

“Be an Aerospace Engineer”

Job Task:

You are the engineer! You have been asked by NASA to design a space capsule prototype that will survive re-entry through the Earth's atmosphere. NASA scientist have determined that the re-entry impact would be similar to an egg dropping from a height of 8 ft.

Timeframe: 1 – 2 hours

Materials List:

- Raw Eggs
- Hard-boiled eggs (or plastic eggs)
- Paper, Pencils, Markers
- Straws, Cardboard, Packing Material, Styrofoam, Meat Trays, Egg Cartons, String,
- Paper Towels, Garbage Bags, Cotton, Toothpicks, Dixie Cups, Sandwich Bags (other assorted materials)
- Scissors
- Cellophane Tape
- Drop Cloth
- Ladder (or balcony)
- Paper Towels

Procedure:

1. Have the students draw a face and flight suit on their raw eggs using colored markers. They can name their Egg-stronauts at this time. Place raw eggs back in egg carton.
2. Have the students review all of the materials they can use for designing their space capsules.
3. Have them draw on paper designs for their space capsules. They can draw elevations, cutaways, or aerial views depending on their skill.
4. Have them label their drawings, name their capsules, and list their materials.
5. Have them build their test articles using hard-boiled (or plastic) eggs for their stand-in Egg-stronauts.
6. If time allows, have the students drop their test articles when they have completed construction.
7. If time allows, students can then redesign their capsules based on test results. Make sure they make changes to their drawings, noting the revisions in their designs.
8. Have all students drop their Egg-stronauts and space capsules as a group. This is the fun part! Have one student keep track of capsules, the Egg-stronaut names, and whether they emerged unscathed or not!