How Humans Can Preserve Biodiversity

Answer the following questions:

1. State the definition of biodiversity.
   The variety of different species in an ecosystem.

2. State the definition of an ecosystem.
   The interaction of a community of organisms with the non-living parts of their habitat.

3. Why is high biodiversity important for an ecosystem?
   Each species is not dependent on just one other species.

4. Identify three resources that plants compete for.
   Sunlight, space, water, minerals.

5. Round 34928 to three significant figures.
   34900

How Humans Can Preserve Biodiversity
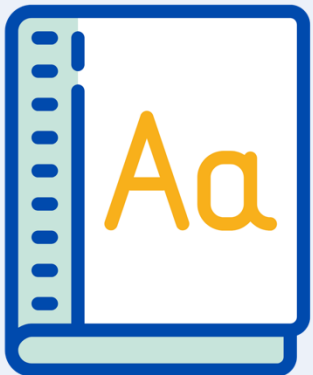
B3.2.4

Science
Mastery

Following this lesson, students will be able to:

- State that the growth of the human population has increased demand for resources

- Describe how scientists and citizens can reduce human impact on biodiversity

- Evaluate whose responsibility it is to reduce human impact on the environment

Key Words:

biodiversity   **population**

resources

This is the fix-it portion of the lesson

The **fix-it** is an opportunity to respond to gaps in knowledge, especially those identified by the previous lesson's exit ticket.

- The teacher should customise this slide as needed, to facilitate
  - **reteach**, **explanation, demonstration** or **modelling** of ideas and concepts that students have not yet grasped or have misunderstood.
  - **practise** answering specific questions or of key skills.
  - **redrafting** or **improving** previous work.

Answer the questions below.
1. Which statement is correct?
- ❑ A. It is fine to destroy peat bogs as long as peat is not burnt
- ☑ B. Peat bogs are a very large carbon store
- ❑ C. No species can live in a peat bog as it is acidic

2. Which best explains an effect of a growing population?
- ❑ A. Humans need more food than animals so more crops have to be grown
- ❑ B. More humans are growing bigger so need more food
- ☑ C. Humans are destroying habitats to be able to grow more crops

3. Which of these actions would not decrease biodiversity?
- ☑ A. Maintaining natural land
- ❑ B. Introducing a new species into an ecosystem
- ❑ C. Clearing forests to grow one single crop

Human Effects on Biodiversity

Scientists and many global citizens are using various methods to try to reduce human impact on biodiversity:

- **Breeding programmes** for endangered

    species

- Rare **habitat protection**

- Reducing **deforestation**

- **Recycling** resources to reduce landfill waste

- Growing **hedgerows** on farms

True or false?

a. An example of a rare habitat that is protected is a coral reef
   True

b. Reintroducing hedgerows on farms decreases biodiversity
   False - increases biodiversity because it provides a habitat for many different species

c. All breeding programmes always increase biodiversity
   False - selective breeding programmes will decrease biodiversity as they reduce genetic variation in a population

d. Deforestation is planting new trees to increase biodiversity
   False - deforestation is cutting down trees (for farming, building, etc) which reduces biodiversity

Which statements do you agree with?

One person cannot make a difference to waste, there is nothing I can do

The government of each country should be responsible for making people produce less waste

Companies should not be allowed to sell single use plastics

All countries are equally responsible for reducing biodiversity

Talk Task

Drill

1. Why has the demand for resources increased?
2. State why crop farming can reduce biodiversity.
3. State one thing farmers can do to improve biodiversity.
4. State one thing zoos can do to improve biodiversity.
5. State two other actions humans can take to improve biodiversity.
6. State one way deforestation can increase carbon dioxide levels in the atmosphere.
7. State one factor that may cause a plant species to become extinct. Do not refer to deforestation in your answer.

Drill answers

1. Growth of the human population
2. As farmers use the same crop, reducing the gene pool
3. Growing hedgerows on farms
4. Breeding programmes for endangered species, rare habitat protection
5. Reducing deforestation, recycling resources to reduce landfill waste.
6. Less photosynthesis
7. Disease, predator, competitor

I: Describe: *to recall facts, events or processes in an accurate way*

Describe the effect of protecting rare habitats on biodiversity.

Model answer:

- Protecting **rare** habitats allows habitats to regenerate and conserves space for organisms to live

- This increases biodiversity

To 'describe', your answer should:

- Use **bullet points.**
- Include each step of the process in a **logical order.**
- Use **keywords** throughout the answer
- Stay **focused** on the question.

We: Describe: *to recall facts, events or processes in an accurate way*

Describe the effect of introducing hedgerows on biodiversity.
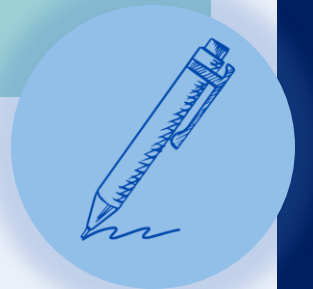
Model answer:

- Introducing hedgerows gives organisms new habitats to live in

- This increases biodiversity

To 'describe', your answer should:

- Use **bullet points.**
- Include each step of the process in a **logical order.**
- Use **keywords** throughout the answer
- Stay **focused** on the question.

You: Describe: *to recall facts, events or processes in an accurate way*

Describe the different actions humans can take to help maintain biodiversity.

- People can run, take part in or fund **breeding programmes** for endangered species.
- Humans can **protect rare** habitats such as mangroves and coral reefs to enable the habitats to regenerate.
- Governments and industries can reduce **deforestation** which will protect habitats and maintain biodiversity in the area.
- People at home can **reuse and/or** r**ecycle** resources to reduce landfill waste
- Farmers can reintroduce **hedgerows** on their farms to provide new habitats and increase biodiversity.

To 'describe', your answer should:

- Use **bullet points.**
- Include each step of the process in a **logical order.**
- Use **keywords** throughout the answer
- Stay **focused** on the question.

Writing like a scientist
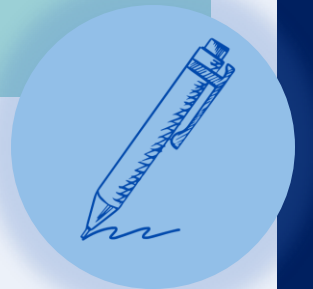
Answer the questions below.

1. Which of the following is not a way to maintain biodiversity?
- ❑ A. Protecting rare habitats
- ☑ B. Selective breeding programmes
- ❑ C. Reducing deforestation

2. Why would a farmer grow hedgerows on their farm?
- ❑ A. To use hedgerows as crops to sell
- ❑ B. To increase crop yield by making more space
- ☑ C. To increase biodiversity

3. Which of these actions would increase biodiversity?
- ☑ A. Maintaining nature reserves
- ❑ B. Introducing a new species into an ecosystem
- ❑ C. Using a selective breeding programme to produce more individuals with a desired characteristic

Lesson B3.2.4	
What was good about this lesson?	What can we do to improve this lesson?

Send us your feedback by clicking this link
or by emailing sciencemastery@arkonline.org
Thank you!