

EOT – TERM 2 – Revision
MCQ
Inspire Science
Grade – 5
General Stream

Module 1: Earth's Water System

Lesson 3: Effects of hydrosphere

6

3–5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

U3M1L3 page 42

Erosion and deposition

The natural bridges were formed by erosion.

Erosion is the process of weathered rock moving from one place to another. The process of eroded materials being dropped off in another place is **deposition**. Erosion and deposition work together to change the shape of the land.

- The looping curves in this river are called **meanders**.
- **Slow-moving water** deposits sediments **on the inside of a meander.**
- **Faster-moving water** erodes sediments **on the outside of meanders.**

Erosion and Deposition by Running Water

As water runs downhill, it can wash away soil and erode rock. The water, soil, and rocks will eventually flow into a larger body of water, such as a river. Rivers with fast-moving water tend to follow straight paths. Fast-moving water has more energy. It can wash away larger amounts of heavier sediment. Rivers with slow-moving water tend to follow curved paths. Slow-moving water has less energy. It carries smaller particles of sediment.



Module 1: Earth’s Water System

Lesson 3: Effects of hydrosphere

6	3–5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.		U3M1L3 page 42
---	--	--	----------------

Which of the following best defines erosion?

- a.

Very cold places with thick sheets of ice
- b.

A place that floods easily when river water rises
- c.

The process of eroded materials being dropped off in another place
- The process of weathered rock moving from one place to another

Which of the following statements about erosion is **not** correct?

- a.

Erosion might be caused by moving water
- b.

Erosion might be caused by the movement of glaciers
- Erosion might be caused by the sunlight
- d.

Erosion might be caused by rivers

Module 1: Earth's Water System

Lesson 3: Effects of hydrosphere

6	3–5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.		U3M1L3 page 42
---	--	--	----------------

7) Anna goes to the same beach with her family every summer. This year she noticed that the beach was smaller than last year. What might have caused the beach to change over the years?

- ☐ A volcano erupted and lava flowed over the beach.
- ☐ The cold weather caused the beach to change.
- ☒ Wind and water eroded the beach.
- ☐ Oxygen in the air reacted with the sand.

9) Fill in the blanks using the available answer choices.

The shape of different landforms is often changed by _____ water.
(Blank 1)

Blank 1 options

- ☒ flowing
- ☐ standing

Students in a science class are building models to demonstrate how Earth's systems interact.

Which model demonstrates how running water causes erosion and deposition?

- ☐ A Small pebbles are placed inside a bucket. Water is slowly poured into the bucket. The pebbles stay in place.
- ☒ B Water is poured down the side of a mound of dirt. A shallow trench forms where the water runs. Dirt from the top of the mound is carried to the bottom.
- ☐ C An aluminum tray is filled with sand. A fan is placed at one end of the tray. When the fan is turned on, it blows the sand from one side of the tray to the other.
- ☐ D A teaspoon of sand is added to a glass of water. The water is stirred until it becomes cloudy.

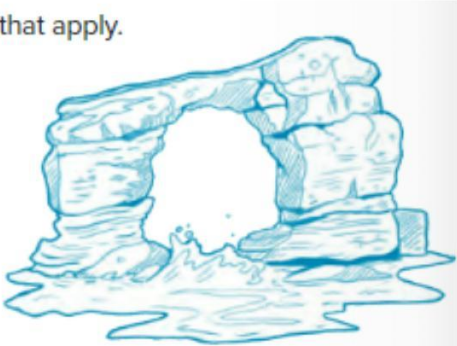
Module 1: Earth's Water System

Lesson 3: Effects of hydrosphere

6	3–5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.		U3M1L3 page 42
---	--	--	----------------

1. How is erosion an effect of the hydrosphere? Circle all that apply.

- ☒ Erosion can be caused by moving water.
- ☒ Erosion can be caused by precipitation.
- ☒ The movement of glaciers causes erosion.
- ☐ D. The hydrosphere contains all of the land on Earth.



2. How does erosion shape the land?

- ☐ A. Earth's surface is changed by living things.
- ☐ B. Erosion does not change the shape of the land.
- ☐ C. Erosion happens only in the winter.
- ☒ Erosion carries the sediment and rock to another location, which changes the shape of the land.

3. The looping curves in this river is called

- ☐ A delta
- ☒ B alluvial fan
- ☒ meanders
- ☐ D floodplains



4. Which of the following is **NOT** a property of fast-moving rivers?

- ☐ A follow straight path
- ☐ B has more energy
- ☐ C carries heavier sediments
- ☒ D follow curved path

Which of the following can be explained by erosion and deposition?

☒	rocks from mountains moved to the beach
2	the change of seawater temperature over the summer
3	sand temperature changes at night
4	seawater color changes at night

Module 1: Earth's Water System

Lesson 3: Effects of hydrosphere

6	3–5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.		U3M1L3 page 42
---	--	--	----------------

Can ocean waves change the rocks along a coastline?

☒	Yes. Pounding waves break rocks into smaller pieces.
☐	Yes. Pounding waves glue smaller rocks together.
☐	No. Waves are too weak to change rocks.
☐	Maybe. Scientists are not sure.

5-What happens when erosion and deposition work together?



- A. New Mountains are formed
- B. The climate changes overtime
- C. Metal pieces become rusty
- ☒ They change the Earth's surface

Ahmed visits the beach every summer with his family. Last summer he noticed that a big rock that he always sees has become slightly smaller. Which of the following best explains why the rock became smaller?

