**Explore:** Use pie charts to communicate your current thinking about the proportions of water at different locations on Earth’s surface.

Salt versus Fresh water

Salt water

Fresh water



Sources of Salt water Sources of Fresh water

Key: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Key: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Explain**: Scientists have a relatively accurate idea of the relative proportions of water on Earth’s surface at various locations. Use what is known to determine the measurements for creating a model that represents what is currently known.

|  |  |  |
| --- | --- | --- |
| Sources | Percentage | If we use a 1000 mL graduated cylinder, then we would need \_\_\_\_\_\_\_ mL. |
| **Salt Water** | **97.4%** |  |
| Oceans | 96.5% |  |
| Other saline water  (Ex: Great Salt Lake, UT) | 0.9% |  |
| **Freshwater** | **2.6%** |  |
| Glaciers and ice caps | 1.7 |  |
| Groundwater | 0.8 |  |
| Permafrost | 0.75 |  |
| Lakes | 0.02 |  |
| Soil | 0.006 |  |
| Atmosphere | 0.0009 |  |
| Swamps | 0.0007 |  |
| Rivers | 0.00001 |  |

Source: <https://water.usgs.gov/edu/earthwherewater.html> (slightly modified)

**Explore**: Review your initial pie charts. EDIT these pie charts to more accurately represent the relative proportions of Earth’s water at different locations. (It’s okay if this seems messy. Editing can be that way sometimes.)

**Explain**: How could you create a 3D model that represents this data? Use the suggestions, discuss ideas with your group, and check in with your teacher at various points to check for accuracy.

Suggestions: A 1000 mL graduated cylinder filled with water could represent all the water on earth.

Begin by creating a model of just salt and fresh water.

Continue by creating the two salt water models. Drop a few drops of green food

coloring into the salt water sources. Label these graduated cylinders.

Continue by making the freshwater models. Approximate these volumes, but make sure

it is proportional to the accurate values. Label these graduated cylinders.

**Reflections/Ask Relevant Questions:**

1. Think about the relative proportions of freshwater. How does this data impact the way you think about the water wars? List any new questions you may have.
2. Think about the sources of freshwater in our state. If the relative proportions on all of earth is approximately 0.0277, then what does that mean for what is available for us to use?
3. How does this impact your way of thinking about the water wars?
4. How does this impact your way of thinking about your own water uses?