

Combined science - Biology - Key stage 4
Ecology

Biotic and abiotic factors

Dr Clapp



Independent practice

Define biotic and abiotic factors and give an example of each.

Biotic factors are ...

An example of a biotic factor is ...

Abiotic factors are ...

An example of an abiotic factor is ...



Independent practice

For each of the abiotic factors given below explain how they might affect a living organism:

Light intensity

Temperature

pH of soil

Oxygen content of water

Carbon dioxide levels in the air



Independent practice

For each of the biotic factors given below explain how they might affect a living organism:

Availability of food

Competition for space

An increase in predator numbers

A new disease



Independent practice - Answers

- Biotic factors are living parts of the environment that can influence living organisms
- An example of a biotic factor is the availability of food/new predators/new pathogens/competition
- Abiotic factors are non-living parts of the environment that can influence living organisms
- An example of an abiotic factor is temperature/light intensity/moisture levels/wind speed and direction/pH of soil/carbon dioxide levels/oxygen levels



Independent practice - Answers

- If the light intensity is too low then plants would not be able to photosynthesis as efficiently
- If the temperature was too high then enzymes would stop working and the organism wouldn't be able to survive
- If the pH of the soil was too low then organisms such as worms may not be able to survive in it
- If the oxygen content of water was too low then fish would not have enough oxygen to respire
- If the carbon dioxide levels in the air are too low plants would not be able to photosynthesise efficiently



Independent practice - Answers

- If the availability of food increases then organisms would be better able to survive and populations would increase
- If there wasn't enough space then the weaker organisms would be outcompeted
- If predator numbers increase then prey numbers would decrease
- If a new disease entered an ecosystem then organisms would die and populations would decrease

