

شكراً لتحميلك هذا الملف من موقع المناهج الإماراتية



حلول مراجعة لأهم الأسئلة والنقاط وفق الهيكل الوزاري انسابير النخبة

[موقع المناهج](#) ⇨ [المناهج الإماراتية](#) ⇨ [الصف التاسع المتقدم](#) ⇨ [علوم](#) ⇨ [الفصل الثالث](#) ⇨ [الملف](#)

التواصل الاجتماعي بحسب الصف التاسع المتقدم

روابط مواد الصف التاسع المتقدم على تلغرام

[الرياضيات](#)

[اللغة الانجليزية](#)

[اللغة العربية](#)

[التربية الاسلامية](#)

المزيد من الملفات بحسب الصف التاسع المتقدم والمادة علوم في الفصل الثالث

[أسئلة الامتحان النهائي انسابير](#)

1

[أسئلة الامتحان النهائي بريدج](#)

2

[مراجعة شاملة وفق الهيكل الوزاري انسابير](#)

3

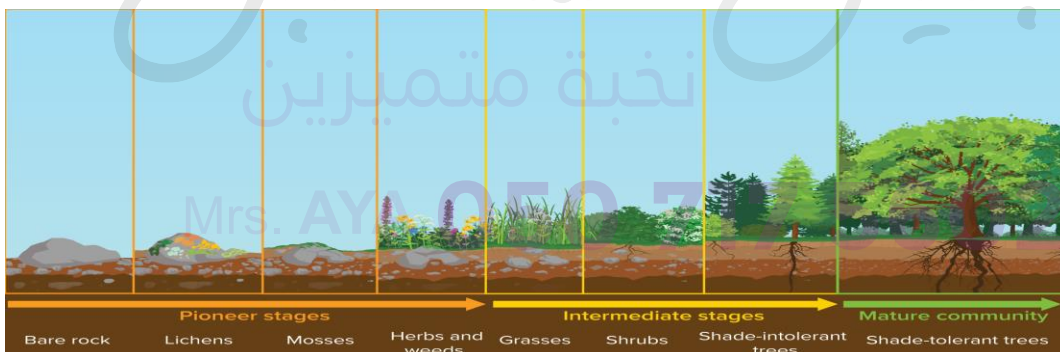
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4

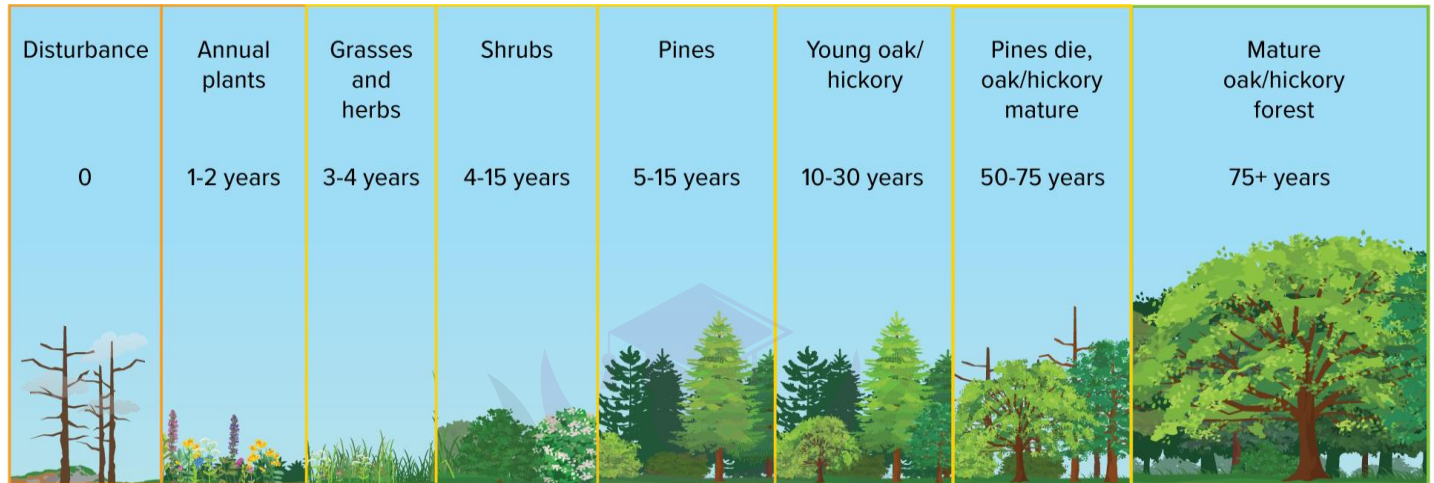
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5

- **abiotic factor:** the nonliving part of an organism's environment
- **A biological community:** is a group of interacting populations that occupy the same area at the same time. (different species)
 - Note that ∞: Not every community includes the same variety of organisms
 - **ecological succession :** The change in an ecosystem that happens when one community replaces another as a result of changing abiotic and biotic factors
 - There are two types of ecological succession:
 - primary succession
 - secondary succession
 - **primary succession:** The establishment of a community in an area of exposed rock that **does not have any topsoil**
 - **climax community:** The **stable, mature community** that results when there is little change in species composition



- **secondary succession:** The orderly and predictable change that takes place after a community of organisms has been removed but the soil has remained intact



Q&A:

- **How might abiotic factors affect communities?**

For example, consider soil, which is an abiotic factor. If soil becomes too acidic, some species might die or become extinct. This might affect food sources for other organisms, resulting in a change in the community.

Note That 🗣️:

- Depending on which factors are present, and to what extent, organisms can survive in some ecosystems but not in others.
- **Ecological succession:** complex set of interactions within an ecosystem can keep its numbers and types of organisms relatively constant over long periods of time under stable conditions.
- Primary succession occurs on areas of exposed rock or bare sand (no soil).

