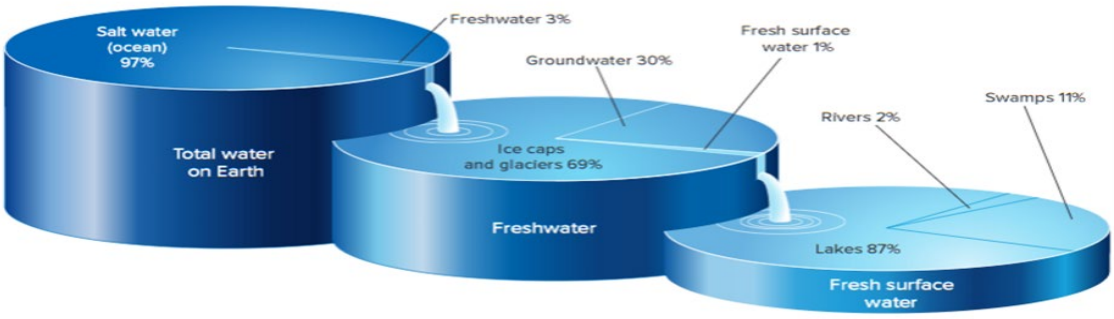
END OF TERM 2 EXAM REVISION – GRADE 5 ELITE STREAM 2021-2022

Name:	
Unit 3: Earth's Interactive Systems	**Part 1: Earth's Water System**
Lesson 1: Water Distribution on Earth (pages 9-19)	
Learning Outcome:	Explain and describe the location and amount of water on Earth's surface. Use mathematics to graph the amounts of usable fresh water on Earth.
Essential Questions	**Notes / Important Information / What I must know and study**
Lesson 1 Vocabulary Words (pages 12-13)	 A _____ is a thick sheet of ice that moves slowly across land.  An _____ is a covering of ice over a large area  A _____ is an artificial lake used to store water made by building a dam on a river.  _____ is the process of storing water on Earth's surface.  _____ is water stored underground between rocks and soil.

Water on Earth (page 12)

All water found on Earth makes up the **HYDROSPHERE.** Water **covers 70 – 75%** of the Earth's surface.

All water on Earth is recycled through the **water cycle.**



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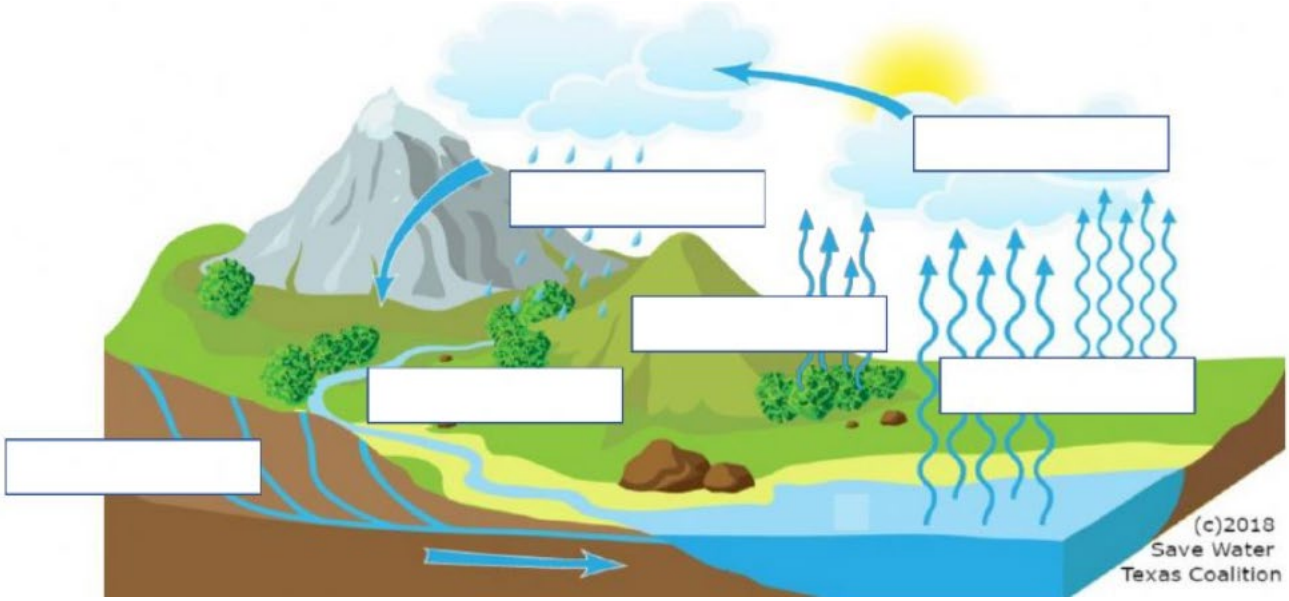


