



## Water for Plants



*Essential Question: How can we get irrigation water to plants?*

### Overview

In the last lesson, you saw that rainfall does not always supply enough water for plants. When that happens, farmers must irrigate, or add water to their fields so crops can grow. Today, you will use your knowledge of soil and plants to design an irrigation system for a farm. The irrigation system should get water to all of the plants in the field and should minimize the amount of water wasted.

### Materials

Begin with the following, but feel free to ask your teacher for additional materials.

- stream table filled with soil
- irrigation kit

### Safety

Follow standard safety rules and school safety rules for laboratory activities.

### Procedure

Do the following for each sponge.

1. Put a book under one end of your soil tray so water will run down in one direction.
2. Using your irrigation kit, design a way to get water to the plants in the farm. Try to:
  - a. deliver equal amounts of water to all areas of the field
  - b. minimize runoff (water pooling at the edge of the field instead of in the soil)

### Analysis Questions

1. Draw a picture and write a paragraph to describe your irrigation system.
2. How would you adjust your irrigation system for different types of soil? (For example, compare a sand soil system to a clay soil system.)
3. How would you design your system differently if you knew your plants were spaced widely apart?
4. How would you design your system differently if you knew there was very little space between the plants growing on your farm?
5. Answer the essential question: *How can we get irrigation water to plants?*