- Pioneer stages

- Bare rock
- Lichens
- Mosses
- Herbs and weed

- Intermediate stages

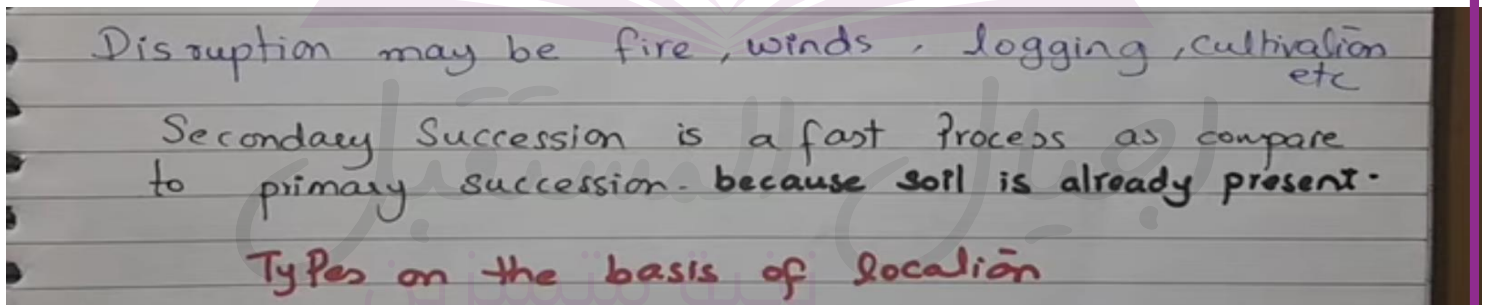
- Grasses
- Shrubs
- Shade-intolerant trees

- Mature community

- Shade-tolerant trees

Note that 🗣️:

- secondary Succession:

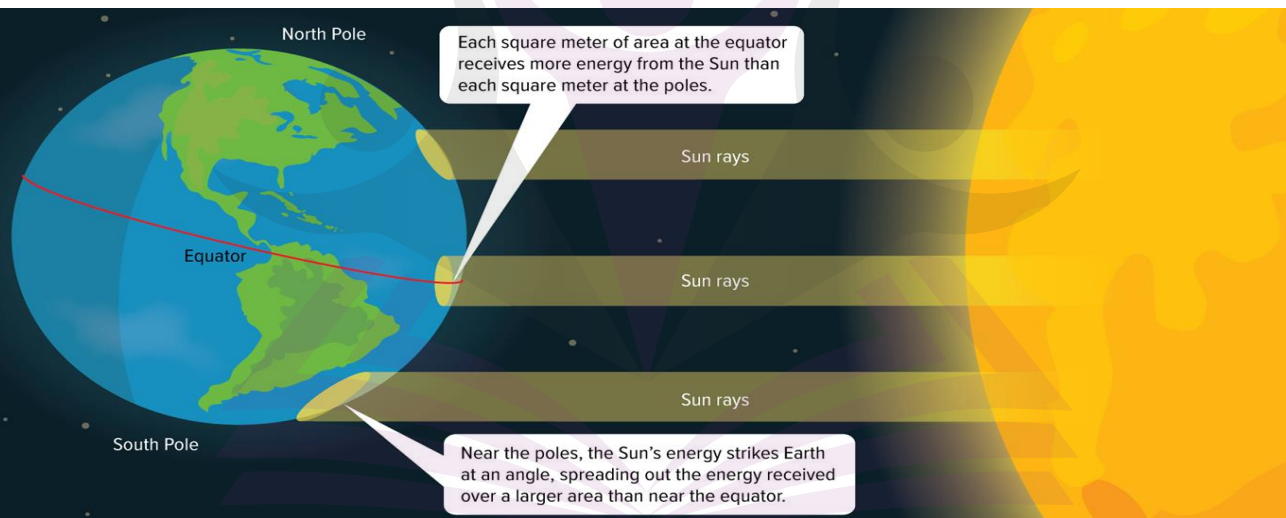


Secondary succession examples: Forest Fire, Flood الفيضان, harvesting (logging), Hurricane, windstorm, Cyclone اعصار

Lesson 2

- **biome**: a large group of ecosystems that share the **same climate** and have similar types of plant communities
- **Weather** is the condition of the atmosphere at a specific place and time. Weather is driven by global differences in latitude and climatic conditions.
- **Latitude** is the distance of any point on the surface of Earth north or south from the equator.

Light from the Sun strikes Earth more directly at the equator than at the poles **north of 66°N and south of 66°S receives the least amount of energy from**



