

## **DAM BUILDING ACTIVITY (Gr. K-6)**

### **Materials:**

- Clear plastic shoeboxes (1-2 per group)
- Play sand
- Potting soil
- Pea gravel
- River pebbles
- Modeling clay or Play Dough
- Sticks
- Tootsie Roll pops (may tape twigs at stick ends to represent trees)
- Cardboard or plastic strips of varying widths, with some as wide as shoeboxes and some with ~1" overlap on each side.
- Small bucket of water (1 per group)
- Lots of small plastic containers for distributing building materials and dipping water
- Old towels & rags, newspaper, paper towels (to help contain & clean up the mess)



### **Procedures:**

Use the above materials to illustrate the parts of a dam, as well as proper and improper dam design, construction and maintenance practices. A few examples follow, but many variations are possible. After demonstrations, divide students into groups of 2-5 and let them build dams independently, with or without specific directions.

Sample Demonstrations:

#### *Foundation Problems*

1. Place gravel at bottom of shoebox.
2. Build a clay dam and place on gravel.
3. Pour water behind the dam to show seepage through the foundation. Discuss dam site characteristics, design and construction in relation to actual case studies, such as Wolf Creek Dam in Kentucky.
4. Use cardboard strips to stem the seepage and talk about cutoff walls.

#### *Trees on Dams*

1. Build a dam of solid clay or Play Dough or a combination of clay, pebbles & sand.
2. Insert the candy end of Tootsie Roll Pops into the clay. Explain that the candy end represents the root ball of a tree. (Make sure to place the Pops strategically, so their removal will cause seepage in the dam.) Pour water behind the dam.
3. Ask students to enact a storm by blowing as hard as they can on the dam until the "tree" blows over (let one of them pull out the Pop) and the dam begins to leak through the hole left by the root ball.
4. Explain why it's not a good idea to allow trees to grow on dams.

#### *Seepage & Piping*

Build a dam out of potting soil. Pour water behind. Poke a hole through the dam so the water comes through and watch the hole enlarge until the dam fails.