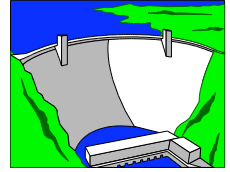


GETTING READY TO HOLD THE WATER BACK



Here are some suggestions on how to get started on the dam unit.

One to two weeks before you begin:

1. Gather the following supplies for this activity.
 - aluminum foil (4" x 7")
 - coffee stirrers (wooden – check local restaurant supply companies for these)
 - construction paper (4" x 14" and 3" x 4")
 - index cards (5" x 7")
 - masking tape (Some students will use it to go the distance of the container so make sure you give long enough pieces.)
 - modeling clay (non-drying)
 - paper clips (large)
 - poster board (4" x 7")
 - straws
 - wax paper (4" x 7")

The above materials are recommended for use during this engineering challenge. Please feel free to add to or delete from this list.

2. Gather these items, also. (Please see the picture walk in the testing section to help determine what containers are needed.)
 - Container with a handle – students will use this container to pour water into the measuring cup
 - Large plastic container to catch the water as the students test their dams
 - Large plastic container to hold the water the students will use during testing
 - Measuring cup (one cup)
 - Two to three containers to hold each dam during testing
 - Small size plastic storage containers – size – 13" x 7 3/8" x 4" (one per team) These are sold in most stores. If you prefer not to purchase these containers, you may use baby wipe containers or any other plastic rectangular container.
3. If you purchase the containers mentioned above, each one will need to have a space cut out of one end. (3" x 4") If you decide to use another container one end will need to be have a section cut out. The size of the materials above are based on the container mentioned, you may need to vary the sizes if you use another type of container.
4. Each team will need a container to store supplies and money. You may want to send a note to parents asking them to send in large plastic containers or shoe boxes.

5. The students will be using “money” during this unit. It takes about a week to duplicate, laminate, and cut out all the coins and dollar bills. (Please look in the *Store* section.) You will want to buy or make containers to hold change in the store.
6. There are price tags in the store section you may want to cut apart, mount on construction paper, and laminate.
7. Prepare a store window.
8. Have parent volunteers help you prepare the center ideas.
9. Ask a local hardware store if they will donate painters’ hats for the children to wear during the building process. (This really makes them feel like engineers!) Some companies do sell plastic construction hats for a reasonable amount.
10. Run off the Engineering Portfolio for each student. Place in a folder with prongs. (See *Engineering Portfolio* section.)

One to two days before you begin the unit:

1. Set up your classroom store.
2. Decide which children will be working together. (It is suggested students work in teams of two.)
3. Organize materials for the bulletin boards.

To begin the unit:

1. Familiarize the students with the different types of dams and the purpose for each one.
2. Read books about dams to the children or have them read books independently. (See the *Bibliography*.)
3. Before the students actually start building, the engineering portfolio needs to be reviewed with them. They need to do the Engineering Team Information and Engineering Worksheet One first. (See *Engineering Portfolio* section.)
4. You may want to have the students read some of the selections in the *Resource Booklet* section and complete some of the worksheets that are related to the readings.

This unit is designed to last approximately two to three weeks. The ideal amount of building time is 30 to 45 minutes each day. Take time to pick and choose the activities you feel will work best for your students and...

ELECTRIFY YOUR STUDENTS!