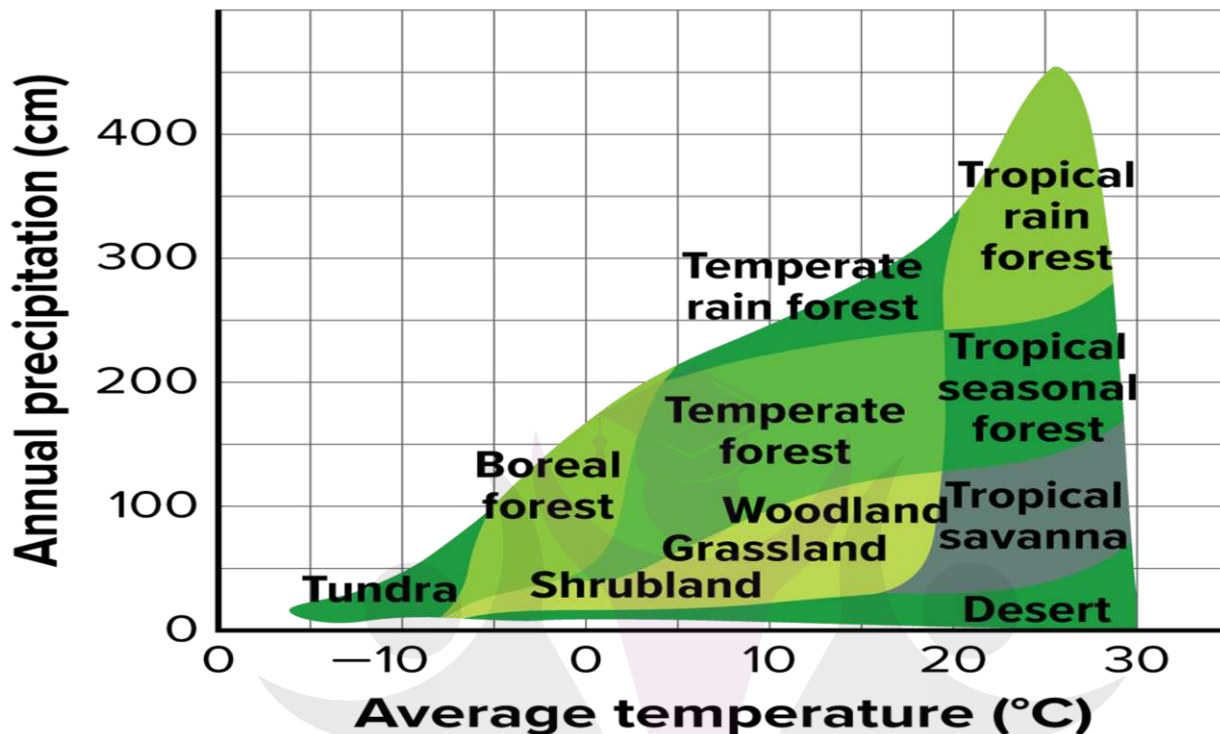
the Sun per square meter

- **Area's climate**: The average weather conditions in an area

Note that👁️👁️:

- Plants and animals have adapted to the climate of their **biome**. Small changes in temperature and precipitation can affect them.

Annual Precipitation v. Temperature for Various Biomes



- Biomes are classified primarily according to the characteristics of their plants.
- Biomes are also characterized by **abiotic climate characteristics**, such as temperature, precipitation, the amount of sunlight, and the amount and type of wind.
- The plants and abiotic characteristics in a biome influence the types of animals that live there.

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Tundra

A tundra is a treeless biome with a layer of permanently frozen soil below the surface called **permafrost**.

Tundra plants have very shallow roots.



Boreal Forest

The boreal forest is a band of dense **evergreen forest**. It is also called the **northern coniferous forest, or taiga**.

Summers are longer than tundra summers.

The ground lacks a permafrost layer.



Temperate Forest

- A **temperate forest** is composed mainly of broad-leaved, deciduous trees.
 - The fallen leaves return nutrients to the soil.
- All four seasons occur in temperate forests.

Temperate Woodland and Shrubland

Open woodlands and mixed shrub communities are found in areas with less annual rainfall than in temperate forests



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Desert

A desert is any area in which the **annual rate of evaporation exceeds the rate of precipitation.**

Q&A

The place where the rate of evaporation exceeds the rate of precipitation



Tropical Savanna

A tropical savanna is characterized by **grasses and scattered trees** in climates that receive less precipitation than some other tropical areas



Specially in Africa

Tropical Seasonal Forest

Tropical seasonal forests are also called **tropical dry forests.** (tropical deciduous forests)

Almost all of the trees in the biome **drop their leaves to conserve water** during dry season.

ExtraNote:

The tropical deciduous forests shed their leaves because The trees tend to lose water through a process called transpiration.

In the dry season, trees prefer to shed their leaves and **avoid loss of water through transpiration.** This helps them conserve water.



Tropical Rain Forest

Warm temperatures and large amounts of rainfall throughout the year characterize the tropical rain forest.

The tropical rain forest is the most diverse of all land biomes.

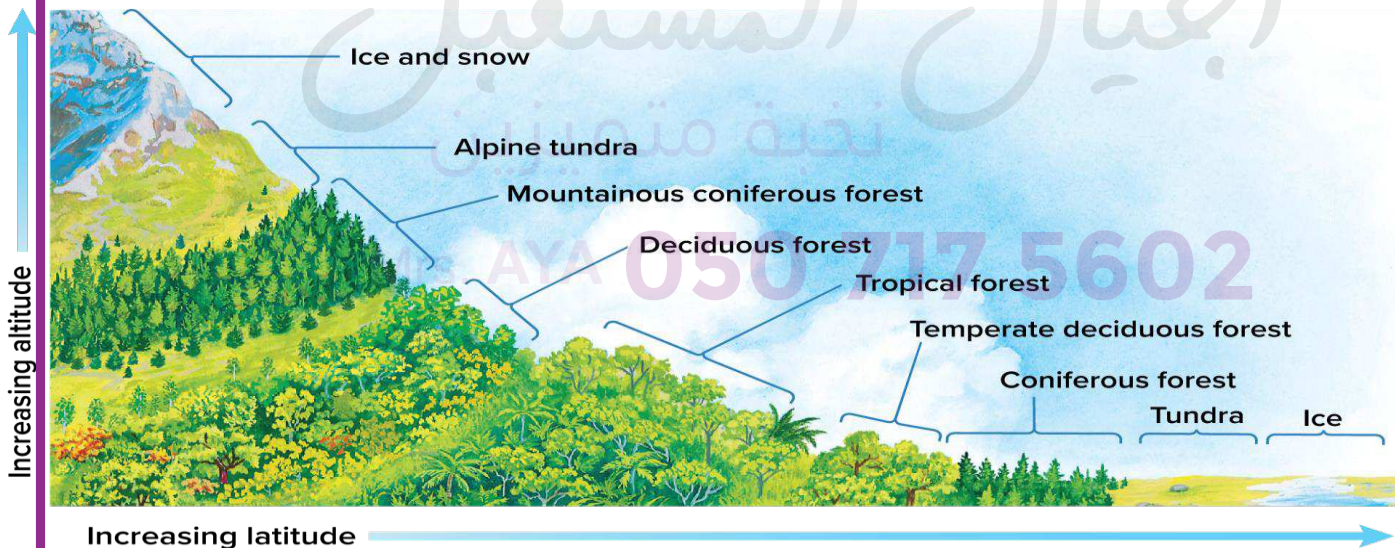
✓ contains the greatest species diversity



