



## Builder #5

<b>Books</b>	<i>National Geographic Animal Encyclopedia</i>	<i>The Mythic Bestiary: The Illustrated Guide to the World's Most Fantastical Creatures</i>
	<i>Cathedral</i>	<i>The Lego Ideas Book</i>
	<i>Lonely Planet Not-for-Parents the Real Wonders of the World</i>	<i>The Story of Buildings: From the Pyramids to the Sydney Opera House &amp; Beyond</i>
	<i>The Unofficial Lego Builder's Guide</i>	
<b>Construction Materials</b>	Legos	Fiddlestix
	K'nex	Tumble Tree Timbers
	Battat Krinkles	
<b>Legos</b>	607 Pieces (specifics on back of bin)	Lego square bin
	Small "ideas" booklet	
<b>Fiddlestix</b>	104 Pieces (specifics on back of box)	Fiddlestix cardboard box
	Builder guide poster	
<b>K'nex</b>	521 Pieces (specifics in builder guide)	K'nex rectangular bin
	Builder guide booklet	
<b>Tumble Tree Timbers</b>	150 Pieces (specifics in flyer)	Tumble Tree Timbers cardboard box
	Builder guide flyer	
<b>Battat Krinkles</b>	85 Pieces Total	8 wheels
	8 circles	12 squares
	4 short rectangles	4 long rectangles
	8 triangles	4 pyramids
	4 open squares	4 half globes
	2 half cylinders	4 thin rectangles
	2 half boxes	5 figures (4 people & 1 dog)
<b>Connectors</b>	2 Lego bottom/ K'nex top connectors	2 Lego bottom/ Krinkles top connectors
	2 Krinkles bottom/ Lego top connectors	2 Krinkles bottom/ K'nex top connectors
	2 Krinkles bottom/ Fiddlestix top connectors	2 Krinkles bottom/ Timbers top connectors
	2 Lego bottom/ Timbers top connectors	2 Timbers bottom/ Lego top connectors
	2 Lego bottom/ Fiddlestix top connectors	2 Fiddlestix/ K'nex connectors
	2 Fiddlestix / Krinkles connectors	2 Fiddlestix bottom/ Lego top connectors
	2 Timbers bottom/ Fiddlestix top connectors	
<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.



## **Builder #5 Program Activities & Ideas**

### **Activities on the Computer:**

#### Builder Videos:

Lego Cruise Ship: <https://www.youtube.com/watch?v=j2aIHwtSWn0>

Stop Motion Animation Lego: <https://www.youtube.com/watch?v=467y1IHCcLO>

K'nex: <https://www.youtube.com/watch?v=EnAdGnAS2Cg>

Lincoln Logs Time Lapse: <https://www.youtube.com/watch?v=FjIGptxHqq0>

Simple Building Lincoln Logs Stop Motion Animation:

<https://www.youtube.com/watch?v=fshA6OMkqml>

### **Ideas for Specific Materials:**

#### Lego Ideas:

Lego Ideas for the Kids: <http://www.pinterest.com/a-millerlynch/lego-ideas-for-the-kids/>

Lego: 20+ Ways to Create, Learn & Play: <http://kidsactivitiesblog.com/23918/build-legos>

What Can You Build with 25 Bricks?: <http://frugalfun4boys.com/2013/03/28/lego-fun-friday-what-can-you-build-with-25-bricks/>

#### K'nex Ideas:

K'nex Everything Instructables: <http://www.instructables.com/group/knexeverything/>

K'nex Bonus Builds: <http://www.knex.com/fun-and-games/bonus-builds/contraptions/>

K'nex & Lego Ideas: <http://www.pinterest.com/kassitea331/knex-lego-ideas/>

K'nex User Group: <http://www.knexusergroup.org.uk/acatalog/knex-models-to-build.html>

Instructables K'nex Play: <http://www.instructables.com/tag/type-id/category-play/channel-knex/>

#### Lincoln Log/Tumbler Tree Timbers Ideas:

Lincoln Log Building Instructions: <http://www.knex.com/products/lincoln-logs/building-instructions/>

### **Other Ideas:**

Give each participant a matching set of blocks and see who can build the tallest structure.

Ask participants to build a creation that matches a photograph of a real item.



- **Building Challenges**



Putting the emphasis on creativity and play as a learning technique, keynote speaker Bo Stjerne Thomsen, director of research and learning at the Lego Foundation, challenged each audience member to take six Lego blocks and create a duck within one minute.

