



# HOMework BOOKLET

**B7**

# Factors Affecting Ecosystems

Description of Scenario	Affecting Factor	Abiotic or Biotic?	Describe how species populations are affected – increase or decrease population? Explain why.
red and grey squirrels			<p>What will happen to the number of red squirrels?</p> <p>What will happen to the number of grey squirrels?</p>
cane toad introduction to Australia			<p>What will happen to the number of grey-backed cane beetles?</p> <p>What will happen to the number of cane toads?</p>
milkweed plant and monarch butterflies			<p>What will happen to the number of milkweed plants?</p> <p>What will happen to the number of monarch butterflies?</p>
Chalara dieback of ash			<p>What will happen to the number of ash trees?</p> <p>Suggest another species which may be affected.</p>

Homework 1



# Exam-Style Questions

Bronze



In one area of the meadow, there was a large oak tree. Suggest why the number of buttercups in this area was low.

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Silver



Describe how quadrats should be used to estimate the number of buttercups in a meadow.

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Gold



The meadow had an area of  $1200\text{m}^2$  and the pupils used  $0.5\text{m}^2$  quadrats. The mean number of buttercups per quadrat was 25.

Estimate the number of buttercups in the meadow.

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# Ecology

## Multiple Choice Questions

Homework 1

### Set 2

Tick **one** box.

1. Which of the following is an example of an abiotic (non-living) factor?

- A. availability of food
- B. introduction of a new pathogen
- C. soil pH and mineral content
- D. species outcompeting each other

2. Which term defines the interaction of a community of living (biotic) organisms and the non-living parts of their environment?

- A. ecosystem
- B. habitat
- C. niche
- D. population

3. Which of the following does **not** contribute to water pollution?

- A. fertiliser
- B. sewage
- C. smoke
- D. toxic chemicals

4. Which of the following is **not** an example of a greenhouse gas?

- A. carbon dioxide
- B. methane
- C. nitrogen
- D. water vapour

5. Which of these human actions has a positive impact on biodiversity?

- A. building
- B. farming
- C. quarrying
- D. recycling



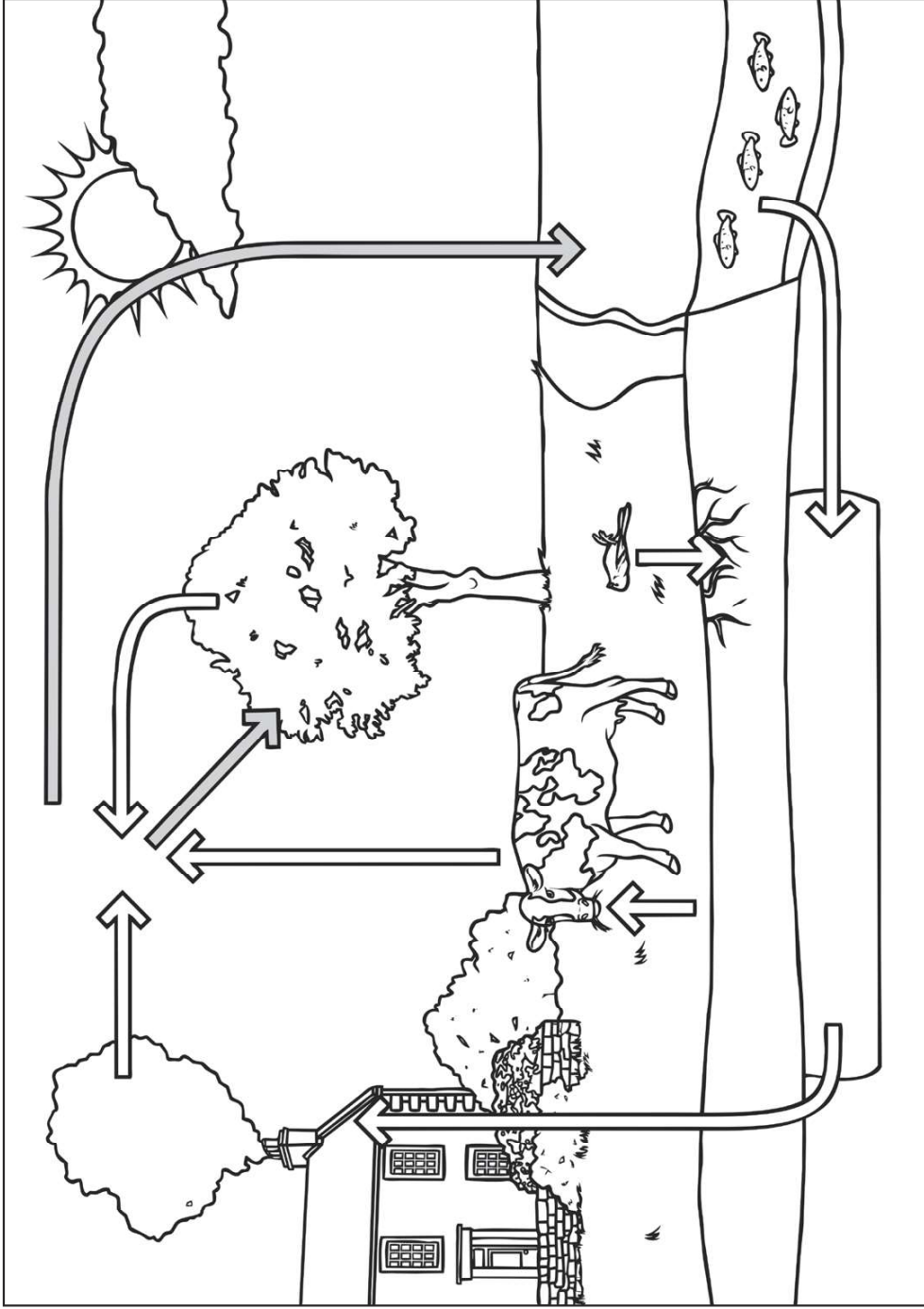
6. Which term describes an organism which is usually a green plant or alga that makes glucose by photosynthesis?
- A. predator
  - B. prey
  - C. producer
  - D. prokaryote
7. Which term describes how each species relies on others for things like food, shelter, pollination, and seed dispersal?
- A. biodiversity
  - B. ecosystem
  - C. habitat
  - D. interdependence
8. Which of the following adaptations of a cactus helps it to increase its water uptake in a dry environment?
- A. flowering only at night
  - B. large, shallow root system
  - C. sharp spines instead of leaves
  - D. thick waxy cuticle
9. In which of the following environments would you only find extremophiles?
- A. at moderate temperatures
  - B. at very high salt concentrations
  - C. in humid rainforests
  - D. in temperate oceans
10. Which of the following is **not** a method of maintaining biodiversity?
- A. breeding programmes for endangered species
  - B. destruction of peat bogs for compost
  - C. regeneration of rare habitats
  - D. reintroduction of hedgerows in agricultural areas