Mountains

Mountains do not fit the definition of a biome because their climate characteristics and plant and animal life vary depending on elevation.

(As you climb a mountain, the temperature drops and the climate changes)



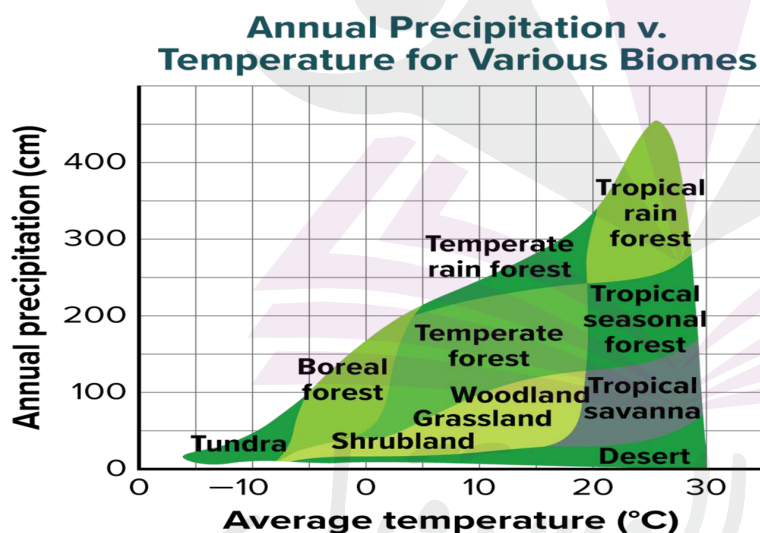
Polar Regions

Polar regions **are not considered true biomes** because they are ice masses and not **true land areas with soil.**

Polar regions, which are cold all year, border the tundra at high latitudes.

Note That 📌:

- Temperature and precipitation are two major factors that influence the kind of vegetation that can exist in an area.
- Which biome would you expect in an area that receives 200 cm of precipitation annually if the average annual temperature is 10°C?



Ans: temperature rain forest

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LESSON 3

AQUATIC ECOSYSTEMS

- Ecologists recognize the importance of water because of the biological communities that water supports.
- Only about 2.5 percent of the water on earth is freshwater,
- the 2.5 percent of Earth's water that is fresh,
 - ✓ 68 percent is contained in glaciers
 - ✓ 30.8 percent is groundwater,
 - ✓ only 0.3 percent is found in lakes, ponds, rivers, streams, and wetlands.

Rivers and streams

- ✓ The water in rivers and streams flows in one direction,
- ✓ head-water: is the beginning source of rivers
- ✓ the flowing water empties into a larger body of water.

Note that:

- ✓ Rivers and streams also might start from underground springs or from snowmelt.

The slope of the landscape: determines the direction and speed of the water flow.

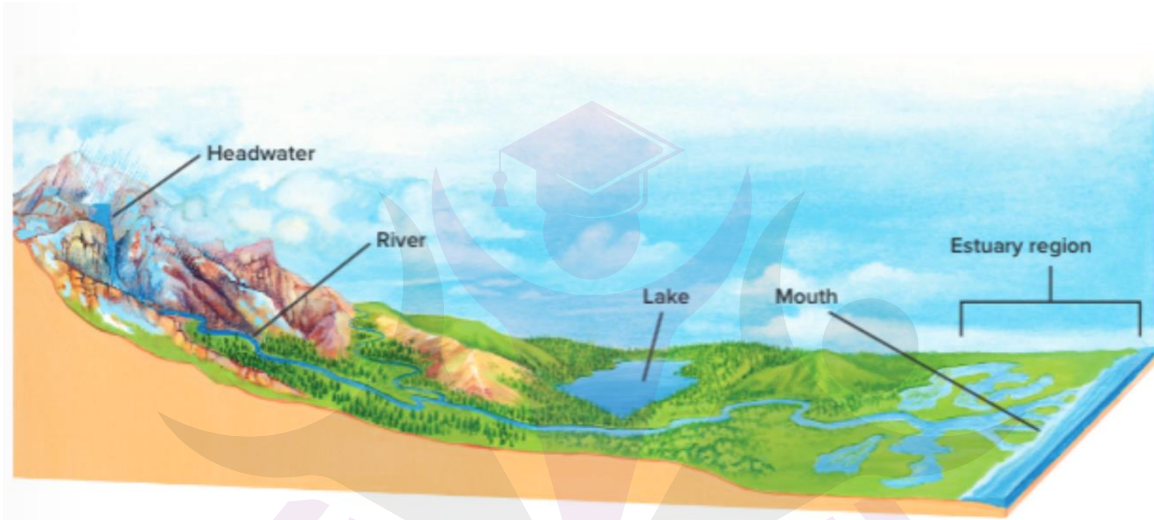
- ✓ When the slope is steep منحدرة نخبة مفتوحة water flows quickly, causing a lot of sediment to be picked up ترفع and carried by the water.
- ✓ As the slope levels, the speed of the water flow decreases and sediments are deposited تترسب in the form of silt, mud, and sand.

