OCR (A) Biology GCSE

B4.1 - Ecosystems

Flashcards

Give 3 molecules which are cycled through ecosystems

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Oxygen, carbon dioxide and water

Briefly describe how water is cycled through an ecosystem

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- Water evaporates from rivers and lakes and from transpiration
- Water condenses as clouds
- Water is returned through precipitation

Briefly describe how carbon dioxide is cycled through an ecosystem

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- Carbon dioxide is fixed through photosynthesis
- Respiration releases carbon dioxide
- Decomposition releases carbon dioxide
- Combustion releases carbon dioxide

Briefly describe how nitrogen is cycled through an ecosystem

Briefly describe how nitrogen is cycled through an ecosystem

- Nitrogen is fixed by lightning, the Haber process and bacteria
- Denitrifying bacteria release nitrogen back to the atmosphere

Why is recycling in ecosystems necessary?

Why is recycling in ecosystems necessary?

- To create a continuous flow of nutrients
- To provide fresh water

How would a decrease in oxygen availability affect the rate of decomposition?

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- Lack of oxygen causes microorganisms to respire anaerobically
- Anaerobic decay is slower than aerobic decay

How would a decrease in water availability affect the rate of decomposition?

How would a decrease in water availability affect the rate of decomposition?

- Decomposing microorganisms need water for chemical processes
- The less water available, the slower the rate of these processes

How would a change in temperature affect the rate of decomposition?

How would a change in temperature affect the rate of decomposition?

- A decrease in temperature slows the rate of the decomposition reactions
- A large increase in temperature will denature enzymes, slowing or even stopping decomposition

Give 4 abiotic factors that affect communities

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- Light intensity
- Temperature
- Soil pH
- Moisture levels

Give 4 biotic factors that affect communities

Give 4 biotic factors that affect communities

- Number of predators
- Food availability
- Disease
- Human activity

What are the 3 types of interdependence?

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Mutualism, parasitism and predation

What is parasitism?

What is parasitism?

- Where one organism lives on another and takes nutrients from the other organism
- This is beneficial to the parasite and detrimental to the host

What is mutualism?

What is mutualism?

- Two organisms depend on each other
- Both of the organisms benefit from the relationship

Give 4 things animals compete for

Give 4 things animals compete for

- Mates
- Space
- Food
- Water

Give 4 things that plants compete for

Give 4 things that plants compete for

- Light
- Water
- Minerals
- Space

What is a producer?

What is a producer?

An organism that makes its own food

What is a primary consumer?

What is a primary consumer?

An organism that feeds on producers

What is a secondary consumer?

What is a secondary consumer?

An organism that feeds on primary consumers

What is biomass?

What is biomass?

The dry mass of all of the living organisms in an area

Why is dry mass used for biomass?

Why is dry mass used for biomass?

Because the wet mass varies as the amount of water in the organism varies

How do you calculate the efficiency of biomass transfer?

How do you calculate the efficiency of biomass transfer?

efficiency = (energy transferred / total energy available) × 100

Why are biomass transfers not 100% efficient?

Why are biomass transfers not 100% efficient?

Energy is lost through

- Egestion (removal of faeces)
- Excretion (removal of urine)
- Respiration
- The production of inedible bones and shells

How does the efficiency of biomass transfers affect the number of trophic levels in a biomass pyramid?

How does the efficiency of biomass transfers affect the number of trophic levels in a biomass pyramid?

The less efficient the transfers, the fewer trophic levels and the fewer organisms in higher trophic levels