From: <http://www.americanlibrariesmagazine.org/blog/creativity-and-play-next-library-conference>

- **Building Shelters** - Luckily this moon seemed to be littered with LEGOs, which provided the building materials. I prepped small cups of LEGOs on a table, and the astronauts used robot hands to grab and carry them back to their pods, where building shelters could commence.
  - From: The Show Me Librarian blog “Lost In Space! An Unprogram for School-Age Astronauts”: [http://showmelibrarian.blogspot.com/2014/03/lost-in-space-unprogram-for-school-age.html?utm\\_source=feedburner&utm\\_medium=email&utm\\_campaign=Feed%3A+TheShowMeLibrarian+%28The+Show+Me+Librarian%29](http://showmelibrarian.blogspot.com/2014/03/lost-in-space-unprogram-for-school-age.html?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+TheShowMeLibrarian+%28The+Show+Me+Librarian%29)
- **Build with Chrome:** <https://www.buildwithchrome.com/>
- Make stop-motion animation with any of the building sets.
- Schedule your building activities early in the time you have the Maker Kit so that you can have a display of the items built for a few weeks.
  - **“Display Space** -- Having a designated area in which to display children's maker space creations is wonderful. It advertises the types of maker activities other library customers could enjoy, and it allows the makers to feel pride in both their creations and the library. My library displays kids' LEGO Club creations every month on top of our reserves shelving, which is a high-traffic area. Display space can be at a premium in a library, though, so happily there are alternatives to physically displaying creations in the library. One option is to take pictures of the creations and print out a few for a library bulletin board. Another is to upload those photographs to the library's Facebook page or Flickr account. (Want lots of folks to visit your social media pages?



Tell caregivers they can see their kids' creations on your pages, and \*BOOM\* hits galore.) You can even go all out and offer a gallery-style program in which all the various creations from library programs are on display in the program room." From the Show Me Librarian blog: [http://showmelibrarian.blogspot.com/2013/10/my-maker-philosophy.html?utm\\_source=feedburner&utm\\_medium=email&utm\\_campaign=Feed%3A+TheShowMeLibrarian+%28The+Show+Me+Librarian%29](http://showmelibrarian.blogspot.com/2013/10/my-maker-philosophy.html?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+TheShowMeLibrarian+%28The+Show+Me+Librarian%29)

- **Library Sponsored Public LEGO Track at the Pinewood Derby!**



- From Bryce Don't Play blog:

- [http://brycedontplay.blogspot.com/2014/05/library-sponsored-public-lego-track-at.html?utm\\_source=feedburner&utm\\_medium=email&utm\\_campaign=Feed%3A+BryceDontPlay+%28Bryce+Don%27t+Play%29](http://brycedontplay.blogspot.com/2014/05/library-sponsored-public-lego-track-at.html?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+BryceDontPlay+%28Bryce+Don%27t+Play%29)

- So last summer we were able to partner with the Boy Scouts to bring in a Pinewood Derby track for our LEGO Chima party. The next logically awesome step was to create a free track at the Pinewood Derby, JUST for LEGO cars!

The last time I attended a Pinewood Derby was sometime in grade school, so I knew nothing of the magnitude of today's races-- this was *at the mall* and there were computers to calculate exact times and everything! There were upwards of a hundred Boy Scouts and their families there from the surrounding counties (we're a city of 50,000 people, but we're the largest city for at least 2 hours on the freeway in any direction). The enthusiasm was contagious.

The normal Pinewood Derby lanes cost 4 dollars to race, and this money paid for the prizes the winning kids got. In order to "sponsor" a LEGO track and provide it for free to the public, all we had to do at the library was supply the LEGOs and agree to not give away prizes (they ended up giving me a trophy to give away anyway, because it's the Boy Scouts). I brought some Cri-Cut "blue ribbons" with a picture from the LEGO movie on them and our logo that I gave to all participants. Just like with Chima, the kids built their entire structures and the wheels were put on right before it was time to race. Some tracks need special wheels to race LEGO cars; the troop I worked with had made us some over the summer, but you can purchase them at places like here.



If you want to get with your local Boy Scouts to offer a free LEGO track at the Pinewood Derby, here's some things you need to know:

**1. Your contact will probably be titled District Executive.** Find that person on your area Boy Scouts website. Contact them in the summer, October at the latest, to be considered to be part of the derby. The first meeting I went to was in December for



the April event, but that was because they were already sold on having the library participate.

**2. Any derby-related question the kids ask during your event can probably be answered with "that doesn't happen at this track."** Since the LEGO track is (or should be) free and open to the public, all the kids need to do is build a car out of LEGO. They don't need extra weights, or anything else they'll probably ask you for that they added to their derby cars. Yes, their cars can survive for a little while without wheels. Pinewood Derby stuff is *intense, man*, and they've been breathing it all year. Just don't ask Boy Scout staff about whether a kid can add weights, or whatever, and just say no. Your 2 hours will go so much more smoothly.

**3. In that vein, put your table out further into the public space than the rest of the tables.** This was something my contact and I thought about for next year (that's right, we're ALREADY in for next year!). Even though we had around 60 LEGO car participants, they were mostly Boy Scouts and their families (with some library regulars who knew we'd be there). Putting it out in the public sphere will widen our outreach to people who may not have thought the track was FOR THEM. That said, I've seen more Boy Scouts at the library and at our programs than I did previously, and it probably has something to do with our involvement in the Derby!

