

# CURIOSITY AT HOME

## DESIGN A SOLUTION



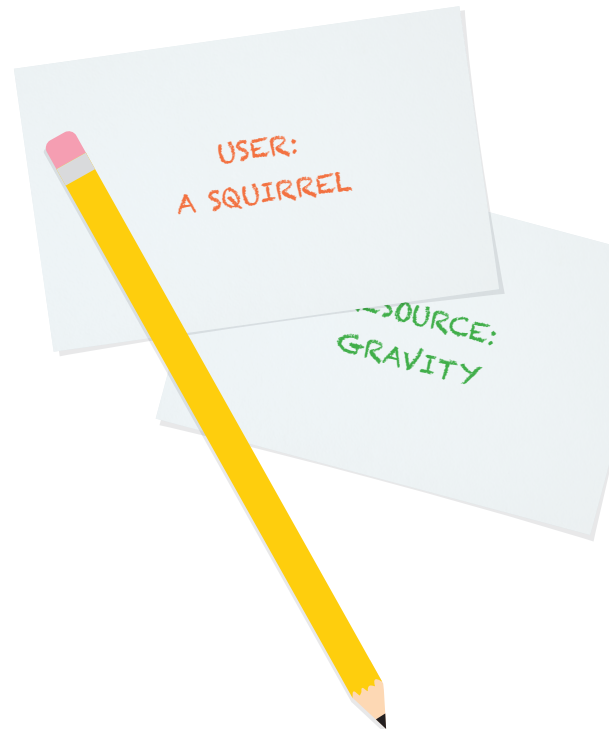
*Engineering is the field where people invent, design, and build things to solve problems, helping to make our communities better. In this activity, design new inventions that can solve problems, using natural and renewable resources.*

### MATERIALS

- Paper or index cards
- Paper or science notebook
- Pencil
- Recycled and craft materials (paper, tape, cardboard, plastic bottles, string, etc.)

### PROCEDURE

- Cut a piece of paper into 12 pieces, each the same size. (Or you could use index cards)
- Copy each of the following lines onto one of the small pieces of paper.
  1. User: a squirrel
  2. User: your family
  3. User: a school
  4. User: a doctor
  5. Resource: the sun
  6. Resource: wind
  7. Resource: gravity
  8. Resource: water
  9. Need: litter clean-up
  10. Need: growing food
  11. Need: communication device
  12. Need: control an invasive species
- Choose 3 cards at random, so you have 1 “User” card, 1 “Resource” card, and 1 “Need” card. These will determine who your invention is for, what resource you need to use, and what it will do. For example, you might use water to grow food for a doctor.
- **Design your invention:** in your science notebook, draw a sketch of an idea for your invention. Label the parts, and describe how it will work.
- **Create a prototype:** Using any supplies you have on hand, create a prototype of your invention! Tape, rubber bands, cardboard, sticks... anything you have can be used to build a model.



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### 3–5 GRADE EXPLORATION

Explore the following questions and write your observations in your science notebook.

- If you were to build a full-size version of this, what materials would you need?
- Without showing your design to them, challenge someone else to design an invention for the same user, resource and need as you did. Did they create the same design as you?
- What is another need that your invention could be used for?



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