

PLANT PROBLEM

THE PROBLEM

Your neighbor has paid you in advance to look after her house-full of plants — while she's on vacation. Now you've found out you're going to be gone for a week yourself, visiting your grandparents. How can you keep your commitment — and the money — while sitting on the beach at Grandma's?

Divide the class into groups of 3-4

WHAT YOU NEED (per group)

- 2-pint plastic container with lid (ice cream or sherbet works well)
- Potted plant (start with a 6- to 8-inch diameter plant)
- Scissors
- Pen with a point
- Cotton string
- Newspaper
- Water
- Paper and pencils

Have the girls examine the materials, discuss possibilities, and write up a design plan. Remind them that they know the problem, and they are working as a group to engineer a preliminary solution.

Discuss each group's design plan; ask other groups for input on the plan (Do they see any potential problems? Does the plan address the problem?)

Give the groups 10-15 minutes to build their design. When all groups have completed the task, ask them to compare the finished product with their design. Do they match? If not, ask them to re-design and re-build.

For younger girls, you may want to help them with these step by step directions for one possible design.

How to have plants water themselves:

1. Using the pen, poke a hole in the middle of the plastic container lid so the string can go through easily.
2. Fill the container with water, and soak about 18 inches of string in it.



3. Gently remove the plant from its pot, and set aside.
4. Coil the string in loops on the bottom of the empty plant pot. Run one end of the string through a hole in the middle of the pot's bottom so that it hangs down at least 8 inches.
5. Thread the hanging string through the top of the plastic lid, making sure the string does not lie on top of the lid. Fit the lid back onto the container. The string will eventually drop to the bottom.

6. Place your plant back into the pot, which should be resting on the lid. If the soil around the plant is not moist, water it from the top once, just enough to dampen it.



FURTHER EXPLORATION

Have one girl from each group take the re-potted plant home (or leave in the classroom as a project), and make written observations for one week to find out:

- Does the soil stay moist?
- Does the plant stay healthy?
- Is there enough water in the reservoir to last the entire week?

CONNECT TO ENGINEERING

Students may be surprised to learn that engineers work in agriculture, biosystems, hydroponics, and many "green" applications.

This activity is from Three Cheers for Engineers!
<http://www.eweek.org/site/News/Eweek/3Cheers.pdf>