_____: liquid water changing to a gas or water vapor

_____: gas changing into a liquid

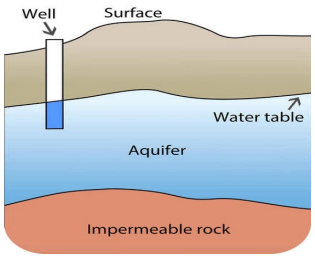
_____: water that falls from the atmosphere and reaches Earth in the form of rain, snow, sleet, or hail

_____: water that flows downhill

_____: water evaporating from the leaves of plants

Freshwater Sources (page 13)

- Groundwater – can be reached by drilling or digging into he ground and pumping the water up through a well
    - Aquifers – underground layers of rock or soil that water can pass through



- Running Water – includes streams and rivers that provide freshwater for homes, farms, and businesses
- Standing Water – includes lakes and reservoirs

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Unit 3: Earth's Interactive Systems	**Part 1: Earth's Water System**
Lesson 2: Human Impact (pages 26-35)	
Learning Outcome:	Explain the positive and negative impact that humans can have on water resources.
Essential Questions	**Notes / Important Information / What I must know and study**
Lesson 2 Vocabulary Words (Pages 26-29)	 _____ is a sometimes harmful, rapid increase in the amount of algal found in water.  _____ is harmful rain caused by the burning of fossil fuels. _____ is the practice of using resources wisely.

Humans Affect Water (page 26)

- **<u>Pollution</u>** is any harmful substance that affects Earth's resources.
  - Causes of pollution – (1) heavy rains wash fertilizers into lakes, rivers, and streams
    (2) oil spills

Ways to Conserve Water (page 27)

1. Take shorter showers.
2. Do not leave the water running when not using it.
3. Only run the dishwasher when it is full.
4. Fix leaking pipes or faucets.
5. Wash full loads of clothes.
6. Water plants after dark.

Effects of Acid Rain (page 29)

- Caused mainly from burning fossil fuels, small amount from volcanic eruptions
- Harmful to fish and wildlife
- Can destroy forests

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Lesson 3: Effects of the Hydrosphere (pages 42-51)	
Learning Outcome:	Explain how the hydrosphere interacts with Earth's other systems.
Essential Questions	**Notes / Important Information / What I must know and study**
Lesson 3 Vocabulary Words	 _____ is the dropping off eroded soil and rock.  _____is rock moving from one place to another.  A _____ is a piece of land near a body of water that is likely to flood.

Erosion and Deposition (pages 42-47)

- Erosion by Glaciers (page 46-47)
  - As the glacier moves, rocks move with it.
  - Rocks of different sizes moved by glaciers are called **glacial debris**.
  - Deposits of rock left by glaciers are called **moraines.**
- Erosion by Fast moving water (page 42-43)
  - Moves in a straight path
  - Can move large pieces of sediment or rock
  - Has a lot of energy
- Erosion by Slow moving water (page 42-43)
  - Moves in a curved path
  - Moves small pieces of rock or sediment
  - Has little energy
- Deposition happens when the water slows down (page 43)
  - Sediment that flows into a large body of water makes a **delta.**
  - Sediment that flows from a shallow canyon it makes an **alluvial fan.**

Floods (page 45)

- Floods cause damage by carrying mud into homes and streets. (Negative effect)
- New soil is deposited on the land and the nutrients help plants grow. (Positive effect)

Hurricanes and Storm Surges (page 45)

- A **hurricane** is a very large, swirling storm that forms on the surface of tropical oceans.
- Hurricanes can cause flooding.
- A **storm surge** happens when a hurricane forces large amounts of wind and waves onshore.
- Storm surges can cause very bad flooding.