☒	wind and water eroded the rock
☐	nitrogen in the air reacted with the rock
☐	foggy weather caused the rock to become smaller
☐	sun heated the rock which caused the rock to become smaller

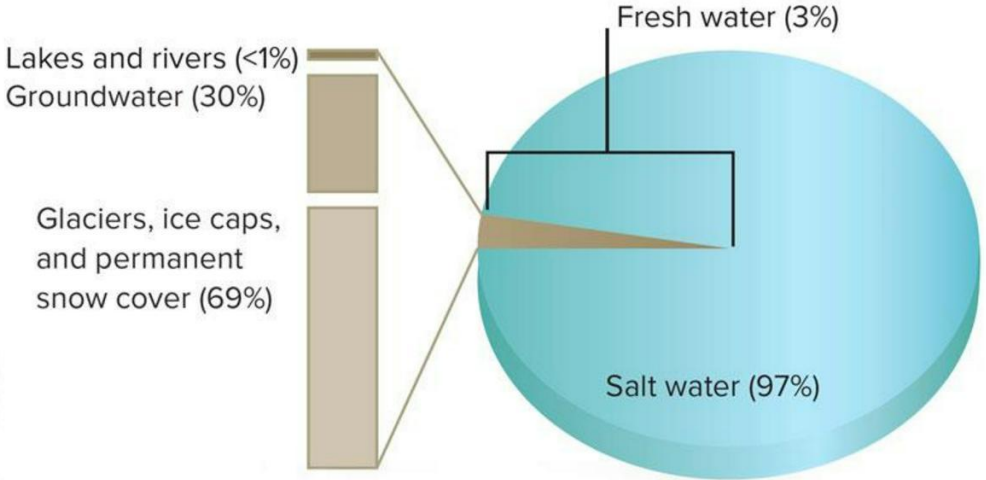
Module 1: Earth's Water System

Lesson 1: Water Distribution on Earth

9	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.		U3M1L1 page 12
10	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.		U3M1L1 page 12

The water found on Earth makes up the hydrosphere. About 97 percent of Earth's surface water is salt water found in oceans. We cannot drink salt water or use it to grow crops. For those activities, we need fresh water.

Only about 3 percent of Earth's water is fresh water. Most of this fresh water is frozen in the form of permanent snow cover, glaciers, and ice caps. A **glacier** is a thick sheet of ice. A giant **ice cap** covers Antarctica—the continent at the South Pole. This frozen water accounts for about 69 percent of Earth's fresh water. Another 30 percent is groundwater. **Groundwater** is water stored in the cracks and spaces between particles of soil and underground rocks. Less than 1 percent is running water, such as rivers, and standing water, such as lakes. A tiny bit of Earth's water is found in the atmosphere as water vapor.



Module 1: Earth’s Water System

Lesson 1: Water Distribution on Earth

10	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.		U3M1L1 page 12
----	--	--	----------------

Less than 1 percent of Earth’s freshwater is readily available for human and animal use. Where is the majority of the remaining freshwater?

- In ice caps and glaciers
- b.

In the atmosphere
- c.

In the oceans
- d.

In lakes and rivers

What can you infer about the percentage pf ground ice and permafrost if the table below shows all sources of fresh water (100%)?

Source	Percentage (%)
Ground Ice and Permafrost	?
Lakes and Rivers	21.4
Groundwater	3.8
Other	5.8

Fresh water source percentages

- a.

The percentage of ground ice and permafrost is the same as groundwater
- The percentage of ground ice and permafrost is greater than any other source
- c.

The percentage of ground ice and permafrost is less than any other source
- d.

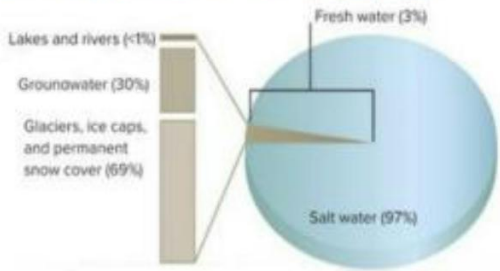
The percentage of ground ice and permafrost is the same as lakes and rivers

Module 1: Earth's Water System

Lesson 1: Water Distribution on Earth

10	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.		U3M1L1 page 12
----	--	--	----------------

Based on the pie graph below, what can you infer about water on Earth?