Note that:

Sediment is material that is deposited by water, wind, or glaciers.

The characteristics of rivers and streams change during the journey from the source due to:

- ✓ Interactions between wind and the-water which adds a significant amount of oxygen to the water.
- ✓ Interactions between land and water result in erosion.



There are usually fewer species living in rapid waters why?

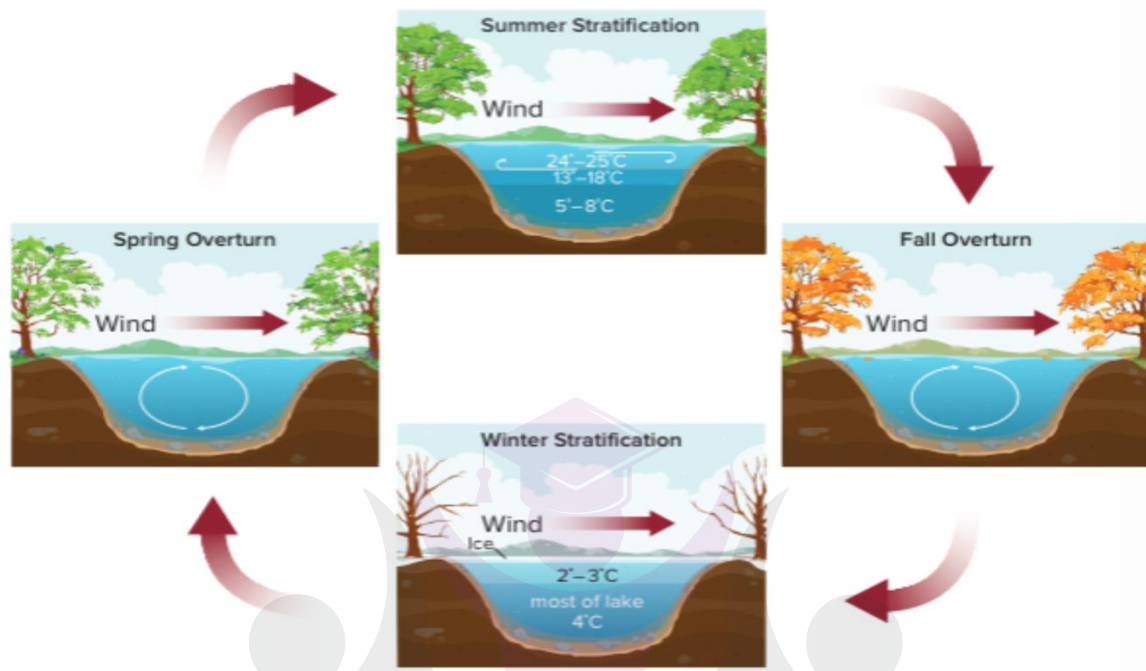
fast-moving rivers streams prevent much accumulation of organic materials and sediment.

Lakes and ponds

Lake or pond: An inland body of standing water

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- ✓ During the winter, most of the water in a lake or pond is the same temperature.
- ✓ During the summer, the warmer water on top is less dense than the colder water at the bottom
- ✓ During the spring and fall, The top and bottom layers Of water miX,



identifies the zones and biodiversity of lakes and ponds.

- a) Littoral zone
- b) Limnetic zone
- c) Profundal zone

Lakes and ponds are divided into three zones based on the amount of sunlight that penetrates the water.



A) Littoral zone

- ❖ The area closest to the shore.
- ❖ The water in this zone is shallow سطحي, Which allows Sunlight to reach the bottom.
- ❖ the most biodiverse

B) Limnetic zone

- ❖ Limnetic zone is the open water area and is dominated by plankton.
 - **Plankton** are freefloating autotrophs and heterotrophs that live in freshwater or marine ecosystems.
- ❖ Many species of freshwater fish live in the limnetic zone because food, Such as plankton,

C) profundal zone

- ✓ the deepest areas of a large lake
- ✓ Minimal light is able to penetrate through the limnetic zone into profundal zone,
- ✓ The profundal zone is therefore much colder and lower in oxygen than the other two zones. So A limited number of species live in

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part 1 اسئله الهيكل

1- What is ecology?

Ans.

It is the study of relationships among living organisms and the interactions the organisms have with their environment

2- Ecology can be defined as

Ans.

study of relationships among living organisms and their interactions with biotic and abiotic factors

3- What is a community?

4- A community can be described as

Ans.

Community is a group of interacting populations that occupy the same area at the same time

5- What is an abiotic factor And give examples?

Ans.

Abiotic factors are the non-living factors in an organism's environment

Examples:

Temperature, air, water currents, sunlight, soil type, nutrients

6- What is a biotic factor?

7- Give examples of biotic factors.

Ans.

Biotic factors are the living factors in an organism's environment

Examples: fish, algae, frogs, microscopic organisms

8- Is a large geographic area with similar climax communities.

Ans.
Biome

9- A biome can be defined as

Ans.

a group of ecosystems that share the same climate and have similar types of communities.

10-

Choose the correct biome for the description. Answers may be used only once or not at all.

