Pollinators and Food Security

KS3 Biology · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

What is food security?

Step 1 · Definition

Food security means everyone always has access to enough safe, nutritious food for a healthy life.

Step 2 · Link to pollinators

Many fruits, vegetables, nuts and seeds need insects to pollinate them, so losing pollinators threatens a varied, healthy diet.

Answer: Reliable access to enough safe, nutritious food

Check: Food security is about variety and nutrition, not just calories.

2. Now try one with the steps

Explain why an apple orchard needs bees.

Step 1 · Pollination needed

Step 2 · Insect-pollinated

Step 3 · Role of bees

Answer:

3. Practice

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

1. What is pollination? [1]

2. Name ONE insect that pollinates crops in the UK. [1]

3. Name ONE crop that depends on insect pollination. [1]

4. Name ONE crop that does NOT need insects for pollination. [1]

5. What is meant by 'food security'? [1]

6. Give ONE reason why bee numbers are falling. [1]

7. Explain how bees and flowers depend on each other. [2]

8. Suggest ONE thing a school could do to help pollinators. [1]

9. Bees visited a bean field. Yield was 4.5 tonnes per hectare with bees and 3.6 without. By how many tonnes did bees increase the yield? [1]

10. Calculate the percentage increase in yield from question 9. [2]

11. Explain why losing pollinators would make diets less healthy even if there was enough wheat and rice. [2]

12. Some farmers hire hives of honeybees. Give ONE advantage and ONE risk of relying on honeybees only. [2]

13. A scientist counted 40 bees per hour on a wildflower margin and 8 per hour on a mown grass verge. How many times more bees were on the margin? [1]

14. Explain how a pesticide used to kill crop pests could reduce the yield of an insect-pollinated crop. [2]

4. Before you hand it in

"Without bees there would be no food at all."
Staples such, rice and maize are wind- or self-pollinated. But many fruits, vegetables, nuts and seeds would become scarce — a big blow to healthy diets.

"Only honeybees pollinate crops."
Bumblebees, solitary bees, hoverflies, moths and beetles all pollinate. Wild insects do much of the pollination in the UK.

Calculating percentage increase by dividing by the new value.
Percentage increase = (new − old) ÷ old × 100.