a. Freshwater is abundant on Earth, while saltwater is limited

b. Saltwater is abundant on Earth, while freshwater is limited

c. There is an equal amount of saltwater and freshwater on Earth

d. Freshwater is located mostly in lakes and rivers

In the image below, all of earth's liquid and solid water make up the



a. Biosphere

b. Geosphere

c. Atmosphere

d. Hydrosphere

Module 1: Earth's Water System

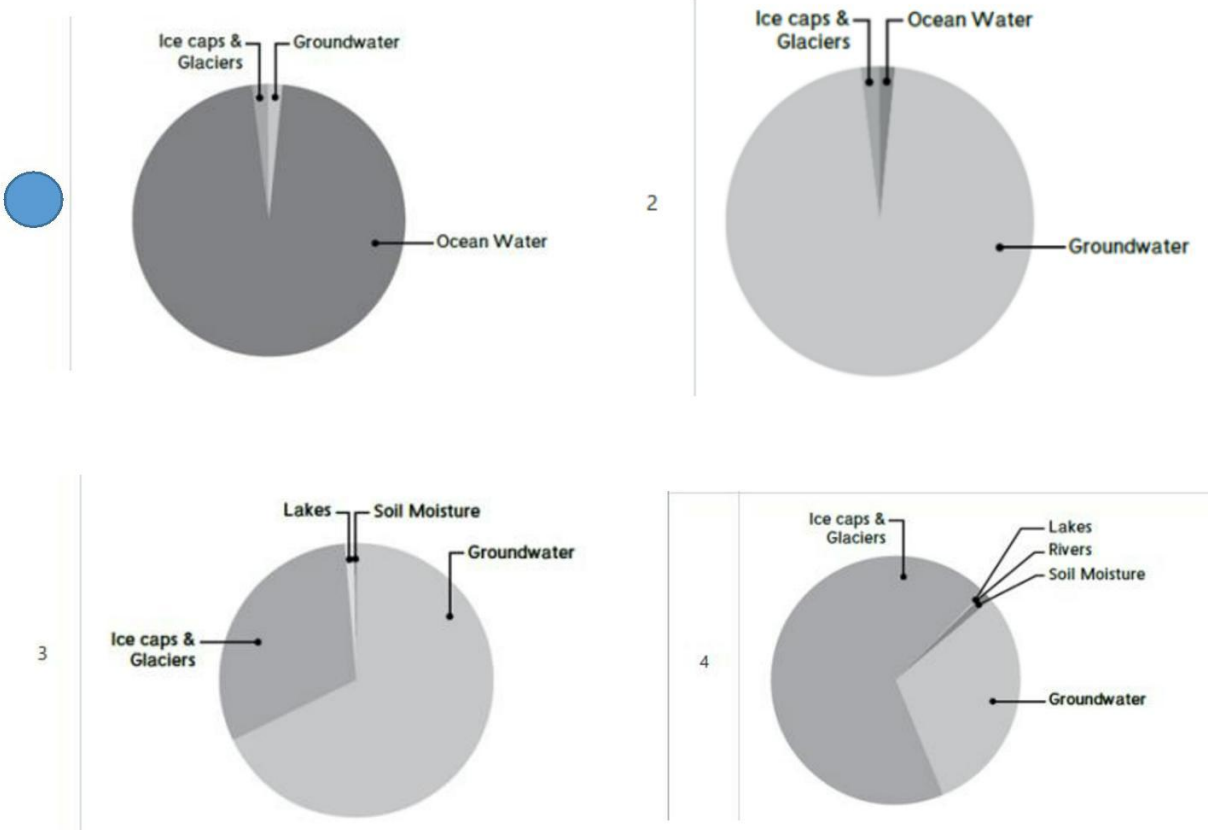
Lesson 1: Water Distribution on Earth

10	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.		U3M1L1 page 12
----	--	--	----------------

Which of the following water resources contains the largest amount of fresh water on earth?

- | | |
|--|----------|
| 1 | rivers |
| 2 | oceans |
| 3 | streams |
|  | ice caps |

Reem has four graphs showing water distribution on Earth. Which of Reem's graphs below best represents water distribution on Earth?



Module 1: Earth's Water System

Lesson 1: Water Distribution on Earth

10	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.		U3M1L1 page 12
----	--	--	----------------

2) Less than 1 percent of Earth's freshwater is readily available for human and animal use. Where is the majority of the remaining freshwater located?

- ☒ in ice caps and glaciers
- ☐ in the atmosphere
- ☐ in the oceans
- ☐ in lakes and rivers

3) Fill in the blanks using the available answer choices.

Lakes and rivers are part of the _____ .
(Blank 1)

Blank 1 options

- ☒ hydrosphere
- ☐ geosphere

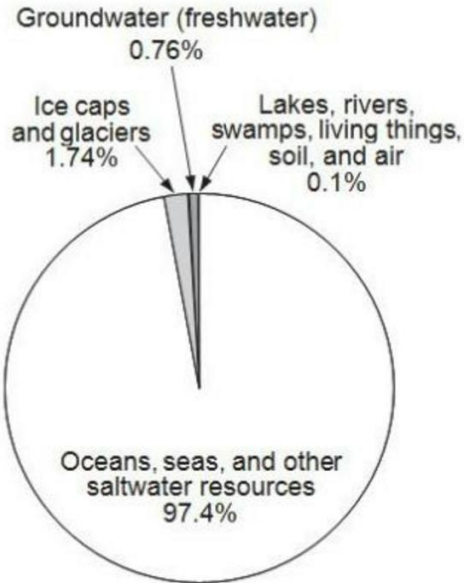
6) Fill in the blanks using the available answer choices.

Around 97 percent of the water on Earth's surface is _____ water.
(Blank 1)

Blank 1 options

- ☒ salt
- ☐ fresh

4) Distribution of Water on Earth



Based on the graph above, what can you conclude about the water on Earth?

- ☒ 97.4 percent of the water on Earth is saltwater
- ☐ 10 percent of the water on Earth is freshwater
- ☐ 55 percent of the water on Earth is saltwater
- ☐ 97.4 percent of the water on Earth is freshwater

Module 1: Earth's Water System

Lesson 1: Water Distribution on Earth

10	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.		U3M1L1 page 12
----	--	--	----------------

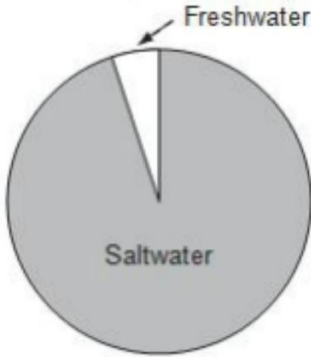
5) Freshwater Source Percentages

Source	Percentage (%)
Ground Ice and Permafrost	?
Lakes and Rivers	21.4
Groundwater	3.8
Other	5.8

Based on the table, what can you conclude about the percentage of ground ice and permafrost?

