

Magnection

by Dan Bershefsky

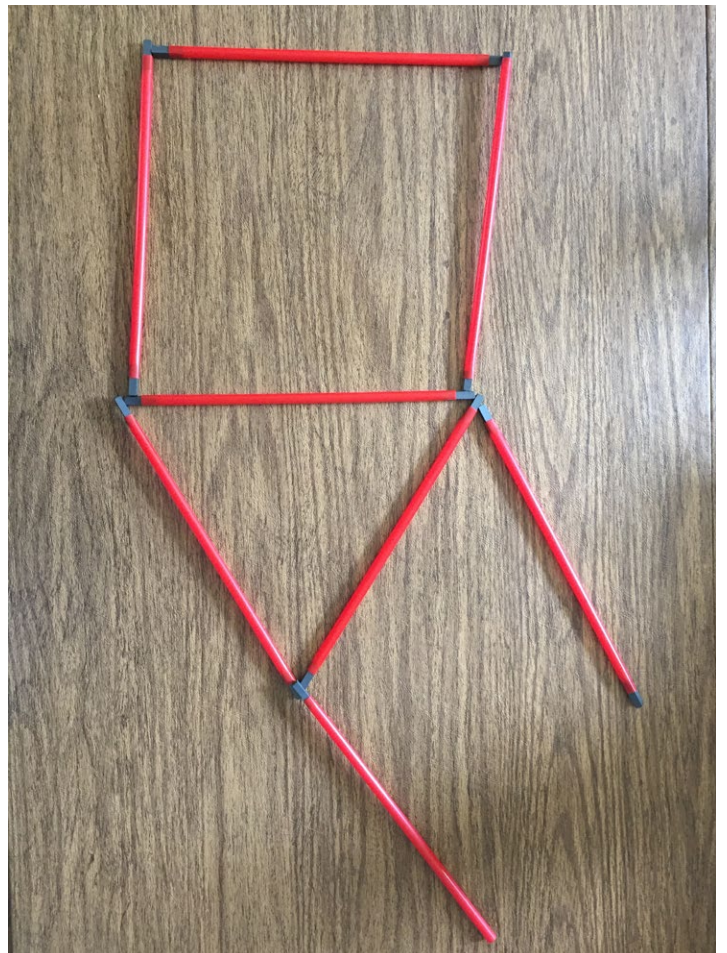
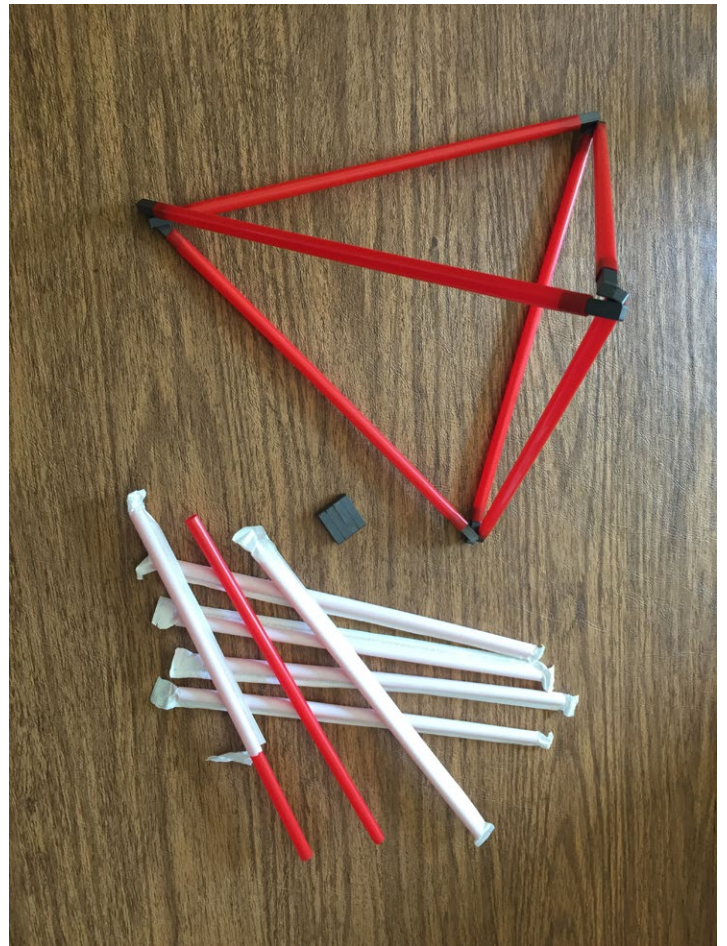
Welcome to the fun new world of connection with Magnection!

