

## SHOEBOX ROVER MATERIALS LIST

### [NASA Discovery New Frontiers](#)

Make your spacecraft constructing simple machine components using whatever you have around the house or learning space—we have! That said, here are materials we've learned are particularly useful.

#### Materials (amounts estimated)

##### General

- Shoebox
- Card or foam board
  - for making wheels and braces
- Skewers (7/per)

##### Craft Supply store

- Paper straws (10/per)
  - For levers. Plastic can work, and are useful in other constructions, but tend to split at the fulcrum. Try reinforcing with tape if you use plastic.
- 1/8" brads (in scrapbooking section—if buying in bulk, purchase online to save)
- Spools (automata handles)
- Thin twine
- Popsicle sticks (wide and narrow)
- Bobbins
  - For pulleys, you can make your own as well
- Embroidery needles
  - For scoring 3D template lines to aid in folding
- Beads
  - large with small holes

##### Office supply

- Regular hole punch
- Paper clips
- Office brads (~1")
- Tape (masking/scotch)
- Push pin

##### Tools

- Scissors
- Leather/multi punch
  - Purchase [online](#) for ~\$7
  - Can use small nail, hammer, wood to make holes small enough
- hot glue gun w/sticks
- wire cutting pliers or pruning shears (to cut skewers)
- X-acto knife
  - clean cuts on wheels, etc.

##### Cardstock templates

- 1 base template/person
- 1 lever template/person
- 1 set of the other templates (trapezoid, smaller 3D shapes, etc.) per team of 4

##### Helpful:

- More Straws! (any size you see, many uses)
- Tacky glue
- Beads of various sizes