These science activity cards are designed to be printed double sided on 8.5 x 11 paper.

Water Filtration

YOU WILL NEED:

- Plastic funnels or plastic water bottles
- Coffee filters
- Rocks, sand, and gravel (varying sizes)
- Rubber bands
- Cups, water, dirt, and small debris

DIRECTIONS:

The goal is to filter the dirty water using the materials you have on hand.

1. The goal is to filter the dirty water using the materials you have on hand. Set up the filter by either cutting the bottom off of a water bottle or using a funnel. Using a rubber band secure a piece of coffee filter around the spot of the water bottle or funnel. This opening is where the water will filter through into another container.
2. Layer the filter materials. First, add the sand. Next, add small gravel. Then, add larger rocks or stones.
3. Time to filter the "dirty water." Add 1-2 tablespoons of dirt to clean water along with small pieces of debris like bits of twig and leaves. Hold the homemade funnel over another container, and slowly pour the dirty water through the filter.

   Does the homemade filter get the water clean? What happens if you change the order of materials in the filter?

What's Happening?

THE SCIENCE BEHIND WATER FILTRATION:

Water filtration is a method of cleaning water by passing it through a filter. Permeability is how easily a liquid can pass through a substance like the sand or rocks.

The rocks and sand perform an essential job: they help to clean our water! Sand, gravel, and rocks make good water filters because they form permeable layers. Water can pass slowly through these tiny spaces, and some of the dirt particles and debris get trapped.

As the dirt and particles get trapped in each layer the water is cleaned.

THINK ABOUT IT:

Thinking about what you've learned what other materials besides soil, rocks, and gravel might make a good water filtration system?

Write out other materials you think would make good filters.
Test your materials to compare with the soil, rock and gravel activity.