

**Grade Level:** K - 1

**Curriculum:** Explorations, Science, ADST

**Title of Lesson:** Cleaning Our Water

**Learning Goals/Objectives:**

- Observe objects and events in familiar contexts
- Ask questions about familiar objects and events
- Designs grow out of natural curiosity.
- Skills can be developed through play.

**Materials Needed:**

- 2-litre plastic bottle, empty and clean
- Utility knife
- Dirty water (make your own with stuff like coffee grounds, dirt, crunched-up old leaves, cooking oil, or tiny pieces of foam)
- Measuring cup
- Spoon
- Stopwatch or clock with a second hand
- Pencil and paper
- As many of the following filter materials as you can get: activated charcoal (available in the fish section at a pet store), gravel, sand (coarse and / or fine), cotton balls
- Coffee filter (A bandanna, old sock, napkin, or paper towel works too!)

**Activity Instructions: (Step by Step)**

- Before we use water, we need to make sure it is clean!
  - Cities have special buildings, called Water Treatment Plants, that clean the water we use for drinking, cooking, cleaning and washing
    - Water Treatment Plants use many different techniques for cleaning water, but the simplest is by using something called a Filter
      - A filter allows water to pass through, but dirt, leaves, and other things we wouldn't want in our water are not able to pass through it
        - We can make a filter of our own using some items that you likely have lying around your home!
- Visit and follow along with the activity here:
  - <https://kids.nationalgeographic.com/explore/books/how-things-work/water-wonders/>
  - Before we test our filter, we need to make some predictions!
    - A prediction is something that we think will happen

- When we make a prediction, we need to think about WHY we think it will happen.
- Predict what you think will happen when you pour your dirty water through your filter
  - Test out your filter!
  - What happened? Did your prediction come true?
- If you have enough supplies, try making a second filter
  - This time, change the order that you add materials to the container, or use some materials that you didn't use before
    - What do you think will happen with your new filter?
      - Do you think it will work faster than your last one? Why?
      - Do you think it will make the work cleaner? Why?
      - Which materials do you think work best as filters?
    - Test your new filter!
      - Were your predictions correct?
      - Did you notice anything else about your filter?