

Bundle for the Grade 5 NGSS

Earth Materials and Systems

The Roles of Water in Earth's Surface Processes

Atmosphere: the air

Biosphere: living things, including humans

Geosphere: solid and molten rock, soil, and sediments

Hydrosphere: water and ice



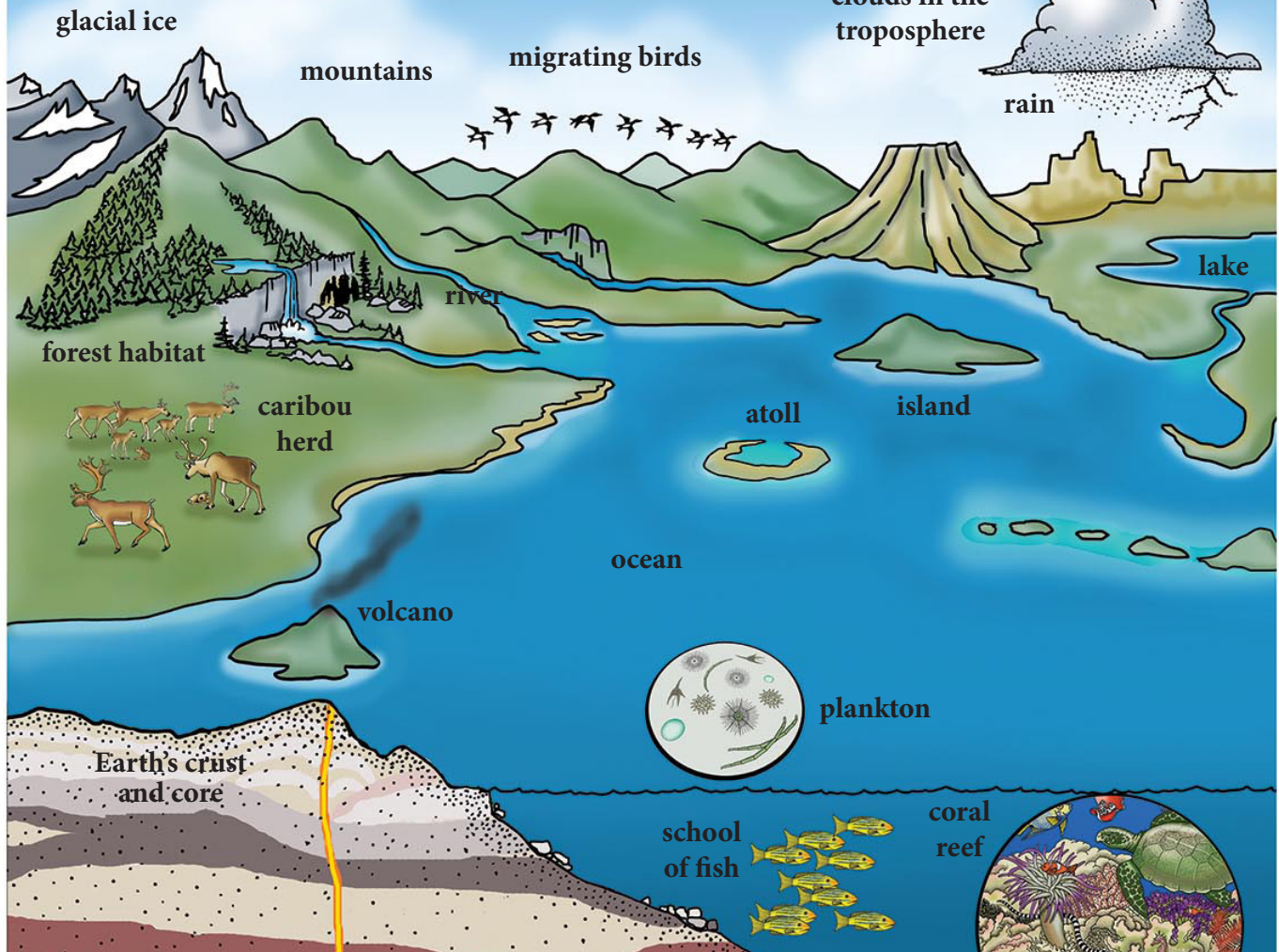
space shuttle
in the
thermosphere

meteors in the
mesosphere



plane in the
stratosphere

clouds in the
troposphere

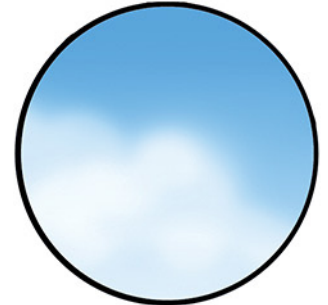


ESS2.A: Earth Materials and Systems

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

Grade 5

From Earth Systems



This bundle includes 20 age-appropriate resources about Earth's Systems including: Reading, Color Diagrams, Activities, Performance Tasks and Assessment (37 pages total). Copyright © 2019 Sheri Amsel • All rights reserved by author. Permission to copy for classroom use only. Electronic distribution limited to classroom use only.