Description	Biome
has a permafrost layer	Select Choice <input type="button" value="v"/>
dominated by spruce, fir, and pine trees	Select Choice <input type="button" value="v"/>
dominated by oak, maple, hickory, and beech trees	Select Choice <input type="button" value="v"/>
destination of an African safari tour	Select Choice <input type="button" value="v"/>
where the rate of evaporation exceeds the rate of precipitation	Select Choice <input type="button" value="v"/>
contains the greatest variety of tree species	Select Choice <input type="button" value="v"/>

TUNDRA
Boreal forest
Temperate Forest
Tropical Savanna
DESERT
Tropical Rainforest

11- Suggest why land biomes are classified according to their plant characteristics rather than according to the animals that inhabit them

Ans.

Land biomes are classified according to plant and abiotic characteristics because it influences the types of animals that live there

12- Predict how unfavorable abiotic and biotic factors affect a species.

Ans.

Unfavorable factors might restrict the population numbers and ability to reproduce. Some factors that are unfavorable to some species can be favorable to others.

13- Describe how the stages of succession can change a rocky field into a mature forest.

14- Describe how soil is created during primary succession.

Ans.

- a) Pioneer species like lichens grow over the rocky fields.
- b) When these species die, it causes weathering of the rocks and soil is formed.
- c) Plants that are capable of quickly reproducing like weeds and ferns grow, grow in the soil.
- d) Seeds of larger plants like trees are brought by the winds.
- e) This will cause to a climax community

15- Hypothesize why the tropical rain forests have the greatest diversity of living things.

Ans.

Warm temperature and large amounts of rainfall provides ideal condition for many species of plants and animals.

Tall broad-leaved trees make canopy. Shorter trees, shrubs, plants make understory. This provides abundant of nutrients

16-

While touring a Costa Rican rain forest on vacation, Dana learns that rain forests have the highest biodiversity of any ecosystem on the planet. The guide defines the term biodiversity for the group. Which definition does she give?

- number of organisms in the forest
- variety of species in the forest
- number of life layers in the forest
- variety of habitats in the forest

Ans.

- I. Pioneer species like lichen begin to grow on the rock. They produce acids that help to break down the rocks.
- II. As these organisms die, they decay and their organic matter with bits of sediment makes up the first stage of soil development.
- III. As Small plants grow, additional soil is added

17- Distinguish between primary succession and secondary succession.

Ans.

Primary succession- The formation of a community in an area of exposed rock that does not have any top soil. It occurs very slowly at first

Secondary succession- orderly and predicable change that takes place after a community of organisms has been removed but the soil is intact.

This is a quicker process

18- is an area where the annual rate of evaporation exceeds the rate of precipitation.

Ans.
Desert

19- Indicate the differences between temperate grasslands and tropical savannas

Ans.

- ✓ Temperate grasslands- warm to hot in the summer with seasonal precipitation (هطول الامطار الموسمي)
- ✓ Tropical savannas- warm year, round with much more rainfall during the wet season
- ✓ Temperate grasslands also are known to have richer soils than savannas.

20- Hypothesize why the tropical rain forests have the greatest diversity of living things.

Ans.

Warm temperature and large amounts of rainfall throughout the year. Tall, broad-leaved trees make up the canopy, shorter trees shrubs and plants make up understory. The diverse plants species enrich the nutrients in the soil. The high intensity sunlight provides energy for producers in the rainforest and supports a wide variety of plant growth.

21- List the characteristics of tropical regions

Ans.

- **Warm temperature, hot and humid climate is a character of all tropical regions**
- **Tropical savanna- grasses and scattered trees in climate, less rainfall than other tropics**
- **Tropical seasonal forest- also called tropical dry forest. Almost all trees shed their leaves to conserve water**
- **Tropical rainforest- the most diverse of all land biomes**

22- Which biome is considered to be the most biodiverse?

Ans.

Tropical Rainforest

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نخبة متميزين

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Addition important questions:

primary succession is...

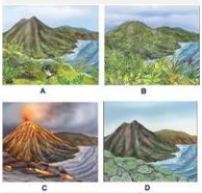
answer choices

- When a hurricane causes a river to flood its banks
- When a farmer ploughs his fields to remove all existing plant life.
- When fire burns through a forest and kills all vegetation less than 1m tall.
- When increasing temperature causes a glacier to recede from an area of rocky ground

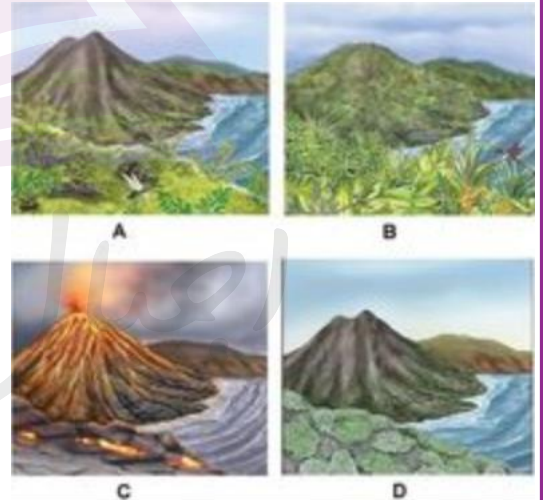
The secondary succession is

answer choices

- lichens and mosses arrive on bare rock and begin to trap soil
- a complex, stable ecosystem is formed
- plants grow in an area devastated by a flood
- plants grow in a newly formed pond



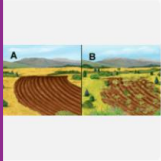
What is the order of succession shown in this figure?



