

Food Security

GCSE Biology · Written to the shared content for AQA, Edexcel and OCR

Name _____ Class _____ Date _____

1. Worked example

Define food security and give two factors that threaten it. (3 marks)

Step 1 · Definition

Food security is having enough food to feed a population.

Step 2 · Factor 1

Increasing birth rates in some countries.

Step 3 · Factor 2

New pests and pathogens affecting farming (or drought, costs, conflict, changing diets).

Answer: Enough food for a population; e.g. rising population and new pests

Check: There are six main factors in the specification.

2. Now try one with the steps

A chicken gains 2.4 kg of mass from 4.0 kg of feed. Calculate the percentage of feed mass converted to body mass. (2 marks)

Step 1 · Fraction

Step 2 · Percentage

Answer:

3. Practice

Show your working. The marks tell you how much is expected.

1. What is food security? [1]

2. Give three factors that affect food security. [3]

3. Name the fungus used to make mycoprotein. [1]

4. What is mycoprotein grown on? [1]
-
-
5. Give one way the efficiency of meat production can be increased. [1]
-
-
6. Give one ethical objection to intensive animal farming. [1]
-
-
7. Explain why mycoprotein is grown in aerobic conditions. [2]
-
-
8. Give one way GM crops could improve food security. [1]
-
-
9. A pig gained 30 kg from 90 kg of feed. Calculate the percentage of feed mass converted to body mass, to 1 decimal place. [2]
-
-
10. A fishing quota was cut from 4500 to 3600 tonnes. Calculate the percentage reduction. [2]
-
-
11. Explain why a larger mesh size helps conserve fish stocks. [2]
-
-
12. Explain why eating less meat could improve global food security. [2]
-
-
13. Explain how biotechnology could help produce human insulin and food at the same time land use. [2]
-
-

14. Evaluate intensive farming way of improving food security.

[4]

4. Before you hand it in

"Mycoprotein is a type of meat."

Mycoprotein is made from the fungus Fusarium and is suitable for vegetarians.

"Keeping animals warm makes them use more energy."

In warm conditions less energy is transferred to keep warm, so more goes into growth.

"Quotas stop all fishing."

Quotas restrict the amount caught so the population can recover and stay sustainable.