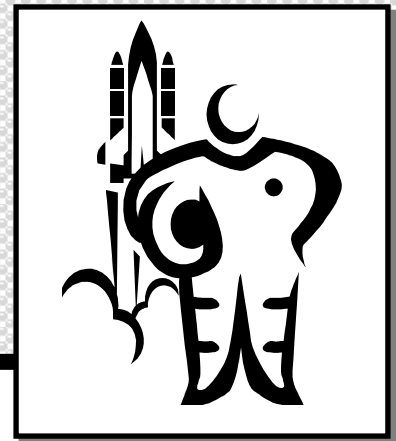


TOUCHDOWN

NASA DESIGN SQUAD CHALLENGE



CHALLENGE:

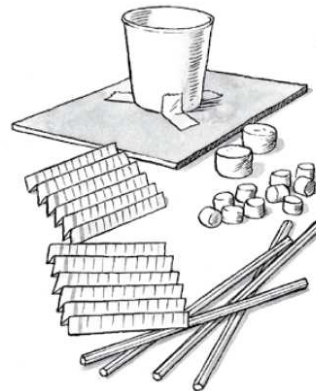
Build a **shock-absorbing spacecraft** that will protect two “astronauts” when they land. The design team that builds a system that can drop the two “astronauts” from the highest distance without them falling out will win the challenge.

RESTRICTIONS:

- The cup has to be on top of your device with the “astronauts” inside.
- The “astronauts” cannot be altered in any way.
- The “astronauts” have to be the only thing in the cup- and they cannot be taped or restricted in any way.
- The cup has to remain open. Nothing can be placed on the top of the cup to extended it or hold the astronauts inside the cup.

MATERIALS:

- 1 piece cardboard (4 x 5 in)
- 1 cup
- 3 index cards
- 2 regular marshmallows (astronauts)
- 10 miniature marshmallows
- 3 rubber bands
- 8 plastic straws
- Scissors
- 12” masking tape



PART I: BRAINSTORM IDEAS

A. **Using a pencil**, draw thumbnail sketches that communicate your ideas in the space below.

Idea 1	Idea 2	Idea 3

B. Pick your favorite design from the sketches above, and draw in pencil what your device will look like from the front, top, and side view.

***Label all materials and dimensions** (length, width, and height)

Top View	
Side View	Front View

PART 3: TESTING TRIALS

A. Using complete sentences, explain the results of your design.

PART 4: CONCLUSIONS

A. Using complete sentences: What would you change about your design to make it better?

B. Using complete sentences: Describe one strength and one weakness of your design.