Your ecofriendly, easy to use toy system which allows your children to imagine and create an endless possibility of 2D and 3D polygonal shapes. A hands on STEM (Science, technology, engineering, and mathematics) toy for advancing fine motor skills and learning about geometry.



Magnaction applies the basic physics of magnets with simple connecting rods made from eco-friendly drinking straws. The magnets could be inserted into one or both ends of the straws for ease of construction and deconstruction.

Imaginative forms can be augmented with everyday recycled materials from your home, which allow for an unlimited scale and **endless possibilities**.



Material Kit

The basic kit consists of:

32 Rectangle Magnets

2 Round Magnets

30 Straws

Add Your Own Recycled Materials

The Magnaction toy system encourages kids to expand their creations with various packaging materials that would normally be recycled.

Like:

- Coffee tins
- Pickle jar lids
- Jam jar lids
- Tuna cans
- Soup cans
- Soda cans

And other commonly consumed food containers that are made of metal or that have a unique connector that could be included to make a new shape.

The activity of seeking out new materials helps kids learn about and be more aware of the packaging their food comes in.



Safety

The basic kit parts are non-toxic and not harmful for children ages 5 and up. The one safety concern relates to the recycled materials that have been added to the base system. Some of the basic recycled materials that we have used are soda cans, coffee tins, metal jar lids and tuna cans. Check to make sure there are no sharp edges on the cans before allowing your children to include in their creations.

For Kids Ages 5+

The basic parts of the Magnaction system are everyday household straws and ceramic magnets which when used as connecting parts, cause no harm at all. Be sure to regulate all recycled materials that are added into use and make sure they are safe.



Ecofriendly

The straws are made from biodegradable plant sourced plastics which are not only ecofriendly, but very durable to withstand many repeated connections.

You could buy these straws online to use for drinking and then take out 20 to use in the kit.

<http://worldcentric.org/biocompostables/utensils/straws>

Cost

Magnets **\$8.50** (4 packs of 8 magnets and partial pack)
Straws **\$1.50** (~.05 each straw or free at most restaurants)



Assembly

There are no special tools required to build with Magnection. Simply remove the magnets and straws from the box and insert the magnets into each straw. That's it! The time to completion is generally around 4 minutes.

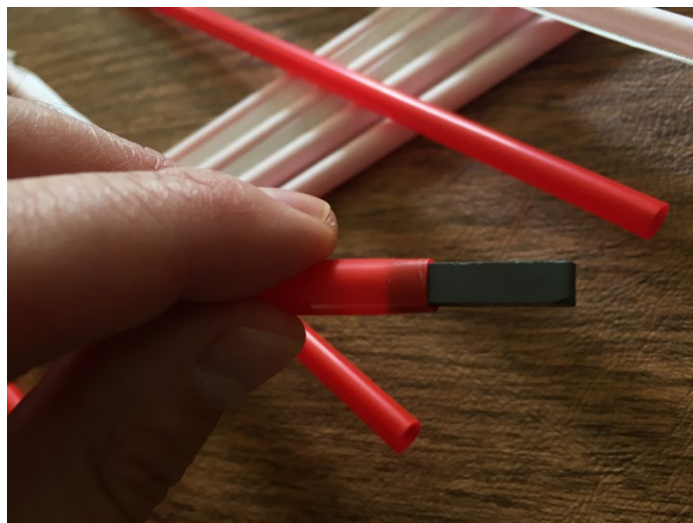
Step 1 - Open Pieces

Open box and remove the magnets and straws.