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Practice Questions

1) All water on Earth is recycled through _____.

A. the water cycle

B. pockets of nitrogen

C. exhaled gases

D. dead plant and animal matter

2) About _____ of the world's water is salty ocean water.

A. 12 percent

B. 43 percent

C. 47 percent

D. 97 percent

3) 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 la e.

C. The pollution will not hurt the plants or animals in the water.

D. It will change the soil around the lake into pebbles.

4) How can we use conservation to help preserve water resources? Circle all that apply.

A. Take shorter showers

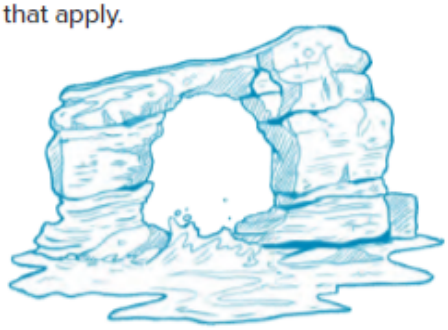
B. Collect rainwater to water indoor plants

C. Dump dirty water into the sewers

D. Turn off the faucet while brushing my teet

E. Shower at the same time every day

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



A. Erosion can be caused by moving water.

B. Erosion can be caused by precipitation.

C. The movement of glaciers causes erosion.

D. The hydrosphere contains all of the land on Earth.

6) 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.

D. Erosion carries the sediment and rock to another location, which changes the shape of the land.

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7) 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.

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

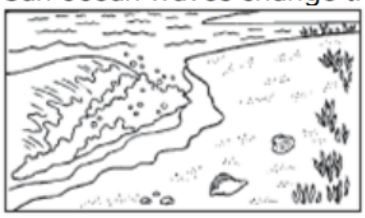
Due to erosion, glaciers can deposit _____ as glacial
(Blank 1)

debris.

Blank 1 options

- large bolders
- small particles
- many sizes of rocks

9) 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.

10) The surface of Earth is always changing and making new features. Which weather conditions have the greatest effect on the surface of Earth?

- ○ fog and light rain
- ○ cool temperatures and humidity
- ○ warm ocean temperatures and humidity
- ○ strong winds and heavy rains

11) Where is a hurricane most likely to occur?

- ○ in the Great Plains
- ○ in the Rocky Mountains
- ○ in the desert southwest
- ○ along the Atlantic Ocean

12) Where does the water go when water evaporates from a puddle on the street?

- ○ It goes into a nearby river or stream.
- ○ It sinks into the street.
- ○ It rises into the atmosphere.
- ○ It goes into outer space.

13) 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.

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

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

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

_____ water can harm living things.

(Blank 1)

Blank 1 options

- Polluted
- Clean

16) 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

17) Which of the following can happen when water interacts with rock formations? Select **all** that apply.

- ☐ climate changes
- ☐ a canyon forms
- ☐ sediment forms
- ☐ rain falls
- ☐ high tide occurs

18) 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.

19) Why is it important to clean, conserve, and protect water?

- ○ Water is expensive.
- ○ Water is a living thing.
- ○ Water can be frozen.
- ○ Water is a limited resource.

20) 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

21) All of Earth's liquid and solid water make up the _____.