answer choices

- A, B, C, D
- B, A, D, C
- C, D, A, B
- D, A, B, C

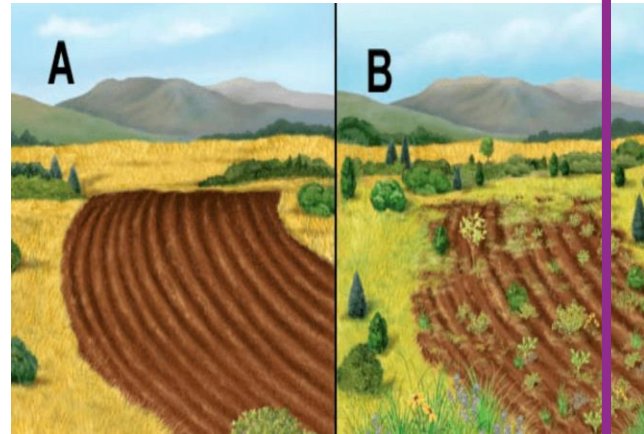
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What type of succession is shown going from figure A to figure B?

answer choices

- primary succession
- ecological succession
- secondary succession
- intermediate



What is the name given to lichen or algae after a primary succession?

answer choices

- pioneer species
- volunteer species
- founder species
- conqueror species



What is the difference between a primary vs. secondary succession?

answer choices

- secondary occurs where there was no previous community
- they are the same
- secondary occurs in an area that was only partially destroyed
- primary occurs in an area that was only partially destroyed

Which type of succession occurs on freshly formed on barren land?

— answer choices —

- Primary Succession
- Secondary Succession

Which of the following is something that can create new land?

— answer choices —

- Snow
- Rain
- Volcanic Eruption
- Wind

What do we call the first species that colonize a new area?

— answer choices —

- Foreign Species
- Pioneer Species
- Intraspecies
- Interspecies

What is succession?

— answer choices —

- The first species to populate an area.
- Is the same of interreaction
- Is Disruption to the physical or biological components.
- The series of predictable changes that occur in a community over time.

Can Disruptions to the physical or biological components can impact organism population?

answer choices

- Yes it can
- No it cant



Plant life starting to grow on a volcano

answer choices

- primary succession
- secondary succession
- tertiary succession
- variable succession



What is the first species you will see after a **primary** succession? (in picture)

answer choices

- lichens
- grasses
- small plants



A pioneer species is...

answer choices

- a large organism
- the first organisms to adapt to a new environment
- The best organism
- Abiotic organisms



the process by which a new community forms where no community lived before

answer choices

- resource
- invasive (non- native) species
- primary succession
- competition

Which is the correct order in primary succession?

answer choices

- Rocks, Lichens & Mosses, Bushes & Shrubs, Trees
- Lichens & Mosses, Rocks, Trees, Bushes & Shrubs
- Trees, Bushes and Shrubs, Lichens & Mosses, Lichens & Mosses
- Rocks, Grass, Trees, Bushes & Shrubs

Primary succession occurs in an area that has:

answer choices

- soil
- no soil
- some soil
- none of these

What is the main difference between primary and secondary ecological succession?

answer choices

- Primary begins WITHOUT soil; Secondary begins WITH soil
- Primary is the first state and secondary is the second stage
- Primary builds plant community; secondary builds animal community
- Primary begins WITH soil; Secondary begins WITHOUT soil

What is the term that describes a steady and stable community?

answer choices

- peak community
- turf community
- climax community
- disturbed community

Which is faster: Primary or Secondary Succession?

answer choices

- Primary Succession
- Secondary Succession
- Both Take The Same Amount of Time

Which of the following is NOT a pioneer species?

answer choices

- Shrubs
- Lichen
- Mosses
- Fungi

T or F: Succession increases biodiversity.

answer choices

- true
- false

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The Final stage of ecological succession is...

answer choices

- Mature Tree Growth
- Climax Community

What is formed during primary succession that doesn't need to be formed during secondary succession?

answer choices

- pioneer species
- soil
- climax community
- grasses

Natural disasters such as flooding and tornadoes are linked to _____.

answer choices

- primary
- secondary
- old field
- ecosystem



After a forest fire, an ecosystem would start regrowth through -

answer choices

- primary succession
- secondary succession
- climax community
- limiting factors

Which experiences the least change over time?

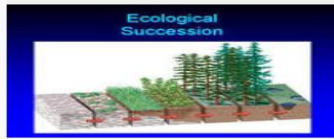
answer choices

- Pioneer Species
- Primary Succession
- Aquatic Succession
- Climax Community

Which of the following best describes primary succession?

answer choices

- Volcano wipes out ecosystem that gradually grows back from ash covered soil
- Volcano creates a new island of rock that must break down to form an ecosystem
- Forest fire burns down forest that must bounce back over time
- Tornado destroys a crop that must slowly grow back over time.



What is ecological succession?

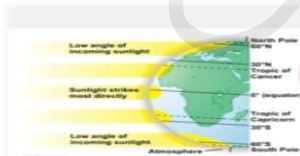
answer choices

- A slow change in an environment
- A change that takes days in an environment
- No change
- Abiotic change

ends in a climax community

answer choices

- primary succession
- secondary succession
- both types of succession



60 degrees latitude receives sunlight that is

answer choices

- more direct & intense than 0 degrees
- less direct & intense than 0 degrees
- the same as 30 degrees in intensity
- more direct & intense than 30 degrees

The closer a biome is to the equator, the more we would expect it to be

— answer choices —

- warmer & wetter
- warmer & drier
- cooler & wetter
- cooler & drier

The farther a biome is from the equator, the more we would expect it to be

— answer choices —

- warmer & wetter
- warmer & drier
- cooler & wetter
- cooler & drier

The tropical rain forest & tropical savanna biomes are similar in _____, but _____.

