MINI FLOWER GARDEN

Experiment

WHAT YOU NEED:

- ☐ An empty cardboard egg carton (not Styrofoam or plastic!)
- ☐ Acissors
- ☐ Plastic wrap
- ☐ Potting soil
- ☐ Water
- ☐ A marker
- ☐ Flower seeds (look for seeds that grow quickly)
- ☐ Sunny windowsill or other warm place
- ☐ 3 sheets of black construction paper
- ☐ Masking tape (or any tape that isn't clear)
- ☐ Worksheet chart

This project has TWO PARTS: In the first part you'll plant flower seeds in an egg carton and watch them sprout into plants. In the second part, you will experiment to see what happens if your plants don't get enough water or sunlight. Ask an adult to help you do this project!

WHAT YOU DO–PART 1:

1. Open the egg carton and carefully cut the top and bottom halves apart. Line the lid with a piece of plastic wrap to make a tray. Set the bottom half (the part with the 12 little sections) of the carton into the tray you just made.
2. Fill each section about 3/4 of the way full of potting soil.
3. Have an adult help you read the back of the package of your flower seeds to find out how deep to plant them. Poke three or four little holes in the soil in one section using your pinky finger. Make the holes as deep as the package says to plant the seeds. Put one seed into each hole, then cover the seeds with a little more soil.
4. Repeat step four in each section of your garden so that each one has 3-4 seeds planted.
5. Sprinkle some water into each section to water the seeds. Don't add too much – just make sure the soil looks a little bit wet.
6. Carefully move your whole garden to a warm place that gets a lot of sunlight, like a windowsill.
7. Look at the soil in each section every day. Do you see any signs that your seeds are growing? If the soil looks dry, add some water. If it still feels moist, check it again tomorrow.
8. Once all of the plants have grown at least 2 inches tall, you can begin Part 2 of the experiment.

WHAT YOU DO–PART 2:

1. Start this part of the experiment in the morning so that you can check on your plants after a whole day of sunlight. Use the worksheet to keep track of your garden during your experiments!

2. Draw a line down the middle of the carton (the short way) so that there are six sections on each side of the line. Draw a star on one side of the carton. The six sections between the star and the line are the ones you will experiment with. Let's call this the test half. The other half of the garden will be called the control half, because you will not change anything about how you take care of the plants in that half.

3. Draw a star on the worksheet in the same place as the one on your garden. This is a chart to help you keep track of the test half.

4. Choose three sections in the test half of your garden for a sunlight test. These plants will still get the same amount of water as the control plants, but they will not get any light!

5. Make a cone to cover the plants: roll up a sheet of black paper into a narrow cone shape and tape the edge. Put a piece of tape over the top to block more light. Make three cones and put them over the sections you chose to test. Make sure the cones completely cover the plants.

6. Mark the circles on your chart to show which sections will not get any light (cross out the sunlight and circle the water).

7. The other three sections of plants in the test half are for a water test. These plants will still get the same amount of sunlight as the control plants, but they will not get any water!

8. Mark the circles on your chart to show which sections you are not going to water.

9. Look at your chart and water all of the sections in the garden with an equal amount of water, except for the three from step 6 that do not get water.

10. Put your garden in a sunny spot and leave it there all day. After the sun sets, check on your plants. Carefully lift up the cones to check the sunless plants. If you see any changes, you can draw pictures on the worksheet. If nothing has changed, put the cones back on. In the morning, water them again, and leave them for another day. Continue to check and water them until you can see a difference between the plants. It might take several days, depending on how much sunlight they are getting and the type of flowers you are growing.

11. When you are finished with the experiment, make sure you take the cones off. The plants in the test half may need some extra-special care to get back to health!

12. When your plants outgrow the egg carton cups, ask an adult to help you cut the cups apart with scissors and plant each one in a pot or outside in a real garden, if you have one. Dig a hole just big enough to set the egg carton cup in. You can plant the whole cardboard cup in the soil right along with the plant; it will break down in the soil over time. Push dirt around the plant to hold it up and cover the hole. Make sure you continue to water your plants!

WHAT HAPPENED:

Part 1: For the first few days, you probably didn't see much going on in your flower garden. After about a week, some little green stems should have begun to sprout up out of the soil in some of the cups. This is the first sign that your flower plants are growing, even though they had already been growing for some time below the soil, like you saw in the last experiment. Keep watering your young plants and you will be amazed at how quickly they will grow! Soon little leaves should start to appear on the stems.

Part 2: What did you notice about the plants that didn't get any sunlight? Their stems and leaves probably started to look a little more yellow than the other plants. They might have wilted some or not grown as tall as the control plants. Even though these plants were getting the same amount of water as the other plants, they weren't getting any sunlight! Water isn't enough to keep a plant healthy. Why not? Well, plants use sunlight to create food. When they don't get any sunlight, they can't create food! Plants need water and food to survive!

What did you notice about the plants that received the same amount of sunlight as the control plants, but no water? Did the plants start to wilt without water, or do they just not grow as much as the others? At first you might not have noticed any difference at all, but once the soil dried out, the plants' roots started to run out of water and the plants probably started to wilt and maybe even wither or shrivel up a little bit. Even though these plants were still getting plenty of sunlight, they still couldn't make food, because water is one of the things required for plants to be able to make food!

FLOWER GARDEN WORKSHEET

1. Circle or cross out the water and sunlight pictures or show what you did to each section of your garden.

2. Draw a picture of what your plants looked like at the end of the experiment. You can print out a differend page for each oday of tyour experiment if you want ot show how the plants changed with time.