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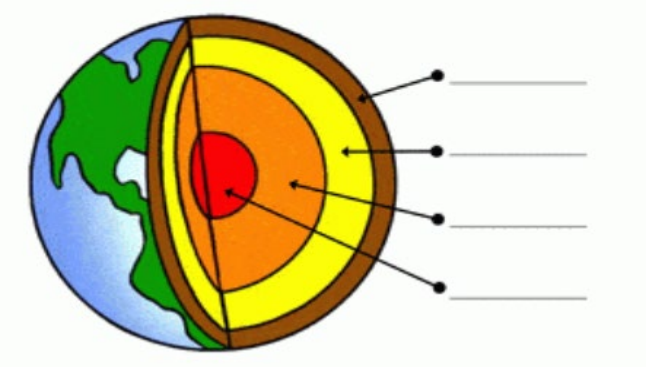
Unit 3: Earth's Interactive Systems	**Part 2: Earth's Other Systems**
Lesson 1: Geosphere (pages 70-82)	
Lesson 1 Vocabulary Words (pages 70-75)	A _____ _____ is an area where molten rock within the mantle rises to the Earth's surface A _____ is a sudden movement of rocks and soil down a slope _____ are solid, non-living substances found in nature (in the ground) _____ is very hot, melted rock found in the Earth's mantle A _____ is an opening in Earth's surface where melted rock or gases is forced out

Features of the Geosphere (page 70)

The geosphere includes…

- **Solid and melted rock** inside the Earth
- **Soil, rock pieces, and landforms** on Earth's surface

Layers of the Earth

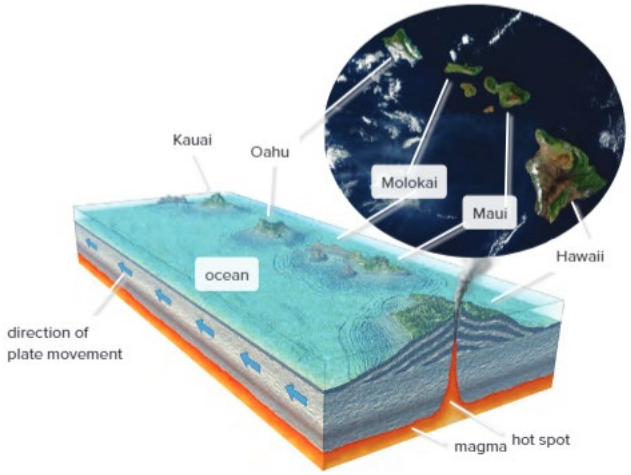


Which is the rocky outermost layer that we live on?
_____

Which layer is made of hot, molten rock that flows?
_____

Which layer is the hottest and made of solid, iron rock?
_____

- **<u>Landforms</u>** are physical features on Earth's crust that change overtime.
- **<u>Plate movement, weathering,</u>** and **<u>erosion</u>** causes landforms to change.
- **<u>Islands</u>** form when one of Earth's moving plates passes over a **<u>hot spot.</u>**



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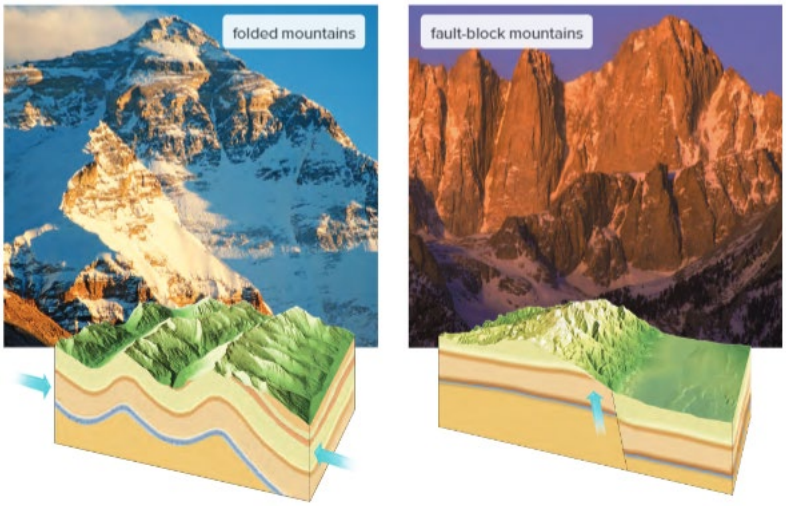
Mountains (page 71)

- **Folded Mountains** – form when plates are pushed together and the crust is forced up
    - Example: Himalayan Mountains
- **Fault-Block Mountains** – forms when one plate moves up and another moves down
    - Example: Sierra Nevada Mountain Range