- ☐ The percentage of ground ice and permafrost is the same as groundwater.
- ☒ The percentage of ground ice and permafrost is greater than any other source.
- ☐ The percentage of ground ice and permafrost is less than any other source.
- ☐ The percentage of ground ice and permafrost is the same as lakes and rivers.

7) What can you infer about water on Earth based on the pie graph?



- ☐ Freshwater is abundant on Earth, while saltwater is limited.
- ☒ Saltwater is abundant on Earth, while freshwater is limited.
- ☐ There is an equal amount of saltwater and freshwater on Earth.
- ☐ Freshwater is located mostly in ice caps and glaciers.

8) A reservoir is an artificial lake that is built to _____ water for a later time.

Correct Answer

store

Module 1: Earth’s Water System

Lesson 1: Water Distribution on Earth

10	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.		U3M1L1 page 12
----	--	--	----------------

9) Identify the statement that best describes where Earth's freshwater can be found.

- ☒ Most of the freshwater is trapped in glaciers and ice caps.
- ☐ Earth's freshwater is spread out equally over ice, groundwater, and surface water.
- ☐ Most of the freshwater on Earth is found underground. The rest is stored as surface water.
- ☐ Earth's freshwater is found mostly in rivers and streams. Very little is found in glaciers or ice caps.

Module 1: Earth’s Water System

Lesson 3: Effects of hydrosphere

12	3–5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.		U3M1L3 page 45
----	--	--	----------------

Floods

Water runs over the ground in streams and rivers. Sometimes, water enters a river faster than the river can carry it away. When water collects on land that is normally dry, it is called a flood. Floods occur when a body of water overflows banks or beaches. A flood may also occur during a heavy rainfall. Natural wetlands can soak up water and reduce the chances of a flood. Draining wetlands or cutting down plants along a riverbank may make floods more likely.

Floodwaters carry and deposit sediments over the land. A floodplain is a place that floods easily when river water rises. Floods can cause damage by carrying mud into homes and streets. However, floods can also have a positive effect on natural systems. After a flood, new soil deposits on the land. The nutrients in this soil help plants grow.

Hurricanes and Storm Surges

A hurricane is a very large, swirling storm that forms on the surface of tropical oceans. Strong winds, walls of clouds, and pounding rains are associated with these storms. When a hurricane moves toward a coast, winds and waves can force large amounts of water onshore. This event is called a storm surge. Flooding associated with storm surges and heavy rains can be severe.

Module 1: Earth’s Water System

Lesson 3: Effects of hydrosphere

12	3–5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.		U3M1L3 page 45
----	--	--	----------------

3) Fill in the blanks using the available answer choices.

A _____ can be caused by winds and waves from a hurricane forcing water
(Blank 1)
onshore.

Blank 1 options

- floodplain
- storm surge

16) Fill in the blanks using the available answer choices.

By definition a storm surge can occur when a _____ causes large waves in
(Blank 1)
the ocean.

Blank 1 options

- hurricane
- tornado



The picture above shows a flood. How does a flood change the land?

1	Floods have no effect on the land.
☒	Floods deposit sediments and enrich the soil.
3	Floods only move animals.
4	Floods only affect the nearby aquatic life.

Module 1: Earth's Water System
Lesson 3: Effects of Hydrosphere

12	3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.		U3M1L3 page 45
----	--	--	----------------

1. The process of weathered rock moving from one place to another.

☐ A  Hydrosphere

☐ B  Hurricane

☐ C  Glacier

☒  Erosion

2. The process of eroded materials being dropped off in another place.

☐ A  Weathering

☐ B  storm surge

☐ C  Erosion

☒  Deposition

3. A place that floods easily when river water rises.

☐ A  Glacier

☐ B  Weathering

☒  Floodplain

☐ D  Erosion

7. When water collects on land that is normally dry.

☐ A  Weathering

☐ B  Glacier

☒  Flood

☐ D  Erosion

8. It is a very large, swirling storms that forms on the surface of tropical ocean

☐ A  storm surge

☐ B  Hydrosphere

☐ C  Deposition

☒  Hurricane

9. when a hurricane moves towards a coast, winds and waves can force large amount of water onshore

☐ A  Floodplain

☒  storm surge

☐ C  Erosion

☐ D  Weathering

4. Which of the following is **NOT** a cause of flood?

- ☒ natural wetlands
- ☐ B cutting down plants along a river bank
- ☐ C draining wetlands
- ☐ D during a heavy rainfall

8) Which evidence could indicate that a flood has happened in an area?

- ☐ A new mountain has formed.
- ☐ The sky is cloudy.
- ☐ A palm tree is charred black.
- ☒ Soil and rocks are on the road and sidewalks.

Module 1: Earth Water System

Lesson 2: Human Impact on water resources

3

3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

U3M1L2 page 26

Humans Affect Water

Page : 26

People affect the environment every day. Sometimes these effects are negative and can harm the environment, such as pollution. Pollution is any harmful substance that affects Earth's resources.

Heavy rains can wash fertilizers used on farms and lawns into lakes, rivers, and streams. These fertilizers can negatively impact water quality and cause toxic kinds of algae to grow. This can result in something called an **algal bloom**, a sometimes harmful increase in the amount of algae found in water. Oil spills are another cause of water pollution. In 2010, the worst oil spill in United States history occurred when an oil rig in the Gulf of Mexico exploded, releasing 4.9 million barrels of oil into the gulf. That amount of oil could fill over 300 Olympic-sized pools!

