Cereal Box Robot Directions



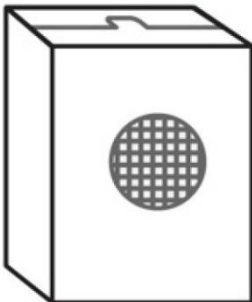
1.



### Step #1: Collect your boxes.

Using a variety of boxes, collect a small, square box for the head, like a tea box. The central part of the robot can be a cereal or cracker box, and the arms and legs should be long, skinny boxes, like a cracker box cut in half. You can also get creative with arms and legs and use plastic cups, soda bottles, and anything else you can get your hands on.

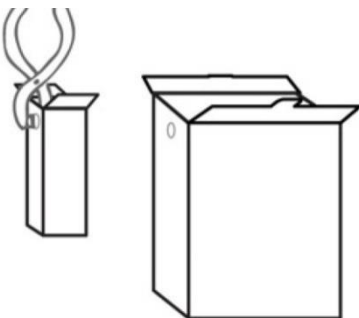
2.



### Step #2: Style out your robot.

Create the center of the robot by folding up the largest box. If you'd like to add modifications to the robot, like turning it into an amp or a pair of speakers, this is the perfect time to do that.

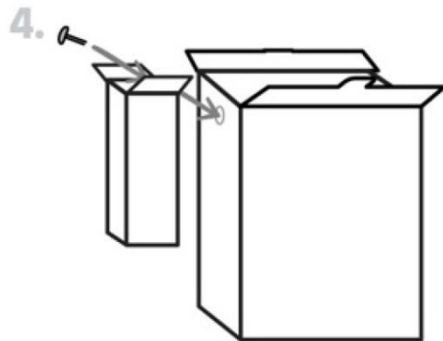
3.



### Step #3: Prepare the robot arms.

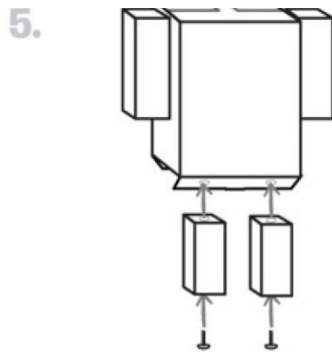
To attach the arms, punch 2 holes about a half inch down on the narrow side of the robot body near the top of the box. Then, punch a hole about a half inch down from the top edge of the box of the tall skinny box.

## Maker



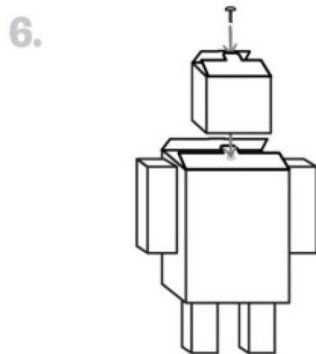
### Step #4: Attach the robot arms.

Attach the arm to the robot body with a paper fastener. Tape the box lids closed. Repeat for the other side.



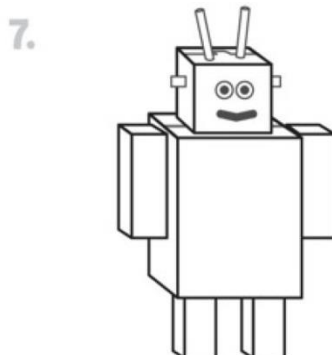
### Step #5: Attach the robot legs.

To attach the legs, punch 2 holes about a quarter of the way in from the edge of the box on either side. Then punch a hole in the center of the top of two of the narrow boxes. Attach with a paper fastener and tape slide the tape in between the two boxes and close the box tops.



### Step #6: Attach the Robot Head

Attach the head to the body by punching a hole in the center of the top flap in the robot body. Then punch a hole in the center of the bottom flap on the robot head. Attach the head to the body with a paper fastener.



### Step #7: Decorate your robot.

You can create holes in the head for drinking straw antennas. Use stickers, markers, and anything else you can find to put the finishing touches on your new box 'bot!



## Make ArtBots

### Equipment:

Dollar store electric toothbrushes  
Pool noodles, Plastic cups, or other items that can be used as body  
Markers  
Electrical tape  
Rubber bands  
Pipe cleaners  
Glue  
Googly eyes  
Other decorations  
Pliers



**Directions:** There are a lot of different ways to make artbots, and most importantly there's not one right way to create one. The following is just one way to make an artbot. The first artbot we attempted included a Solo cup, a motor and battery from a dollar store electric toothbrush, three markers, and some tape. A post on the Geek Dad website (see below) was helpful when getting started. It turns out that other libraries and museums had been trying out art-bots too and tried using pool noodles (which you also can get at the dollar store). They're easier to work with and to decorate.

The hardest part of making an artbot is getting the motor and battery out of the toothbrush. Removing the bottom of the toothbrush and then banging it on the ground to get the motor and battery out seems to work well. If you use pliers to pull everything out, you risk stretching out the toothbrush's spring. Plus banging it on the ground is fun. Once you've pulled out your motor and battery pack, you need to reassemble them. You'll want to try to line up all the metal pieces on each section, make sure your motor runs, and then tape or rubber band it together. Mount it on your pool noodle, cup, or whatever you want to use, add marker legs, decorate it, and then turn it on and see what it does (make sure to remove the marker caps).

~ Renee Neumeier  
Young Adult Librarian Supervisor,  
Evanston Public Library [rneumeier@cityofevanston.org](mailto:rneumeier@cityofevanston.org)



## Maker Kit Evaluation Robots #1

1. Please place an X in the column next to any piece of the kit that you used:

		X		X
<b>Books</b>	<i>Nothing Can Possibly Go Wrong</i>		<i>Camilla D'errico's Burn</i>	
	<i>Welcome to Your Awesome Robot</i>		<i>Robotics: Discover the Science &amp; Technology of the Future with 20 Projects</i>	
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<b>Documentation</b>	Check-out & Return Procedures			
	Program Activities & Ideas			
	Inventory List			
	40 Developmental Assets for Teens			

2. How many programs did you conduct with the kit and how many total people attended?

# of programs: \_\_\_\_\_ # of attendees: \_\_\_\_\_

3. Please rate the kit on a scale of 1-5 (1=poor, 5 =excellent):

1      2      3      4      5

4. Any comments about the kit or suggestions for improvement?