Volcanoes (page 72)

- Volcanoes form on land and the ocean floor.
- **Active volcano**: currently erupting or recently erupted
- **Dormant volcano**: has not erupted for a long time
- **Extinct volcano**: will not erupt again

Landslides (page 73)

- Caused by **gravity, earthquake vibrations, volcanic eruptions, heavy rains, and human activity**

Mudslides (page 73)

- When water mixes with soil to form mud and the mud becomes so heavy that it slides down a hill
- Mudslides can knock down trees and increase erosion of rocks and soil
- Caused by heavy rains and gravity

Soil (pages 74-75)

- Soil is made of **sand, silt, clay, minerals,** and **living and non-living things**.
- Different types of soil have different **properties** like **color,** particle **size,** and **how the soil reacts with water**.
- Soil can take thousands of years to form.
- **Humus** is the non-living plant and animal matter in soil. It adds **nutrients** to the soil.
-

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- 3 Types of Soil:

  Forest Soil: thin layer of topsoil with little humus

  Desert Soil: sandy soil rich in minerals; does not have much humus; desert plants grow in sandy soils

  Grassland and Prairie Soil (medium textured and clay soils): rich in humus and has many nutrients; and absorbs water well; many types of crops grow in this soil

Unit 3: Earth's Interactive Systems	**Part 2: Earth's Other Systems**
Lesson 2: Atmosphere (page 88-93)	
Lesson 2 Vocabulary Words (Pages 88-93)	An _____ _____ is a large region of air that has the same temperature and humidity. _____ is the average weather in a region over time. **Hydrosphere and Atmosphere** _____ is the condition of the atmosphere in each place at a given time.

Earth's Atmosphere (pages 88-89)

- The **atmosphere** is all the **gases** around the Earth.
- **Weather** happens in the atmosphere. Weather depends on the time of day, season, or location.
- When **water vapor** in the air cools, it **condenses** and **falls to the ground as precipitation (rain, hail, sleet, and snow).**
- **Clouds** form when water vapor in the atmosphere condenses around tiny particles of dust.
- **Air masses** affect the **weather**.
- **Air masses** are described by their **temperature and humidity.**
- A **front** forms when one **air mass** meets another one.
- 3 Types of Fronts:
  Warm Front: warm air goes on top of cold air and results in light, steady rain.
  Cold Front: cold air mass pushes under a warm air mass and results in stormy weather.
  Stationary Front: when air masses do no move and results in rainy weather for many days.

Weather Events (pages 90-91)

Thunderstorms	Rainstorms that include thunder and lightning; common type of severe storm; dangerous lightning, strong winds, and flash floods **Hydrosphere and Atmosphere**
Tornadoes	Rotating, funnel shaped cloud with wind speeds up to 512 km; can quickly change directions; causes a lot of damage…**Atmosphere and Geosphere**
Tropical Storms	Happen near the equator where the ocean is warm; can form hurricanes when the wind is more than 119 km… **Hydrosphere and Atmosphere**
Winter Storms	Happen when cold, dry air mass meets a warm, humid air mass; blizzards happen when snow or sleet occur with cold temperatures and high winds

Unit 3: Earth's Interactive Systems	Part 2: Earth's Other Systems
Lesson 3: Biosphere (pages 106-107)	
Lesson 3 Vocabulary Words (page 107)	_____ is the removal of trees from a large area _____ means that a species has died out completely _____ means that a species is in danger of becoming extinct

Earth's Biosphere (page 106)

- The **biosphere** is all **living things** on Earth.
- Plants, animals, and humans are part of the biosphere.
- **Natural resources** are materials found in nature that humans and other living things can use.
- **Renewable resources** such as water, wind, and sunlight, can be replaced in nature or will not run out
- **Non-Renewable resources** are natural resources that are found in a limited amount on Earth's surface and will eventually run out

Ways to Protect Natural Resources (page 106)

- Organize a group to pick up trash. Dispose of all trash and recyclables properly.
- Plant new trees, bushes, and flowers that are native to the area.
- Compost garbage, grass, and leaves. Use the compost to feed plants instead of using chemical fertilizer.
- Ride a bike, walk, or take public transportation instead of riding in a car.

