

## Home Quest #7

### Using Soil to Clean Water

Here's a fun experiment you can do with your family ~ Which do you think will clean the water the best? Soil? Sand? Pebbles?

#### You Will Need:

- Grape Kool-Aid (or any other very bright color Kool-Aid)
- Large container
- 3 paper/plastic/or Styrofoam cups
- A pencil
- 1 cupful each of soil, sand, and pebbles
- 4 glasses to collect the "runoff"
- Tape

#### What to Do:

Make the Kool-Aid (don't add sugar) in the large container and set aside. Poke a hole in the bottom of each cup with a pencil. Fill one cup with the soil, one cup with the sand, and one cup with the pebbles. Mark the cups with tape labels reading SOIL, SAND, and PEBBLES. Run some fresh water through the cups to remove material that may cloud the Kool-Aid.

Now hold a cup over the glass that matches it (SOIL to SOIL, etc) and pour the Kool-Aid in, letting it drip through the cup into the glass. Stop before the glass is full. Now pour the Kool-Aid into the second cup, over the second glass, and do the same thing with the third. Fill the fourth glass with Kool-Aid.

Wait several days to let the particles settle to the bottom of the glass. Compare the colors of the filtered water.

#### What happens?

Which glass has the lightest liquid? SOIL SAND PEBBLES

Which glass has the darkest liquid? SOIL SAND PEBBLES

## Why?

Chances are the Kool-Aid that went through the soil became the clearest or cleanest. This is actually how water from our houses gets cleaned: It drains into soil and, as it drips down through the layers of soil to lakes and rivers underground, the soil acts as a filter, cleaning the water.

The longer we can keep water on our own lots (i.e. from rainwater or garden hoses) the more our soil can filter the water so that it is cleaner when it runs off into our lakes (which it will eventually). If your yard is hilly, water will runoff faster than if it is flat. By adding plants to the hilly parts of your yard, the soil and plant roots will “grab” the water and hold it in your yard longer allowing your soil to clean it better before it runs into the lake. You can see from the Kool-Aid that flowed through the pebbles that water that runs over rocks (much like water that flows over streets and driveways) doesn't really get cleaned very much.

\*Experiment found in More Nature In Your Backyard by Susan S. Lang, illustrated by Sharon Lane Holm.