Even though some human activities harm natural resources, there are many people who work hard to protect them. In 1974, the United States government passed a law to help protect our water. The Safe Drinking Water Act protects drinking water and water resources. Farmers are now using safer, more natural ways of controlling pests and providing nutrients to plants.



The green water is evidence of an algal bloom. Algal blooms can be harmful.



Zebra mussels can filter feed. They eat the good algae but release the organisms that contribute to the algal bloom back into the water intact.

What will most likely happen if lake water becomes polluted by humans?

- A. Animals in the lake will die.
- B. There will be more fish in the lake.
- C. The pollution will not hurt the plants or animals in the water.
- D. It will change the soil around the lake into pebbles.



Delta

Rivers eventually flow into larger bodies of water, such as a lake or oceans. Since the water is no longer flowing downhill, it slows down. The sediment carried by the water is deposited on the bottom of the lake. Over time, this sediment builds up into a landform called a delta.



- When water that is carrying sediment enters a larger body of water, the sediment is dropped, forming a **delta**.

Alluvial fan

Rivers also deposit sediment when they flow out of a steep, narrow canyon. Here, the stream becomes wider and shallower. The water slows down as it spreads out. Sediment is deposited in a landform called an alluvial fan.



- When a rushing river runs out of a narrow canyon, it slows down and becomes shallower.
- Sediment is dropped causing an alluvial fan to form

Module 1: Earth’s Water System

Lesson 3: Effects of Hydrosphere

14	3–5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.		U3M1L3 page 43
----	--	--	----------------

2- What happens when a stream slows down?

- A. The stream picks up larger particles.
- B. The stream has more energy for erosion.
- C. The stream picks up more sediment.
- ☒ The stream deposits sediment.

.....is formed when a river flows into a larger body of water.

- A floodplain
- B storm surge
- ☒ C delta
- D alluvial fan

.....is formed when a river runs out of a canyon.

- A floodplain
- B storm surge
- C delta
- ☒ D alluvial fan

Module 1: Earth’s Water System

Lesson 1: Water Distribution on Earth

16	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.		U3M1L1 page 13
----	--	--	----------------

Groundwater When water seeps into soil, it enters groundwater aquifers, or underground layers of rock or soil that water can pass through. As water flows through an aquifer, it eventually reaches a layer of rock that it cannot move through. Fresh water builds up on top of this rock. It can be reached by drilling or digging into the ground and pumping the water up through a well.

Running Water Many cities and towns are built next to sources of running water, such as streams or rivers. Thousands of fresh water rivers cross Earth’s surface. Running water provides a source of fresh water for homes, farms, and businesses.

Standing Water Bodies of standing fresh water, such as lakes and reservoirs, are also sources of usable fresh water. A reservoir is an artificial lake built for storage of water. Reservoirs are usually made by building a dam on a river. Water is stored behind the dam and released when needed. Storage is the process of water being stored on Earth’s surface, in the ground, or as a water feature.

Module 1: Earth’s Water System

Lesson 1: Water Distribution on Earth

16	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.		U3M1L1 page 13
----	--	--	----------------

Which of the following defines fresh water?

1	Water that contains a large amount of salt.
2	Water that contains a large number of bacteria.
☒	Water that is suitable for drinking.
4	Water that is heavily polluted.

Which of the following methods can be used to **conserve** water in an ecosystem?

☒	building dams and reservoirs to store water
2	allowing water to run off into nearby oceans
3	planting trees that use up a lot of water
4	adding chemicals to the water to make it less acidic

1) Choose the answer that **best** explains one reason why conservation of freshwater is important.

- ☐ Freshwater should be conserved because it is limited to Earth's groundwater.
- ☐ Freshwater should be conserved because it can be found in large quantities on Earth.
- ☐ Freshwater should be conserved because it is limited to Earth's oceans.
- ☒ Freshwater should be conserved because it is the only water that can be consumed by humans.

4) Which best explains why it is important for humans to conserve freshwater?

- ☐ Earth’s water supply is shrinking.
- ☐ Earth’s water supply is growing larger.
- ☐ Once we use all of Earth’s freshwater, it is gone forever.
- ☒ Only a small fraction of Earth’s water is freshwater, and everyone needs it.

Module 1: Earth's Water System

Lesson 1: Water Distribution on Earth

16	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.	U3M1L1 page 13
----	--	----------------

5) Which are sources of freshwater. Select **all** that apply.

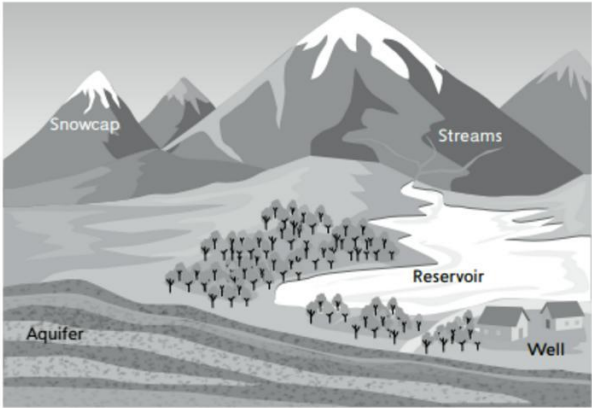
- ☒ rivers
- ☐ oceans
- ☒ aquifers
- ☒ reservoirs

A student in the class researches a model of a new well that would provide more groundwater for drinking. The new well would be able to dig through layers of rock that were previously too hard to drill through.

Which of Earth's systems interact within the model of the well?