Resources included in this Next Generation Science Standards Bundle include:

- Earth's Systems Primer for Educators with NGSS (2 pages)
- Rubric Building NGSS Resources (2 pages)
- 1) Earth's Systems Reading with Vocabulary Bank (2 pages)
- 2) Earth's Systems Reading Vocabulary Quiz and Answer Sheet (3 pages)
- 3) Earth's Systems Mini-Poster (color)
- 4) Earth's Systems Interacting - Matching Activity and Key (2 pages - color)
- 5) Earth's Systems - Matching Activity and Key (2 pages - color)
- 6) Earth's Systems - Matching - Desert Biome - Activity and Key (2 pages - black and white)
- 7) The Atmosphere Mini-Poster (color)
- 8) The Atmosphere Vocabulary Quiz and Key (2 pages - color)
- 9) Hydrosphere and the Water Cycle Mini-Poster (color)
- 10) Hydrosphere and the Water Cycle Color and Study Page (BW copy ready)
- 11) Hydrosphere and the Water Cycle Vocabulary Quiz and Answer Sheet (BW - 2 pages)
- 12) Geosphere and the Rock Cycle Mini-Poster (color)
- 13) Geosphere and the Rock Cycle Color and Study Page (BW copy ready)
- 14) Geosphere and the Rock Cycle Vocabulary Quiz and Answer Sheet (2 pages)
- 15) Geosphere and Landforms - Matching and Answer Sheet (2 pages - color)
- 16) The Biosphere Mini-Poster (color)
- 17) Biomes and the Biosphere Mini-Poster (color)
- 18) Illustrate a Biome Showing All 4 Earth's Systems - Performance Task
- 19) Biomes and Climate - Matching and Answer Key (2 pages - color)
- 20) Earth's Systems Multiple Choice Test and Answer Sheet (2 pages)

Earth's Systems - Educator's Primer

The goal of the **Earth's Systems** bundle is to address the NGSS for **Earth Materials and Systems and The Roles of Water in Earth's Surface Processes**. Through activities, investigations, model building and visual aids, students will demonstrate their understanding that:

- Earth has four major interacting systems called: geosphere, hydrosphere, atmosphere, and biosphere.
- These systems interact in multiple ways to affect Earth's surface materials and 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.

Essential Questions:

1. What are the Earth's four major systems?
2. What does each Earth's system include?
3. How do each of the Earth's systems interact with each other?
4. Where is all Earth's water located?
5. Where is Earth's fresh water located?

Goals for Enduring Understanding:

1. Understand that Earth has four major interacting systems called: geosphere, hydrosphere, atmosphere, and biosphere.
2. Understand that Earth's major systems include in each of their many forms: rock, water, air and living things.
3. Understand that Earth's major systems interact affecting Earth's surface materials and Earth's processes (e.g. atmospheric wind and clouds are affected by mountains and the ocean to affect the Earth's weather patterns)
4. Understand that most of Earth's water is in the ocean.
5. Understand that most of Earth's fresh water is in underground aquifers and frozen in glaciers, while only a small portion is in surface water (streams, lakes, wetlands) and atmospheric water (clouds).

NEXT GENERATION SCIENCE STANDARDS

Disciplinary Core Ideas

ESS2.A: Earth Materials and Systems

- Earth's major systems are the geosphere (solid and molten rock, soil, and sediments), the hydrosphere (water and ice), the atmosphere (air), and the biosphere (living things, including humans). These systems interact in multiple ways to affect Earth's surface materials and processes. The ocean supports a variety of ecosystems and organisms, shapes landforms, and influences climate. Winds and clouds in the atmosphere interact with the landforms to determine patterns of weather. (5-ESS2-1)

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. (5-ESS2-2)

Science and Engineering Practices

Developing and Using Models

Modeling in 3–5 builds on K–2 experiences and progresses to building and revising simple models and using models to represent events and design solutions.

Develop a model using an example to describe a scientific principle. (5-ESS2-1)

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. (5-ESS2-2)

Crosscutting Concepts

Scale, Proportion, and Quantity

- Standard units are used to measure and describe physical quantities such as weight and volume. (5-ESS2-2)

Systems and System Models

- A system can be described in terms of its components and their interactions. (5-ESS2-1)

Performance Expectations

Students who demonstrate understanding can:

5-ESS2-1. Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. *[Clarification Statement: Examples could include the influence of the ocean on ecosystems, landform shape, and climate; the influence of the atmosphere on landforms and ecosystems through weather and climate; and the influence of mountain ranges on winds and clouds in the atmosphere. The geosphere, hydrosphere, atmosphere, and biosphere are each a system.]* *[Assessment Boundary: Assessment is limited to the interactions of two systems at a time.]*

5-ESS2-2. Describe and graph the amounts and percentages of 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.]*

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