

Engineering Explorations 5-6

Project Equipment (tools used throughout week or common household items)

REQUIRED:

- ☐ 1 pair of scissors (daily use)
- ☐ 1 box cutter (adult help recommended - to cut foam board or cardboard)
- ☐ 1 strong adhesive tape - (e.g. duct tape, packing tape, etc.)
- ☐ 1-2 other adhesive tapes - (any two types, e.g. masking tape, scotch tape, electric tape, painter's tape, etc.)
- ☐ 1 marker, black (permanent preferred)
- ☐ 1 pencil with eraser, sharpened
- ☐ 1 notebook (can be partial) (*substitutions: copy paper, scrap paper*)
- ☐ 2 hand towels (*substitutions: paper towels, old rags*)
- ☐ 1 medium-sized container to fill with water (e.g. tub, kitchen or bathroom sink)
- ☐ 1 plastic card (such as a library card, old credit card, rewards card, etc)
- ☐ 100 small items with some mass (e.g. pennies/coins, BBs, buttons, pebbles, legos--these will be getting wet)
- ☐ 10 balls (small sports balls such as racquetball, golf ball, tennis ball, etc., or any combination of these; basically, anything that rolls)
- ☐ A designated space for building/creating (can be a table, chair, garage, wall or some combination)

Activity Supplies (things that could be used-up or incorporated into a project)

REQUIRED:

- ☐ 20 balloons, 12" (size is important)
- ☐ 10 balloons, small/dart (3-5")
- ☐ 15 straws, bendy/flexible, standard size
- ☐ 2 sheets aluminum foil (10-12")
- ☐ 10+ craft sticks, any size/color (aka popsicle sticks) (*substitutions: wooden skewers, wooden coffee stirrers, etc.*)
- ☐ 15 rubber bands
- ☐ 10 plastic cups, clear, 9-12 oz, with a rim and should be pretty sturdy (*substitutions: clear plastic water bottles ~12-20oz*)
- ☐ 1 piece foam board, 12"x18", (*substitutions: yard-sale type signs, flat plastic that can be cut with scissors*)

OPTIONS FOR ENGINEERING PROJECTS & RUBE GOLDBERG (MAKE USE OF WHAT YOU CAN FIND)

- ☐ Track-building ideas:
 - ☐ Spatulas (*substitutions: anything with a groove, on which a small marble can roll*)
 - ☐ Hardcover books
 - ☐ Empty boxes from plastic wrap/aluminum foil/parchment/wax paper
 - ☐ Paper towel and toilet paper tubes (*substitutions: roll-up paper or thin cardboard & secure with tape*)
 - ☐ 1 foam insulation piece (3-6ft) (*substitutions: pool noodles*)

- ☐ Option 1: Pop a balloon
 - ☐ Push pins (*substitutions: thumbtacks, small nail*)
- ☐ Option 2: Raise a flag
 - ☐ Mini-flag (can make these out of pencils and paper or fabric at home, too)
 - ☐ String, 5ft (*substitutions: yarn, shoelaces, etc.*)
- ☐ Ideas for general items that can be used for Rube Goldberg:
 - ☐ Binder clips (any size)
 - ☐ Funnels (any size)
 - ☐ Pull-back toy cars, matchbox cars
 - ☐ Dominoes (*substitutions: lego pieces, chocolate candy bar, small food coloring bottles, etc.*)
 - ☐ Marbles (any size; grab some from board games, etc. make sure they are smaller than the sport-sized balls mentioned above)

Shopping List for some items that may not be easily available at your local store!

https://www.amazon.com/hz/wishlist/ls/2A124K21ZUWMV?ref_=wl_share

For an optimal experience, please be sure to gather/obtain all required items on this list. For unique items, please see amazon list (linked above). For the remaining items, only purchase what you don't already have at home or when you don't have a suitable substitute. Many of these items are likely to already be on hand at home, or are easily-obtainable. Shop wherever it is most safe and convenient for you and your family.