

C3 LAT: What is the carbon cycle when applied to organic farming?



Introduction

On many organic farms the farmers keep animals and grow crops. They use manures instead of fertilizers. Therefore they use the dung from the animals to spread on the soil to replace the vital nutrients lost when growing crops. Organic farmers also use the rotation method in order to rest the land.

In this activity you will use the main activities to help you answer the task. The information below is a summarised version of these activities carried out on an organic farm:

- Cereal crops and vegetable crops are grown in a field.
- Animal manure is used to fertilise the fields.
- During the summer cows graze on the meadow and on hay from the cereal crops in the winter.
- Outdoor bred pigs are kept in a field with metal shelters.
- They also receive excess crops as food.
- Any other organic waste may be composted or burnt.
- All of the produce from the farm is sold in the farm shop: milk products, vegetables and pork products.

Task

Using the information provided draw a diagram of the carbon cycle for this farm.

You must incorporate as many of the key words as possible.

Other areas to consider are that you must identify, describe and explain:

1. Where the main stores of carbon are on the farm.
2. What the main processes for bringing carbon on to the farm are.
3. What the main processes for taking carbon out of the farm are.

Finally: 'Do you think that this farm is sustainable?' Explain your answer.

Key words

Animal, atmosphere, bacteria, carbohydrates, carbon, carbon compounds, carbon dioxide, chlorophyll, chloroplasts, combustion, death, decay, decomposer, decomposition, faeces, fats, global warming, glucose, growth, material, microbes, organic farming, organic material, oxygen, photosynthesis, plants, proteins, respiration, roots, sustainability.

To get your grade	You must include:
E	A drawing of a simple carbon cycle including the links of three carbon stores. Labelled the three stores of carbon. Identified two processes that show carbon entering and leaving the farm. Said whether the farm is sustainable and given simple reasons. Used simple sentences.
C	A drawing of a simple carbon cycle including the links of four carbon stores. Labelled the four stores of carbon. Described and labelled three ways that show carbon entering the farm and two leaving it. Explained whether the farm is sustainable and given at least two reasons. Written two word equations which involve carbon. Use simple chemical symbols. Written the task in your own words, using correct grammar and most of the key words.
A	A drawing of a detailed carbon cycle including the links of four carbon stores. Describe and label three ways that show carbon entering and leaving the cycle, with explanations. Written three word and symbol equations involving carbon. All work written in your own words using correct grammar and all of the key words.