A DROP IN THE BUCKET - Teacher Copy

Activity:

1. The 1,000 ml represents all water on Earth. Where is most of the water found on the planet?

   Hint: It is nearly 97% of Earth's water!

   > Label ocean - saltwater, 97% of all water & draw image of ocean
   > - 97%*1,000 = 970 ml
   > - How much left? How can you calculate?
   > - 3%*1,000 or 1,000-970 or other?
   > - Remaining water = 30 ml
   > - Remove 30 ml from 1,000 ml.
   > - Shake salt into water remaining in 1,000 ml container and label 'salt water'

2. The remaining 3% is the amount of fresh water on Earth. Where do you think most of the fresh water is found on Earth?

   Hint: 80% of fresh water on Earth is in this state of matter.

   > Label frozen, fresh water, 2.4% of all water & draw image.
   > - 80%*30 ml = 24 ml.
   > - How much left? How can you calculate?
   > - 20%*30 ml or 30 ml – 24 ml = 6 ml
   > - Remove 6 ml = non-frozen fresh water.
   > - Set aside remaining 24 ml and label as frozen fresh water.

3. Unfortunately, 75% of Earth's unfrozen fresh water is still inaccessible for human use! Where do you think this might be located?

   Hint: Take a breath, think deep, up high and look below the plants outside.

   > Label liquid, inaccessible fresh water, 0.6% of total water + image
   > - 75%*6 ml= 4.5 ml
   > - 95% of this water is too deep underground to easily access, in other living things, the soil and the atmosphere.
   > - How much left? How can you calculate?
   > - 25%*6ml or 6 ml – 4.5 ml = 1.5 ml (@ 0.6%) left represents Earth's unfrozen, fresh water flowing at any given time over Earth's surface – i.e., lakes, streams, human water systems.

4. Unfortunately, even most of this surface water – 98% - is not safe or unavailable for humans to use for drinking or growing food.

   Why do you think this might be?

   > Label liquid, potable fresh water, 0.003% of all water + image
   > - 98%*1.5 ml= 1.47 ml
   > - Some of this water is polluted or too salty but most of it is in large bodies of water humans have not yet found the capacity to take – 21% of this water is in Great Lakes & another 22% in Lake Biakal!
   > - How much left? How can you calculate?
   >
   > Use an pipette or tip of a pencil to remove 1 drop. Let the drop fall on the table, in a cup or on a plate. This represents the amount of water on Earth available for human needs = 0.003%

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