**4. Give some visual guidelines.** Adult common sense would say that the best LEGO Pinewood Derby racer would look like a regular Pinewood Derby car ("short and long, not tall and square"-- I must've said that 30 times that day). Help kids grasp this idea by providing visual guidelines. I provided pictures, but it worked much better once a Scout leader gave me an actual Derby car the kids could measure theirs against.

That's all I can think of! If you have any more questions about making this partnership work for you, get at me at brycedontplay at gmail or PLSanders on Twitter and I'll walk you through it. This collaboration works great, because: 1) The Pinewood Derby is such an exclusive thing happening in a public place, and the Boy Scouts are happy to get some more excited eyes involved, and 2) now that the Boy Scouts know what we provide, we've been invited to do some STEM programming at their summer camp, and they're always thinking of other ways to partner! It's a win-win, really.

- **Build a Fiddlestix Catapult**

Materials:

7 Fiddlestix circles with 1 hole per flat side

1 Fiddlestix circle with 5 holes per flat side

3 Fiddlestix red sticks

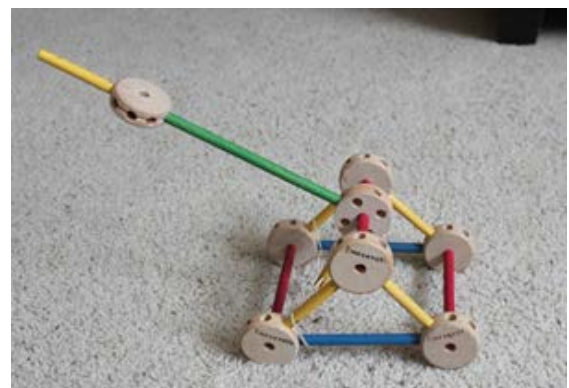
6 Fiddlestix yellow sticks

1 Fiddlestix green stick

Rubber band

Ammunition

String



## **Making Stop Motion Animation with the Builder Kit**

### **Information about Stop Motion Animation:**

Brickfilms: <http://brickfilms.com/>

How to Make a LEGO Animation: <http://www.wikihow.com/Make-a-LEGO-Animation>

Stop Motion on Instructables: <http://www.instructables.com/howto/stop+motion+animation/>

5 Ways to Create a Stop Motion Animation: <http://www.wikihow.com/Create-a-Stop-Motion-Animation>

### **Apps for Making Stop Motion Animation:**

Stop Motion Studio app for iPad: <https://itunes.apple.com/us/app/stop-motion-studio/id441651297?mt=8> (free)

Stop-Motion Camera app for iPhone and iPad: <https://itunes.apple.com/us/app/stop-motion-camera/id476953890?mt=8&ign-mpt=uo%3D4> (free)

Stop Motion Café app for iPhone and iPad: <https://itunes.apple.com/us/app/stop-motion-cafe/id492389084?mt=8&ign-mpt=uo%3D4> (free)

iMotion app for iPhone and iPad: <https://itunes.apple.com/us/app/imotion/id421365625?mt=8> (free)

Video Star app for iPhone and iPad: <https://itunes.apple.com/us/app/video-star/id438596432?mt=8> (free)

Stop-Motion-Lite app for Android:

<https://play.google.com/store/apps/details?id=com.sheado.lite.stopmotion&hl=en> (free)

Stop Motion Maker app for Android:

<https://play.google.com/store/apps/details?id=com.octoroid.komadori.lite&hl=en> (free)

Flipagram app for Android:

<https://play.google.com/store/apps/details?id=com.cheerfulinc.flipagram&hl=en> (free)

### **Advice for Making Stop Motion Movies:**

5 Tips for Making a Stop Motion Video: <http://digital-photography-school.com/5-tips-for-making-a-stop-motion-video/>

Stop Motion Photography! Ten Tips from Justin Clayden:

<http://www.stopmotioncentral.com/articles-6.html>

How to Do a Great Stopmotion Animation Tutorial:

<https://www.youtube.com/watch?v=Mtu2dffLRTk>

Social Times: So You Want to Make Stop Motion: Tips from a Stop Motion Extraordinaire:

[http://socialtimes.com/stop-motion-tips\\_b80722](http://socialtimes.com/stop-motion-tips_b80722)

Claymation and Stop Motion in the Classroom: Tips, Tricks and Techniques:

<https://sites.google.com/site/movies2bmade/tips-tricks-and-techniques>



## Maker Kit Evaluation Builder #5

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

	X	X
<b>Books</b>	<i>National Geographic Animal Encyclopedia</i>	<i>The Unofficial Lego Builder's Guide</i>
	<i>Cathedral</i>	<i>The Lego Ideas Book</i>
	<i>The Boys' Guide to Drawing Aliens, Warriors, Robots, &amp; Other Cool Stuff</i>	<i>The Mythic Bestiary: The Illustrated Guide to the World's Most Fantastical Creatures</i>
	<i>Lonely Planet Not-for-Parents the Real Wonders of the World</i>	
<b>Construction Materials</b>	Legos	
	Fiddlestix	
	K'nex	
	Tumble Tree Timbers	
	Battat Krinkles	
<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 what ages of attendees?

# 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?