

Biology - Key stage 4  
Ecology

# Food security and farming

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# Independent practice

Complete the following sentences:

Food security is having \_\_\_\_\_ to feed the \_\_\_\_\_ .

Six reasons why some people don't have food security include \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ .



# Independent practice

Complete the following sentences:

Food security is having **enough food** to feed the **population** .

Six reasons why some people don't have food security include **increasing birth rates, pests/diseases, environmental changes, more food being transported, conflict** and **costs of farming** .



# Independent practice

1. How can we increase crop production to improve food security?
2. What is intensive farming?
3. Explain how keeping animals in small spaces can increase the biomass that is transferred to the next level of the food chain.
4. Why do people have ethical objections to intensive farming?



# Independent practice - answers

1. How can we increase crop production to improve food security?

**We can use fertilisers, insecticides, polytunnels and hydroponics**

2. What is intensive farming?

**A method that decreases the amount of energy animals use so that more can be transferred through the food chain**



## Independent practice - answers

3. Explain how keeping animals in small spaces can increase the biomass that is transferred to the next level of the food chain.

**It reduces the amount they can move so they don't use as much energy and more of it can be converted to biomass**

4. Why do people have ethical objections to intensive farming?

**They think it is unfair to treat the animals in this way as it gives them a poor quality of life**



# Independent practice

Explain how controlling net sizes and having fishing quotas ensure that fish stocks remain at sustainable levels.



# Independent practice - answers

Explain how controlling net sizes and having fishing quotas ensure that fish stocks remain at sustainable levels.

**Controlling net sizes means that not too many fish are caught in one go and also that in the most case only the right species of fish are caught so there are enough left to breed.**

**Having fishing quotas means that only certain numbers of each fish species can be caught ensuring there are enough left to breed.**



# Independent practice

Country X relies heavily on farming to provide food. The country has a high birth rate. In addition to this the country has experienced several years of drought.

1. Explain two reasons why food security is decreasing in country X.
2. Describe two ways in which biotechnology could be used to increase food security for country X.



# Independent practice - answers

1. Explain two reasons why food security is decreasing in country X.

**As there is a high birth rate the population will be increasing so more food will be required to feed everyone. (1)**

**As the country relies on farming to provide food and there have been several years of drought it is likely that crops are not growing well so less food will be available. (1)**



## Independent practice - answers

2. Describe two ways in which biotechnology could be used to increase food security for country X.

**The country could start to grow genetically modified crops which have a higher yield so there would be more food available for the population.**

**(1)**

**Or the country could start to grow genetically modified crops that have a higher nutritional value so that less crops could feed more people. (1)**