- ☐ (A) atmosphere and biosphere
- ☐ (B) atmosphere and geosphere
- ☐ (C) hydrosphere and biosphere
- ☒ (D) hydrosphere and geosphere

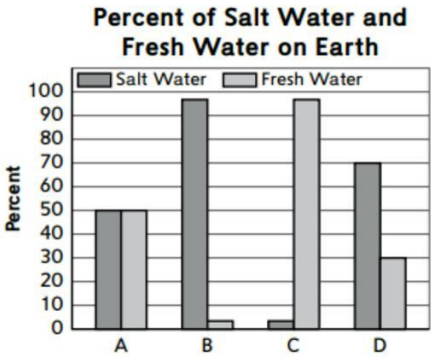
A group of students have been studying the hydrosphere. They wanted to know more about the limited supply of Earth's fresh water, so their teacher showed them the following model.



What conclusion can the students make about Earth's fresh water supply from this model?

- ☐ (A) Streams are the only source of fresh water for reservoirs.
- ☐ (B) Most well water evaporates and returns to the atmosphere as water vapor.
- ☒ (C) There are three main sources of fresh water: groundwater, running water, and standing water.
- ☐ (D) The snowcaps are not considered a source of fresh water.

Fresh water makes up only 2.5% of Earth's water supply. The bar graph below represents the amount of salt water compared to the amount of fresh water on Earth.



What conclusion can be made about the importance of conserving fresh water from this graph?

- ☒ (A) It is necessary to conserve all sources of fresh water because there is very little in comparison to salt water.
- ☐ (B) It is necessary to primarily conserve the ice caps because they are the largest supplier of fresh water.
- ☐ (C) Most of the Earth is made up of water, so it is not necessary to conserve fresh water.
- ☐ (D) There are multiple sources of fresh water, so it is not necessary to conserve the supply.

EOT – TERM 2 – Revision

FRQ – Writing

Inspire Science

Grade – 5

General Stream

Module 1: Earth Water System

Lesson 1: Water Distribution on Earth

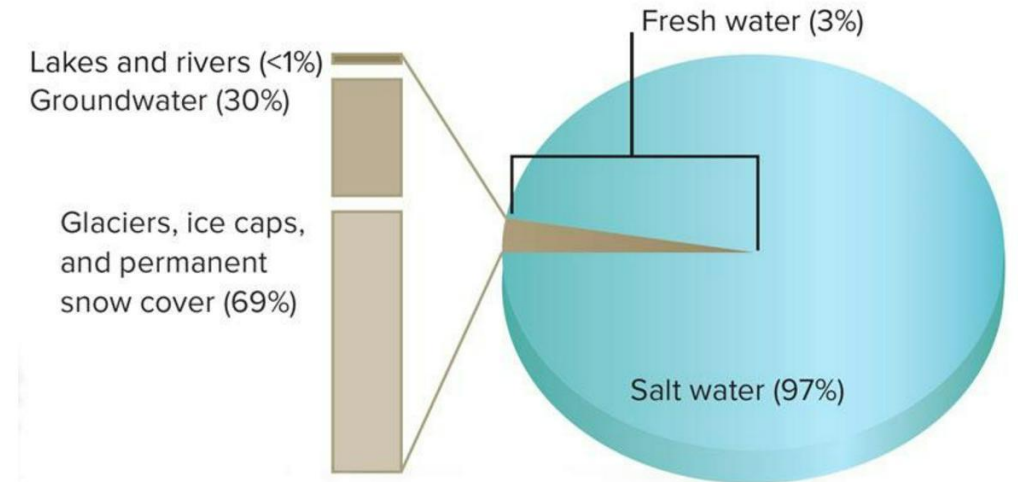
1

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.

U3M1L1 page 12

The water found on Earth makes up the hydrosphere. About 97 percent of Earth's surface water is salt water found in oceans. We cannot drink salt water or use it to grow crops. For those activities, we need fresh water.

Only about 3 percent of Earth's water is fresh water. Most of this fresh water is frozen in the form of permanent snow cover, glaciers, and ice caps. A glacier is a thick sheet of ice. A giant ice cap covers Antarctica—the continent at the South Pole. This frozen water accounts for about 69 percent of Earth's fresh water. Another 30 percent is groundwater. Groundwater is water stored in the cracks and spaces between particles of soil and underground rocks. Less than 1 percent is running water, such as rivers, and standing water, such as lakes. A tiny bit of Earth's water is found in the atmosphere as water vapor.

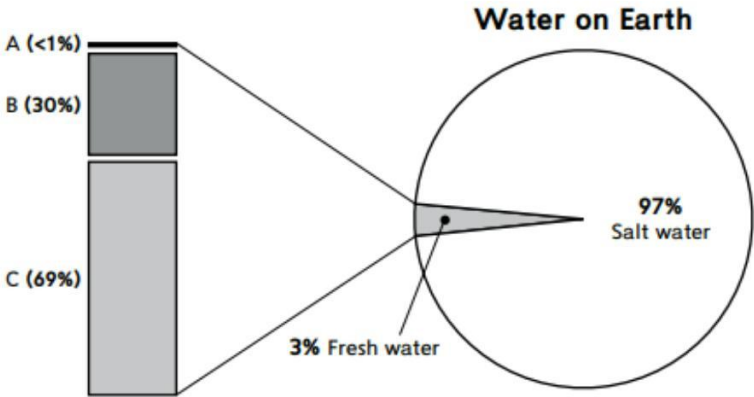


Module 1: Earth Water System

Lesson 1: Water Distribution on Earth

1	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.		U3M1L1 page 12
---	--	--	----------------

The circle graph represents the total amount of water on Earth. The gray bars to the left show the types of water that make up Earth's fresh water.