— answer choices —

- temperature / the savannah doesn't receive enough rainfall to be a forest
- precipitation / the rain forest is hotter
- precipitation / the savanna is cooler
- temperature / the rain forest doesn't receive enough sunlight to be a savanna

The tundra biome & the desert biome are both very dry, but

— answer choices —

- the desert is always hot
- the desert has a wider temperature range
- the tundra has a wider temperature range
- they are also similar in temperature

The tropical savanna & temperate grassland are both types of grasslands. What differentiates them is the fact that

answer choices

- the savanna is hotter
- the savanna is cooler
- the grassland is hotter
- the grassland receives much more precipitation

Terrestrial biomes are defined mainly by their

answer choices

- climate & plants
- climate & animals
- animals & plants
- climate only

The tundra biome occurs near the poles, while the alpine tundra

answer choices

- occurs near the equator
- occurs near 30 degrees latitude
- occurs on mountain tops and many latitudes
- occurs at sea level



The biome pictured is

answer choices

- tropical savanna
- tropical rain forest
- temperate rain forest
- temperate deciduous forest



The biome pictured is

answer choices

- desert
- tropical savanna
- tropical seasonal forest
- boreal forest



The biome pictured is

answer choices

- boreal forest
- temperate deciduous forest
- tropical rain forest
- temperate rain forest



The biome pictured is

answer choices

- desert
- tundra
- temperate grassland
- boreal forest



The biome pictured is

answer choices

- shrubland/chaparral
- tropical savanna
- temperate deciduous forest
- desert

A large region characterized by its climate and organisms.

answer choices

- biome
- ecosystem
- community
- population

This biome is covered in coniferous forests.

answer choices

- taiga
- tundra
- temperate rain forest
- deciduous forest

This biome's temperature is very cold at night and then extremely hot in the day.

answer choices

- tropical rain forest
- temperate rain forest
- chaparral
- desert

More than half of the world's animals and plants live in this biome.

— answer choices —

- grasslands
- deciduous forests
- taiga
- rain forests



hot, humid forests with much rainfall

— answer choices —

- grassland
- terrestrial ecosystems
- tropical rainforest
- biodiversity



A cool, mostly coniferous (evergreen) forest.

— answer choices —

- tundra
- grassland
- desert
- taiga



A sandy or rocky biome with little precipitation or plant life.

— answer choices —

- biomes
- tundra
- biodiversity
- desert



The cold biome of the far north. It has permanently frozen soil, so it can't support large plants.

answer choices

- taiga
- canopy
- tundra
- biomes

Terrestrial biomes are defined by their...

answer choices

- climate, plants & animals
- climate only
- animals & plants only
- none of these

Which major biome is home to cacti, mesquite, white thorn, pack rats, small reptiles, and coyotes?

answer choices

- desert
- taiga
- rainforest
- grassland



Which biome has 4 seasons?

answer choices

- Taiga
- Tundra
- Tropical Rainforest
- Temperate Forest

Which biome has less than 25cm of rain each year?

answer choices

- Grasslands (Savanna)
- Temperate Deciduous Forest
- Desert
- Rainforest

Aquatic life is abundant, diverse, and full of sunlight at which zone?

answer choices

- littoral zone
- benthic zone
- limnetic zone

Two factors that determine where an organism lives in aquatic ecosystem are

answer choices

- Temperature and sunlight
- Neighbors and housing prices
- Fish and wildlife
- Darkness and tree height

free-floating autotrophs and heterotrophs found in freshwater

answer choices

- plankton
- amoebas
- protists
- euglena

deepest area of a lake

answer choices

- profundal zone
- littoral zone
- limnetic zone
- abyssal zone

Match the following

answer choices

- tundra → Permanently frozen soil, dwarf forms of plants, little precipitation, little decomposition.
- temperate rainforest → This biome in the northwestern USA has a cold winters and hot summers with abundant rainfall to support very tall trees like redwoods and sequoias.
- taiga → A forested biome dominated by evergreen, cone-shaped, and cone-bearing plants.
- temperate deciduous forest → Four distinct seasons with precipitation evenly distributed through the year. Common plants and animals include oak, hickory, deer, bears and many songbirds.
- temperate grassland → The hot and dry summers, along with low and dense plant growth makes the risk of fire high in this area. Prairie dogs are found here.

Match the following

answer choices

- desert → Receives less than 10 in. of rain per year. Plants in this biome have many adaptations to prevent water loss, & animals tend to be nocturnal.
- savanna → Alternating wet & dry seasons with animals & plants adapted to drought (a.k.a. tropical or subtropical grasslands). Elephants, zebras, & lions are found here.
- tropical rainforest → Located along the equator, this biome has the highest species biodiversity of all the biomes. Exotic plants & animals are found here.
- chaparral → Found near large bodies of water. The climate is nice here year round. Plants are resistant to fire & others actually promote fire!
- tropical dry forest → Found north & south of the tropical rainforests. They get less rain than a tropical rainforest but more than a savanna. Deciduous trees are found here.



Which layer of a lake/pond has the most biodiversity?

answer choices

- Limnetic
- Littoral
- Profundal



What happens to sediment when a fast-moving river slows down?

answer choices

- Sediment moves just as fast as it used to
- Deposits of silt, mud, and sand are created
- Silt is produced and covers the river
- Sediments condense to form rock

What factors affect aquatic ecosystems?

answer choices

- Light, salinity, temperature
- Sun, moon and stars
- Nothing
- Coral reefs, whales

Within a lake ecosystem, in which zone is there no photosynthesis?

answer choices

- Euphotic zone
- Profundal zone
- Limnetic zone
- Littoral zone

The deepest part of a large lake; much colder and low in oxygen gas

answer choices

- Profundal zone
- Littoral zone
- Limnetic zone
- Abyssal zone

انتظرونا
في مساء ليلة الامتحان
لضمان العارامة الكاملة
نخبة متميزين

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