Step 2 - Insert Magnets

Insert one magnet about half way into each end of the straw. Repeat this process until all magnets are inserted into the straws.

Tip: You could leave the magnets extended further out when connecting many Magne-Poles to one point. This will ensure there is enough area exposed to establish the magnetic connection. Don't worry about getting them to exact lengths as the magnets could be easily repositioned and removed.



Step 3 - Create

Start connecting the ends of each Magne-pole and begin creating.

Tip: You could cut the straws to any length and make smaller connections.



Challenge Creation:

Space Ship with Can

Step 1

Connect 2 Short Poles at one end.



Step 2

Connect other ends of the Short Poles to the outside of a tin can. We used a tuna can here in this example.



Step 3 - Fuselage

Connect 2 Long Poles at each end of the Short Poles. The magnets will connect to both the sides of the can and the ends of each pole. Use a Short Pole to connect the other end of the Long Poles. This is the fuselage of the ship.



Step 4 - Wings

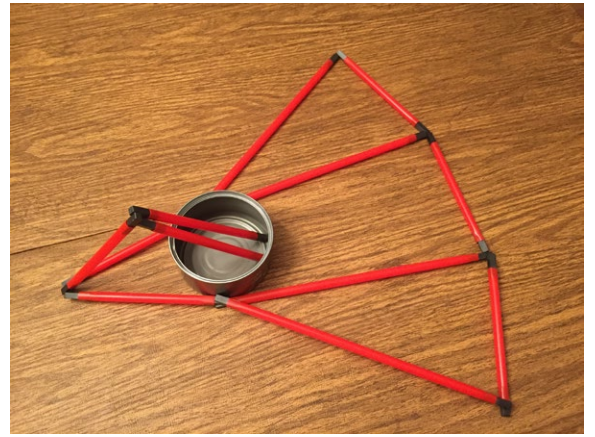
Connect 2 Long Poles at each side of the can an approximate 35 degree angle. Connect the back of the wings with 2 Short Poles. This is now the base 2D shape for the Space Ship.



Space Ship (Continued)

Step 5 - Cockpit

Connect 3 Short Poles at one end and then extend the other ends outward. One end will connect to the front of the ship and the other 2 will connect to the inside back of the tin can.



Step 6

Repeat the process in step 5 to create the back of the fuselage using 1 Short Pole and 2 Long Poles. The Short Pole will be the base, connected to the inside of the tin can. Then the 2 Long Poles will connect the back of the Ship.

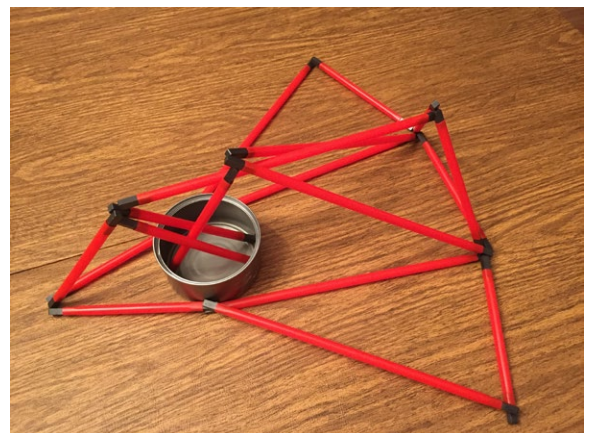


Step 7 - Top

Connect 2 Short Poles at one end to form an angle. Then connect the other ends to the back end of the Ship, forming a triangle. You will need to hold these pieces up while you connect the top bar support from the top of the cockpit.



You're Done!