Protecting Plants and Wildlife (page 107)

- Humans affect ecosystems by…
    - Pollution and acid rain
    - Cutting down trees
    - Planting trees in an environment where they do not belong

Practice Questions

22) Which is an example of a process in the geosphere that causes slow changes?

A. earthquakes

B. glaciers

C. volcanoes

D. landslides

23) A farmer discovers a large amount of a toxic material on the edge of her property, near an empty highway. She worries that the pollution will run downhill to the nearby lake if it starts to rain. Which will most likely happen if lake water becomes polluted by the toxic material?

A. Animals in the lake will die.

B. There will be more fish in the la e.

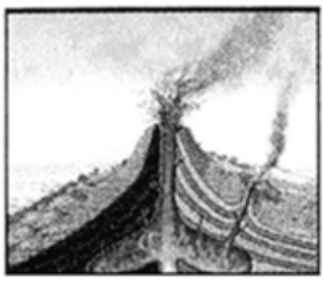
C. The pollution will not hurt the plants or animals in the water.

D. The pollution will change the soil around the lake.

24) Which of the following is not an effect of the geosphere?

- formation of mountains
- shoreline erosion
- erosion by glaciers
- flooding from a hurricane

25) A volcano is an opening in Earth's crust. When magma rushes to Earth's surface, it is called a(n) _____.



- landslide
- eruption
- dormant
- lava chamber

26) Gravity pulls rainwater downhill and the flowing water erodes the landscape by _____.

- forming sand dunes
- washing away soil
- forming a desert
- forming moraines

27) The human choice to remove trees to make goods is called _____.

- deforestation
- soil erosion
- manufacturing
- woodworking

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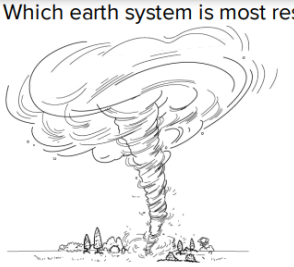
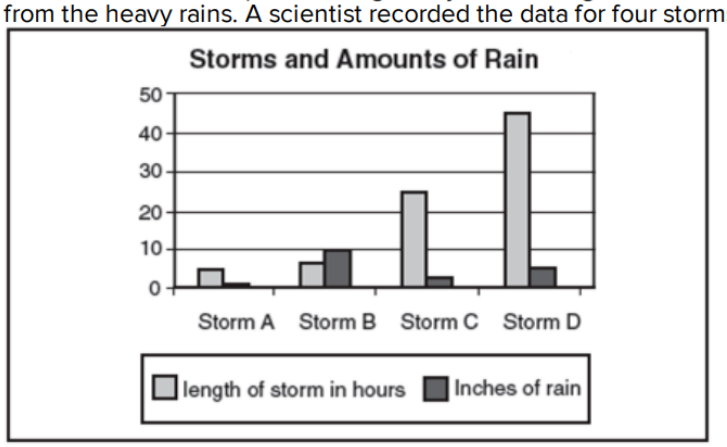
28) Which earth system is most responsible for what is happening in the picture?



- ○ biosphere
- ○ atmosphere
- ○ geosphere
- ○ hydrosphere

29) Mudslides often take place during heavy rains. The ground does not soak up the water from the heavy rains. A scientist recorded the data for four storms in the graph below.



During which storm is a mudslide most likely to happen?

- ○ Storm A
- ○ Storm B
- ○ Storm C
- ○ Storm D

30) Earth's outer core is made of _____.

- ○ solid rock
- ○ liquid rock
- ○ solid metal
- ○ liquid metal

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

Mountain building occurs as a result of Earth's plates moving in _____ .

(Blank 1)

Blank 1 options

- different directions
- the same direction

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

_____ include strong winds, precipitation, and very cold
(Blank 1)
temperatures.

Blank 1 options

- Winter storms
- Tornadoes

33) Which of the following is an interaction of the hydrosphere and atmosphere?