# The Carbon Cycle Diagram

Bronze

Read through your book **The Carbon Cycle** – **Choose Your Own Path**. Complete the diagram below by adding labels and information from the book.

Use the labels from the keyword bank on the right-hand side. You may use labels more than once or not at all.



## Keyword Bank

animals  
atmosphere  
carbon compound  
carbon dioxide  
combustion  
consuming  
death  
decomposing  
fossil fuels  
glucose  
micro-organisms  
photosynthesis  
plants  
respiration

Homework 2



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# Greenhouse Gases Match and Draw

Homework 2

Draw **one** line from each greenhouse gas to the correct formulae and **one** line to the correct description.

**carbon  
dioxide**

**SO<sub>2</sub>**

Produced by combustion of fuels, deforestation, respiration or volcanic eruption.

**methane**

**N<sub>2</sub>O**

Produced from combustion engines of vehicles, agriculture or through the nitrogen cycle.

**water  
vapour**

**CO<sub>2</sub>**

Produced by intensive cattle farming, landfill waste, volcanoes, wetlands and other animals.

**sulfur  
dioxide**

**H<sub>2</sub>O**

Produced from power stations or evaporation of oceans, seas, rivers and lakes.

**nitrous  
oxide**

**CH<sub>4</sub>**

Pollution from combustion of fuels in power plants or vehicles.

# The Greenhouse Effect

Silver 

True or false?

- a. The greenhouse effect is caused by human activity only. \_\_\_\_\_
- b. Water vapour is not a type of greenhouse gas. \_\_\_\_\_
- c. The greenhouse effect is not needed at all for humans to survive. \_\_\_\_\_

2. Name **three** greenhouse gases.

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3. Explain what greenhouse gases do. **Think about the purpose of a greenhouse for growing plants.**

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4. Suggest how the **environment** will be affected by global warming. (Give at least one specific example.)

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5. Suggest how **living organisms** will be affected by global warming. (Give at least one specific example.)

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# Exam-Style Questions

Bronze



For each of the statements below, write true or false. [3]

- The greenhouse effect is not needed to support life on Earth. \_\_\_\_\_
- Water vapour is a greenhouse gas. \_\_\_\_\_
- The greenhouse effect does not cause acid rain. \_\_\_\_\_

Silver



Complete the paragraph by choosing words from the box below. [5]

atmosphere	carbon dioxide	combustion	oceans
oxygen	photosynthesis	respiration	trees

The atmosphere contains approximately 0.04% \_\_\_\_\_, which is a greenhouse gas. Processes such as \_\_\_\_\_ of fossil fuels and \_\_\_\_\_ by plants and animals increase the CO<sub>2</sub> in the atmosphere.

CO<sub>2</sub> can be removed from the atmosphere into natural stores including \_\_\_\_\_. When the CO<sub>2</sub> is stored naturally, it means there is less in the \_\_\_\_\_.

Evidence shows that in recent years, the amount of greenhouse gases in the atmosphere has risen.

Gold



Explain how this results in global warming. [2]

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# Global Warming What's the Evidence?

Homework 3

Bronze



Read the statements below and draw arrows to show some causes and effects of global warming. One has already been done for you.

Cause	Effect
Increased level of greenhouse gas emissions from human activity.	Sea levels are rising.
Increased level of greenhouse gas emissions from human activity.	The snow on high land and the ice on the glaciers is melting.
The average temperature is increasing (global warming).	The average temperature is increasing (global warming).
Increasing growth of human population.	The humidity of the atmosphere and some ecosystems is increasing.
The glaciers and sea ice are melting.	Increased rates of deforestation to use the land for agriculture instead.

