

## 5-ESS2-2 Earth's Systems

Students who demonstrate understanding can:

- 5-ESS2-2. Describe and graph the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth. [Assessment Boundary: Assessment is limited to oceans, lakes, rivers, glaciers, ground water, and polar ice caps, and does not include the atmosphere.]**

The performance expectation above was developed using the following elements from the NRC document *A Framework for K-12 Science Education*:

### Science and Engineering Practices

#### Using Mathematics and Computational Thinking

Mathematical and computational thinking in 3–5 builds on K–2 experiences and progresses to extending quantitative measurements to a variety of physical properties and using computation and mathematics to analyze data and compare alternative design solutions.

- Describe and graph quantities such as area and volume to address scientific questions.

### Disciplinary Core Ideas

#### ESS2.C: The Roles of Water in Earth's Surface Processes

- Nearly all of Earth's available water is in the ocean. Most fresh water is in glaciers or underground; only a tiny fraction is in streams, lakes, wetlands, and the atmosphere.

### Crosscutting Concepts

#### Scale, Proportion, and Quantity

- Standard units are used to measure and describe physical quantities such as weight and volume.

## Observable features of the student performance by the end of the grade:

1	Representation
a	Students graph the given data (using standard units) about the amount of salt water and the amount of fresh water in each of the following reservoirs, as well as in all the reservoirs combined, to address a scientific question:
	i. Oceans.
	ii. Lakes.
	iii. Rivers.
	iv. Glaciers.
	v. Ground water.
	vi. Polar ice caps.
2	Mathematical/computational analysis
a	Students use the graphs of the relative amounts of total salt water and total fresh water in each of the reservoirs to describe that:
	i. The majority of water on Earth is found in the oceans.
	ii. Most of the Earth's fresh water is stored in glaciers or underground.
	iii. A small fraction of fresh water is found in lakes, rivers, wetlands, and the atmosphere.