Complete the graph by assigning the appropriate labels to A, B, and C from the following options: "Frozen Water"; "Lakes and Rivers"; and "Groundwater."

A. Lakes and Rivers, B. Groundwater, C. Frozen Water

Identify the types of fresh water that can be used directly by humans. Based on the graph, approximately what percentage of fresh water does this make up?

Lakes, rivers, and groundwater are types of fresh water that can be used by humans. Based on the graph, approximately 31% of fresh water can be used by humans

Module 1: Earth Water System

Lesson 1: Water Distribution on Earth

- Look at the image. Which Earth system is shown in the above image? Explain.

Hydrosphere. The water found on Earth makes up the hydrosphere.

- What are the two types of water found on Earth?

Salt water (97%) and Fresh water (3%)

- Why can't we drink salt water or use it to grow crops?

We can't drink salt water or use it to grow crops because it is not suitable for human consumption or plant growth.

- Why do we need fresh water?

We need fresh water for drinking and growing crops.

- Where do you find the most fresh water?

Most of the fresh water is frozen in the form of permanent snow cover, glaciers, and ice caps. About 69 percent of Earth's fresh water is frozen.

- How is water found in the atmosphere?

Water vapor

Fill in the blanks with the keywords

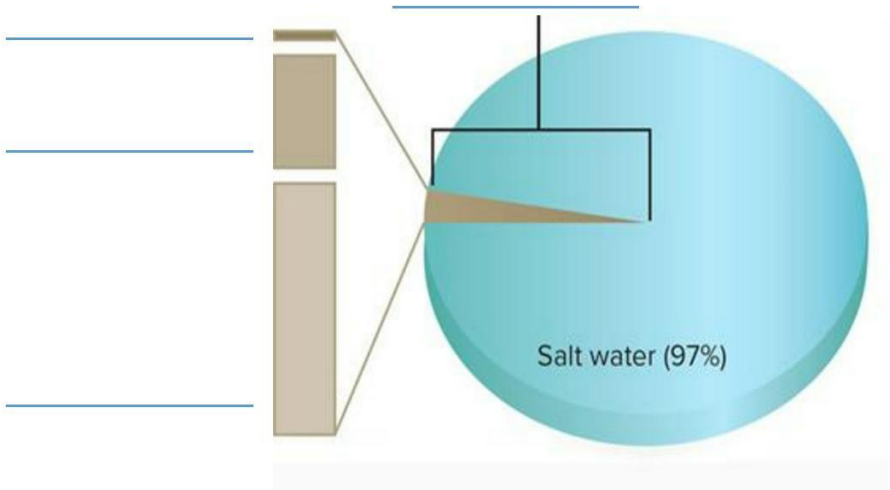
1. Ground water is water stored in the cracks and spaces between particles of soil and underground rocks.
2. Glacier - across the land, a large sheet of ice that moves slowly
3. Ice caps - A covering of ice over a large area such as in the polar region

Module 1: Earth Water System

Lesson 1: Water Distribution on Earth

2	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.	Figure page 12	U3M1L1 page 12
---	--	----------------	----------------

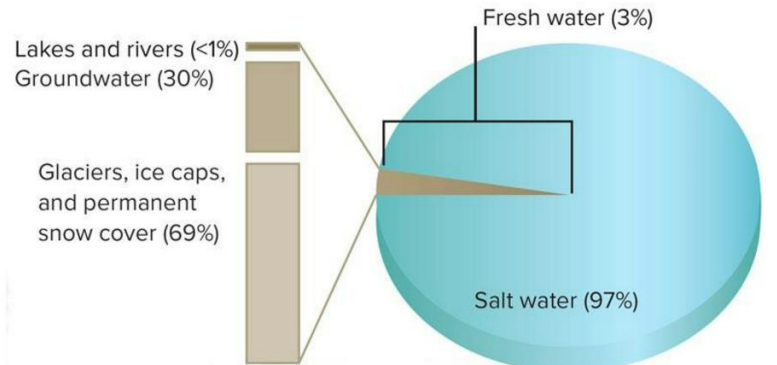
Label it



3) Why is groundwater important for living things to be able to use?

Water seeps into the ground and is stored in the soil. This water can be absorbed by the roots of plants to survive and grow.

Answer



Module 1: Earth Water System

Lesson 1: Water Distribution on Earth

2	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.	Figure page 12	U3M1L1 page 12
---	--	----------------	----------------

Look at the image and answer the questions.



(i) This is a source of fresh water. Name it.

Glaciers

(ii) What is its percentage?.....**69%**.....

Module 1: Earth Water System

Lesson 2: Human Impact on water resources

3

3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

U3M1L2 page 26

Humans Affect Water

Page : 26

People affect the environment every day. Sometimes these effects are negative and can harm the environment, such as pollution. Pollution is any harmful substance that affects Earth's resources.

Heavy rains can wash fertilizers used on farms and lawns into lakes, rivers, and streams. These fertilizers can negatively impact water quality and cause toxic kinds of algae to grow. This can result in something called an **algal bloom**, a sometimes harmful increase in the amount of algae found in water. Oil spills are another cause of water pollution. In 2010, the worst oil spill in United States history occurred when an oil rig in the Gulf of Mexico exploded, releasing 4.9 million barrels of oil into the gulf. That amount of oil could fill over 300 Olympic-sized pools!

Even though some human activities harm natural resources, there are many people who work hard to protect them. In 1974, the United States government passed a law to help protect our water. The Safe Drinking Water Act protects drinking water and water resources. Farmers are now using safer, more natural ways of controlling pests and providing nutrients to plants.



The green water is evidence of an algal bloom. Algal blooms can be harmful.



