

THE STANDARD

Distribution of Water on Earth

Describe and graph the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.

 ANCHORING PHENOMENON

100 Cups of Earth's Water

Fill 100 small clear cups with water to stand for all the water on Earth. Then a guide sorts them. Ninety-seven cups get a pinch of salt and slide to the "ocean" side. Only 3 cups stay fresh, and 2 of those get a tiny ice cube for "glaciers," leaving almost nothing for the lakes and rivers we drink from. 5th graders stare at that lonely splash and start asking how the planet can be called a water world.

DRIVING QUESTION

"If Earth is covered in water, why is almost none of it water we can actually drink?"

 INVESTIGATIVE 1

Salt Water You Can't Drink

First, each group stirs salt into a cup of plain water until no more will dissolve, which shows the salt really is in there even when you can't see it. Do not taste that over-salted cup. For the taste comparison, use a separate cup with just a small pinch of salt (about a teaspoon per cup) so it tastes more like real seawater. Groups take a tiny taste of fresh water versus that lightly salted cup. The point: the ocean is 97 out of 100 cups, but the salt makes it useless for drinking, so the "tiny splash" of fresh water suddenly matters a lot more.

DRIVING QUESTION

"The ocean is enormous, so why can't we just drink from it?"

 INVESTIGATIVE 2

The Frozen Fresh Water

Groups measure how much liquid water a handful of ice cubes makes when it melts, recording the amount before and after. The cubes stand for glaciers and polar ice caps, where most of Earth's fresh water is locked up. This sharpens the anchor by showing that even the small fresh-water share is mostly frozen solid, so the part we can actually reach is tinier still.

DRIVING QUESTION

"If most fresh water is frozen, how much is left for us to use right now?"