- ○ volcano eruption
- ○ hurricane
- ○ erosion
- ○ earthquake

34) Ecosystems can be changed by natural events or by human actions. Which is an example of a natural event?

- ○ a forest fire started by humans
- ○ toxic smoke pouring out into the atmosphere
- ○ building a road through a prairie ecosystem
- ○ a volcano erupting

35) Animals that are at risk of being extinct are called _____ .

- ○ deforested
- ○ endangered
- ○ consumers
- ○ native

36) The preservation or protection of natural resources is called _____.

- ○ condensation
- ○ precipitation
- ○ conservation
- ○ evaporation

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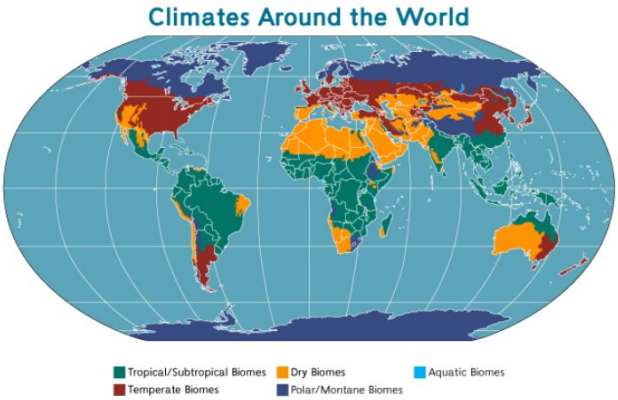
37) The map below shows the location of different types of climates around the world. Tropical and subtropical climates can be found at similar points on the map. Which statement explains the most likely reason why these are found at similar climate zones on the map?



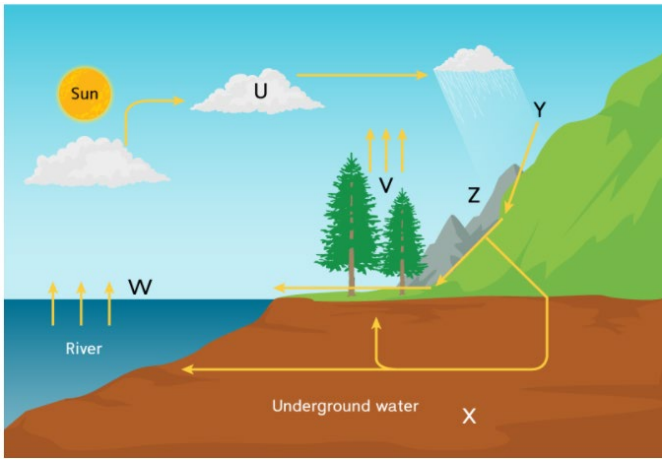
A) They have similar populations and animals. Their biospheres are mostly the same, and their food webs work closely together.

B) They are all found close to the Equator. Geospheres and hydrospheres found close to the Equator interact to create a moist atmosphere.

C) They are bordered by grasslands. These similar geosphere patterns create the moist broadleaf forest climate.

D) They are all close to the ocean. The hydrosphere interacts with the atmosphere and creates a moist environment.

38)



Which places in the diagram show the water changing from a liquid to a gas? Select the **two** that apply.

- ☐ **A)** place U
- ☐ **B)** place V
- ☐ **C)** place W
- ☐ **D)** place X
- ☐ **E)** place Y
- ☐ **F)** place Z

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39) The manager of a company plans to mine and process the rocks of the mountain shown in the diagram. The people who live in the area are concerned that the mining will hurt the mountain ecosystem. Which statement describes how mining will **most likely** affect the ecosystem?

- ○ **A)** It will help it by bringing new organisms and materials into the area.
- ○ **B)** It will help it by opening up the ground, so more water can flow.
- ○ **C)** It will hurt it by having chemicals run off into the water as it moves downhill.
- ○ **D)** It will hurt it by preventing water from being absorbed into the ground.

