Build a Model Water System
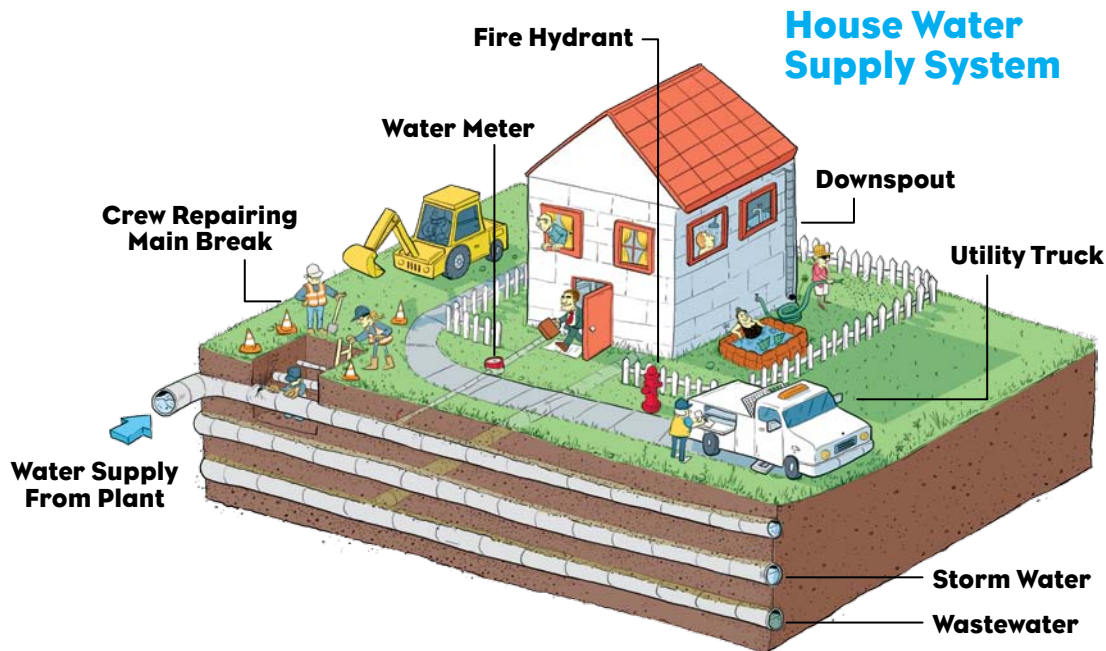
Guide your class through building a working model of a water system. Use the classroom poster for inspiration!

House Water Supply System

Labels: Fire Hydrant, Water Meter, Crew Repairing Main Break, Water Supply From Plant, Downspout, Utility Truck, Storm Water, Wastewater

Objective: Use what students have learned to build a model water system.

Materials: flat sheet of cardboard; cardboard boxes and tubes; four plastic basins; scissors; straws; tap water; books; paper; duct tape; Archimedes screw pump (see Lesson 2) or soap dispenser pump

Time required: 90 minutes

What to do:
1. Place a sheet of cardboard on two stacks of books, creating "aboveground" and "belowground" workspaces. Use cardboard boxes, tubes, a plastic basin, and paper to build a simple model of a town including:
   a. **Aboveground:** a reservoir, at least two buildings, a water treatment plant with two basins to hold "raw" and "clean" water, and a tall water tank.

   b. **Belowground:** aquifer (use a dishpan or large bowl). Underground and aboveground pipes will be added later.

2. Use scissors, straws, and electrical or duct tape to create a system of pipes that connect:
   a. The reservoir to the "raw" water area at the water treatment plant.

   b. The houses to the water tank. The straws coming from the water tank should come down to the underground pipes at a steep angle.

3. Poke small holes into the straws under each house to simulate a "tap."

4. Fill the "clean" water basin with tap water. (Advanced classes: Instead, build a simple water filter using gravel, sand, and a cotton ball. Filter the "raw" water as it flows down into the "clean" basin.)

5. Use your Archimedes screw pump to take water from the clean water basin up to the water tank. If your class didn't make a screw pump, use a soap dispenser pump. (Advanced classes: Invite students to build a pump that is powered by running water, wind, or a motor. Also, challenge them to create a second Archimedes screw pump that pulls water out of the aquifer or reservoir and into the water treatment plant.)

6. Observe how gravity presses down on the water in the water tank, pushing water through your model pipe system!