

Student Outreach

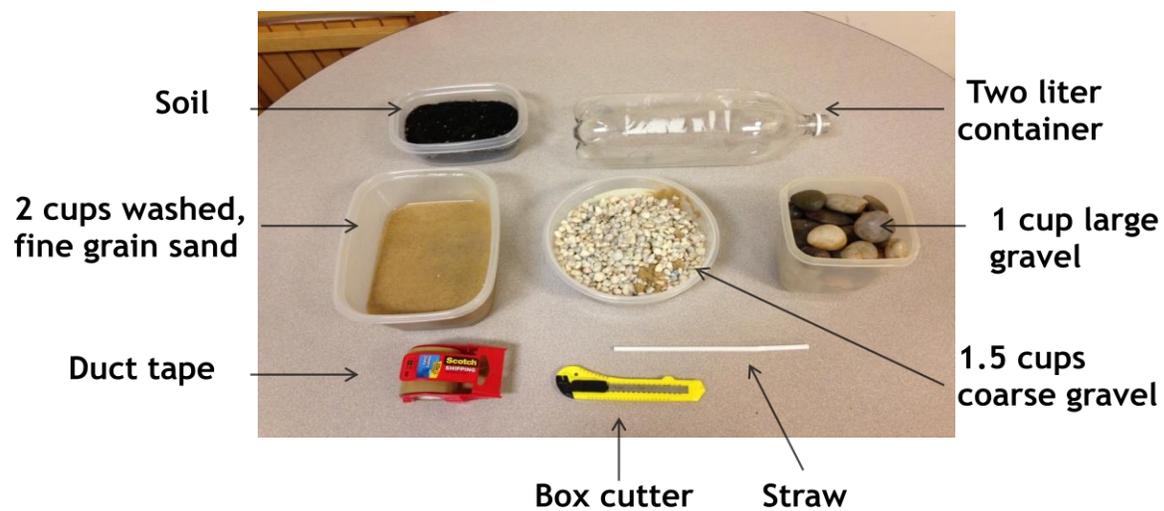
# BioSand Water Filter

Step -by-Step Instructions

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The **BioSand Filter** is a modified version of a traditional slow sand filter, and can be built on a smaller scale and operated intermittently. This has allowed the BioSand Filter to be suitable for households or small communities, since it can be produced almost anywhere in the world using materials that are readily available.

## MATERIALS



## STEP 1

- Using a box cutter, cut the two-liter bottle two inches from the top (fig.1).
- You should be left with just the bottom part of the bottle, which will be used for the filter (fig.2).

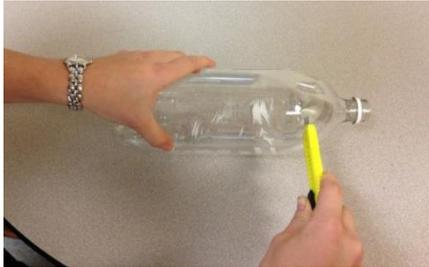


fig.1



fig.2

## STEP 2

- Measure the height of the straw (when bent) next to the two-liter bottle, and mark this spot with an X (fig.3).
- Using a box cutter, cut a hole on the X spot, but **make sure that the hole is no wider than the circumference of the straw** (approximately 1 cm.) (fig.4).



fig.3



fig.4

### STEP 3

- Thread the top of the straw through the hole, leaving only the top part out of the bottle (fig.5).

*To ensure that there is no leaking when the water is filtering, cover the area surrounding the hole with duct tape (fig.6).*



fig.5



fig.6

### STEP 4

- Place the large gravel at the bottom of the two-liter bottle (fig.7).



fig.7

## STEP 5

- Place the course gravel on top of the large gravel layer (fig.8).



fig.8

## STEP 6

- Pack down the fine grain sand on top of the coarse gravel, creating 3 separate layers of sediment (fig.9). Please note that the combined layers of sediment must be higher than the straw's exit point of the bottle.



fig. 9

## STEP 7

- Mix 1-2 tablespoons of soil into a large glass of clean water (fig.10).
- After mixing together soil and water, the water will now be “dirty” and represents contaminated water (fig.11).



fig. 10



fig. 11

## STEP 8

- Place an empty container under the spout (fig.12).
- *Slowly* pour the dirty water on the sand layer (fig.13).

*\*It may be necessary to take some breaks to allow water to filter and make room for the remaining dirty water.*

Watch as the dirty water passes through the BioSand Water Filter (fig. 14).



fig. 12



fig. 13



fig. 14

The BioSand Filter removes the contaminants from the water, and leaves you with clean water. Now you have a working version of the BioSand Filters we use to help people access clean water!