40) Which of the following are steps a vegetable farmer could take to prevent water pollution? Select the **two** answers that apply

- ☐ **A)** use extra fertilizer to make plants healthy and strong
- ☐ **B)** choose plants that require less fertilizer
- ☐ **C)** choose plants that require less water
- ☐ **D)** water plants at night so less water evaporates
- ☐ **E)** sell vegetables locally so less fossil fuel is burned in the process of transporting produce

41) 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.

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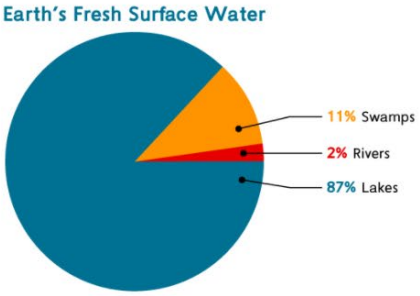
Salt water found in the oceans represents 97% of the total water on Earth, while fresh water represents 3%. Fresh surface water represents less than 1% of the fresh water on Earth. The following circle graph represents the distribution of Earth's fresh surface water.

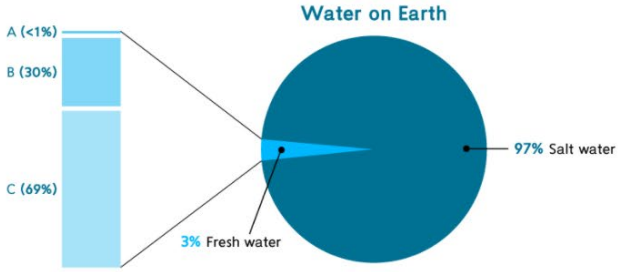
42)



Based on the above information, which statements are true? Select **three** that apply.

- ☐ **A)** Swamps and rivers make up 13% of Earth's fresh surface water.
- ☐ **B)** Lakes make up most of Earth's fresh water.
- ☐ **C)** Rivers makes up most of Earth's fresh surface water.
- ☐ **D)** A small percentage of Earth's fresh water is found in lakes, rivers and swamps.
- ☐ **E)** The majority of water on Earth is found in the oceans.

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.



Use the graph to assign the appropriate labels to A, B, and C.

A	
B	
C	

Lakes and Rivers

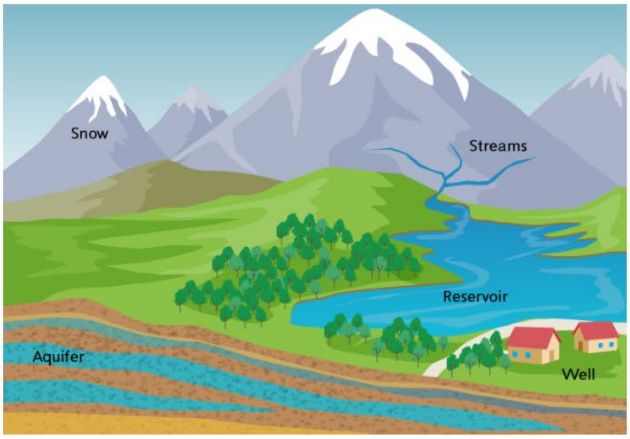
Groundwater

Frozen Water

END OF TERM 2 EXAM REVISION – GRADE 5 ELITE STREAM 2021–2022

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.

44)

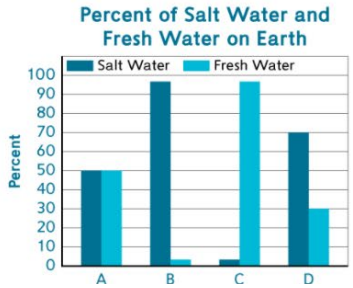


What conclusion can the students make about Earth's fresh water supply from this model?

- **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.

45)



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.

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46) 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

47) Which of the following is an example of a human activity that can help protect and conserve resources?

- **A)** Organize a group to pick up trash and to teach others how to dispose of all trash properly.
- **B)** Plant new trees, bushes, and flowers that are native to the area.
- **C)** Compost garbage, grass, and leaves. Use the compost to feed plants instead of using chemical fertilizer.
- **D)** Ride a bike or walk instead of using a gasoline-run automobile.