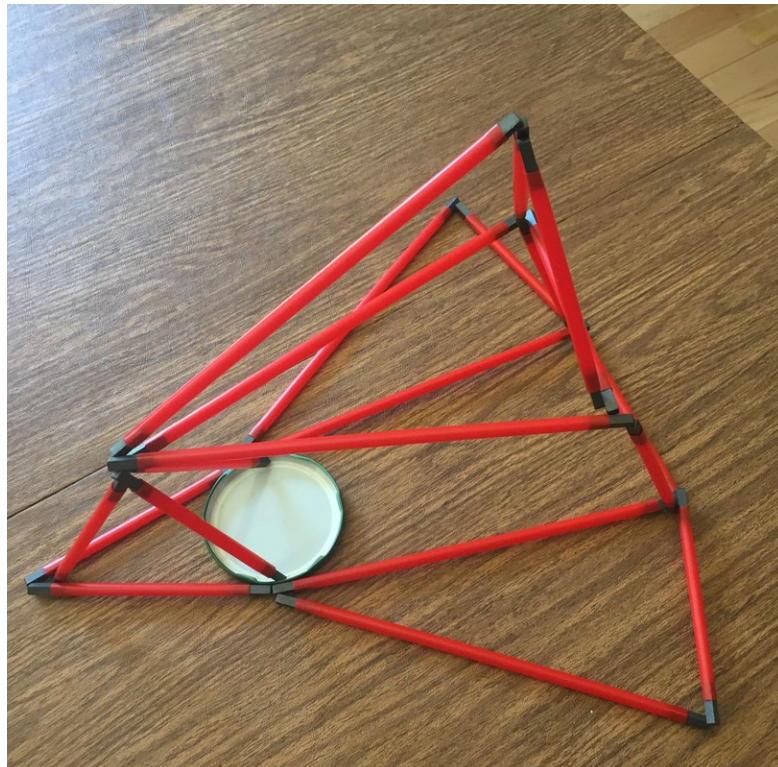
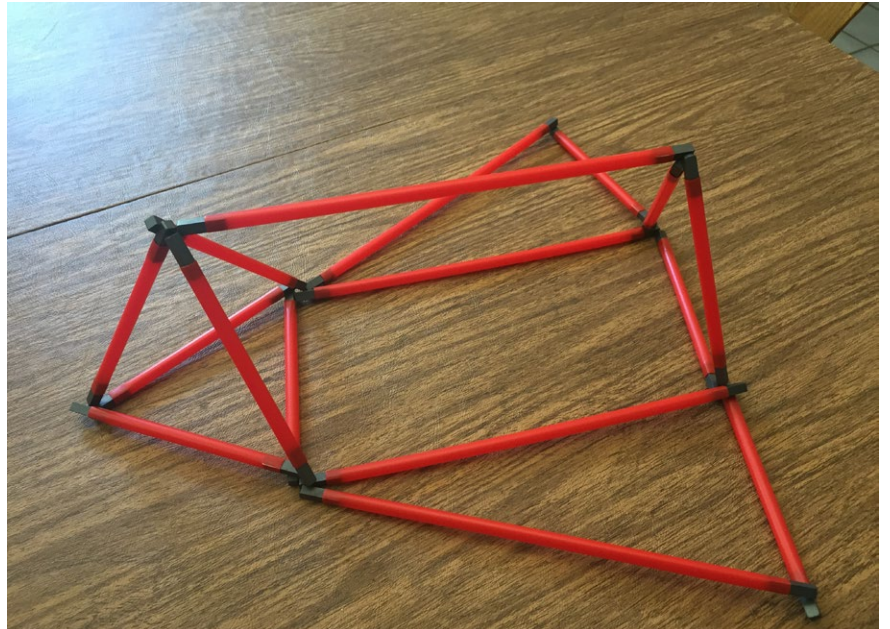


More Challenges

Basic Space Ship

Tips:

Connect the 2D frame of the object first before adding the depth. You will need to use 2 hands when carefully connecting the vertical supports. Be careful of the magnet strengths as they come into proximity with other points.



Advanced Space Ship

Tips:

Connect the 2D frame of the object first before adding the depth. Metal lids are great for establishing the center point or foundation of the shape. Using metal lids also helps stabilize the structure.