Zebra mussels can filter feed. They eat the good algae but release the organisms that contribute to the algal bloom back into the water intact.

Module 1: Earth Water System

Lesson 2: Human Impact on water resources

3

3–5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

U3M1L2 page 26

Image	Type of pollution	How it is formed?
	Algal bloom	Heavy rains wash fertilizers used on farms into lakes, rivers and streams
	Oil Spills	Spilling oil into water resources
	Acid Rain	Burning fossil fuels

Arrange the steps of algal bloom formation :

- Step (.2....): Heavy rain washes fertilizer from the soil into the water environment.
- Step (.1....): Fertilizers are added to plants and food crops.
- Step (.4....): Algal bloom harms organisms that live in the water ecosystem.
- Step (.3....): Fertilizer causes the fast growth of algae

How do farmers prevent water pollution caused by algal bloom?

By natural ways of controlling pests and providing nutrients to plants.

Module 1: Earth Water System

Lesson 2: Human Impact on water resources

4

3–5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

U3M1L2 page 27

Conservation

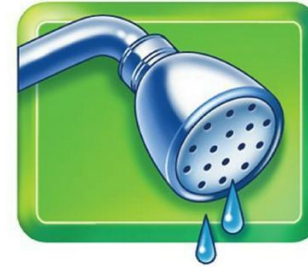
Earth does not have an unlimited supply of natural resources. Many resources are being used more quickly than nature can replace them. Humans can help slow the use of natural resources through conservation.

Conservation is the practice of using resources wisely. The “three Rs” guide people in how to conserve resources. They are reduce, reuse, and recycle.

In terms of conserving water resources, **reducing** our usage means to use less water. This can mean taking shorter showers and turning the water off while we are brushing our teeth.

Reusing water resources means using it for something else or using it more than once. Rainwater can be collected to be used to water plants.

Recycling water is a complicated process that is done at water treatment facilities. Water that is collected through pipes in homes and offices can be recycled to be used again.



Use water-conserving showerheads and take shorter showers.



Do not leave water running when you are not using it.

If you use a dishwasher, use a water-saving model and do not run it unless it is full.



Use a water-saving washing machine and wash full loads of clothes.



Fix leaking pipes or faucets.



Grow plants that do not require frequent watering, and water your plants after dark so the water does not evaporate.



Module 1: Earth Water System

Lesson 2: Human Impact on water resources

4	3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.		U3M1L2 page 27
---	---	--	----------------

1. List two ways to conserve water. Explain why it is helpful for the environment.

Water can be conserved by taking shorter showers or turning off faucets when not using them. It is important to conserve because fresh water is a limited resource in the environment

2. Identify the type of three R's.
- (i) Taking shorter shower Reducing
 - (ii) Turning of the water while brushing Reducing
 - (iii) Rainwater can be collected to be used to water plants
..... Reusing
 - (iv) Water that is collected through pipes in homes and offices
can be recycled to be used again..... Recycling

3 – Answer the following questions.

Conservation is the practice of using resources wisely.

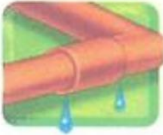
The “Three Rs” guide people in how to conserve resources.

A. List the “Three Rs”?

- Reusing
- Recycling
- Reducing

B. How could you conserve the water in the adjacent figure?

Fix leaking pipes or faucet



Module 1: Earth Water System

Lesson 2: Human Impact on water resources

5

3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

U3M1L2 page 29

Effects of Acid Rain

Acid rain results when gases, such as sulfur dioxide and nitrogen oxide, are released into the atmosphere. A small portion of the gases that cause acid rain comes from natural sources such as volcanoes. Most of the gases come from burning fossil fuels. These gases react with water, oxygen, and other chemicals to form acids. These acids mix with water before falling as precipitation.

The effects of acid rain are seen mostly in water environments, such as streams, lakes, and marshes. It can be harmful to fish and other wildlife. If something harms one part of an ecosystem — one species of plant or animal, the soil, or the water — it can have an impact on everything else.

Some types of plants and animals can live in acidic waters. Others are acid-sensitive and will be lost as acid rain enters the ecosystem. Some acidic lakes have no fish. Even if a species of fish or animal can tolerate moderately acidic water, the animals or plants it eats might not.



Acid rain has destroyed this forest.

Module 1: Earth Water System

Lesson 2: Human Impact on water resources

5

3–5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

U3M1L2 page 29

1. What can be done to reduce or prevent further acid rain damage?

Sample answer: If we reduce the burning of fossil fuels or keep more of the chemicals that cause acid rain from going into the atmosphere, there will be less acid rain.

2. Write the effects of acid rain.

- It is harmful to fish and other wild animals.
- It harms plants, animals, soil and the water.



1. What has destroyed this forest?

Acid rain

2. Name the gases which cause this pollution.

Sulfur dioxide and nitrogen oxide

3. Name the natural resources which produce this gases.

volcanoes

4. How do most of this gases come from?

Burning fossil fuels

Module 1: Earth Water System

Lesson 2: Human Impact on water resources

5

3–5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

U3M1L2 page 29

3- Write the number of the correct answer on the space.

- ¹..... Environment
- ²..... .Pollution
- ³..... Algal bloom
- ⁴..... Acid rain
- ⁵..... Conservation

- 1- Everything around us.
- 2- Any harmful substance that affects earth.
- 3- Rapid increase in the population of algae.
- 4- Result when sulfur dioxide (SO2) and nitrogen oxides (NO2) emitted in atmosphere.
- 5- Practices of using water to Reduces unnecessary water usage.