

# **Cereal Food Story**

*Piecing together....*

*The starchy carbohydrate food story.*

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# **Answers**

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Your Name

GCSE Food Preparation & Nutrition

Teacher's Name

## FOOD PROVENANCE – CEREALS FOOD STORY

Today's Learning - **ANSWERS**

- Describe the stages of the cereal food story.
- Describe what precision farming is.
- Explain how farmers use precision farming to protect the environment.
- Explain how protecting the environment makes cereal production sustainable.



Your task is to watch the videos at:

<http://discovering-our-countryside.co.uk/cerealfoodstory/>

Then answer the questions for each video

Read the important instructions for saving this Food Story Workbook – towards the end of this document to prevent losing your work – [read now](#)

### CEREALS INTRODUCTION

 Watch Cereals Intro Video

Cereals belong to the potatoes, bread, rice, pasta 'Eat Well Guide' food group. They are a **(Q1) good source starchy food** which should make up just over a third of the food you eat.

**(Q2)** List the 3 main types of cereals grown in this country **Barley, Oats Wheat)**



### PREPARING THE LAND

 Watch Preparing Land Video

Winter cereals are sown in the **(Q3) Autumn** and harvested the following summer. Spring cereals are sown in the spring and harvested the **(Q4) same** summer.

When cereal seed comes into contact with soil it takes up moisture and **(Q5) germinates**.



Ploughing is part of the farmers integrated pest and disease management. Ploughing buries any residues of the previous crop which may harbour **(Q6) pests and disease** that could infect the new crop.

Sometimes a farmer may use a different machine to prepare the seedbed and sow the cereals in one pass of the tractor. This is good for the farmer as **(Q7) saves fuel** it is also good for the environment as it **(Q8) produces less pollution**.

### SOWING THE SEED

 [Watch Sowing the seed Video](#)

Farmers use a machine called a **(Q9) Seed Drill** to sow seeds with. The amount of seed sown is controlled by **(Q10) a computer in the tractor cab**.



Precision Agriculture means **(Q11) getting more for less**.

Precision Agriculture is good for the farmer because it **(Q12) saves money** it is also good for the environment because **(Q13) uses less resources**

### CARING FOR CEREAL CROPS – CROP HUSBANDRY

 [Watch Crop Care Video](#)

Once the farmer has planted his cereal crop he must look after it until it is ready to harvest – for a crop sown in the Autumn (called winter cereals) this can be for 10-11 months until the following summer when they are harvested.



A cereal farmers goal is to grow lots of **(Q14) healthy plants**

Such plants have leaves that are able to capture as much light as possible for photosynthesis allowing them to make as much **(Q15) glucose** as they can.

**(Q16)** The plants then use this glucose with other nutrients such as - *select the 3 main nutrients plants need, Nitrogen, , Phosphate, Potash*

### PROVIDING CROP WITH EXTRA NUTRIENTS

 [Watch Applying Fertiliser Video](#)

Farmers will test the soil in a field for **(Q17) nutrients**

He will then use this information to create a **(Q18) nutrient map**.

This map is then used to work out how much extra nutrients each area of the field needs.



Farmers apply any extra Nitrogen, Phosphate or Potash the crops need either in the form of farm yard manure or artificial fertilizer.

The fertiliser is applied with a fertiliser spreader that is controlled by a **(Q19) computer** in the tractor cab

This means that the fertiliser can be applied **(Q20) with precision**, just as required in each part of the field according to the field nutrient map.

**(Q21)** The benefits of applying fertiliser in this way are **Correct 3**:

1. Less fertiliser is used saving the farmer money
2. The fertiliser is applied accurately according to the field nutrient map
3. Fertiliser is applied in a way that is safe for the environment

You can be sure you are buying food produced under farm assurance schemes rules by looking for the **(Q22) Red Tractor** on the food packaging.

#### PROTECTING PLANTS FROM ATTACK

 [Watch Pests & Disease Video](#)

To get healthy plants a cereal farmer must protect his plants from

**(Q23) pests and disease** especially the leaves so that they photosynthesise at the maximum rate.



**(Q24)** Pests and disease are bad because they can **damage the crops leaves reducing crop yield**

Farmers will try to control pests and disease by using **(Q25) an integrated** approach which involves a combination of methods: crop rotation, cultivations plus chemicals

**(Q26)** What do farmers do to make sure they can control pests and disease as safely as possible: **Take a test to make sure they use chemicals safely**

#### HARVESTING THE CROP

 [Watch Harvesting Cereals Video](#)

Cereals are harvested by a machine called a using **(Q27) Combine Harvester**. They record the amount of crop harvested (yield) as they work.



Coupled with a Global Positioning system they can create **(Q28) yield map** for each field.

The farmer can then link this yield map with the field nutrient map he used to apply fertiliser this allows him to **(Q29) check if his fertiliser plan was successful**.



## USES OF CEREALS.

 Watch Use of cereals Video

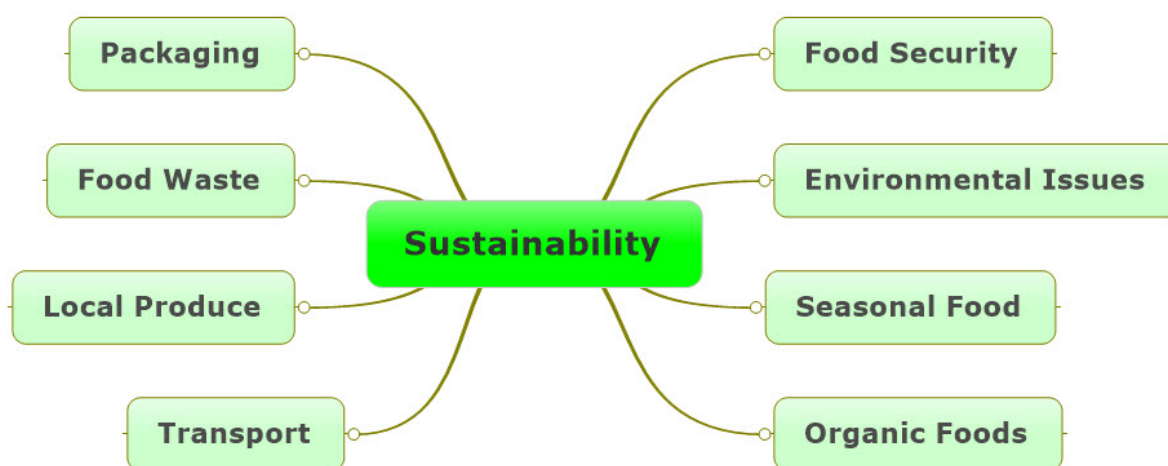
All cereal grains are similar to each other in structure.

Wheat is one of main cereals grown around world so forms a valuable part of the (Q30) carbohydrates in our diet.



(Q31) Cereals can be used for making All correct Beer, Malt, Flour, Animal Feed, Pasta, Flavouring in many products, Fuel – ethanol

## THE CEREAL FOOD STORY AND SUSTAINABILITY.



Sustainability can be a difficult idea to grasp – the definition of sustain is to carry on or maintain doing something. So, in terms of food production its simplest definition means can we keep producing food. Well clearly, we can and will keep producing food – but the actual term sustainability is more complex than about just keeping producing food. It basically asks can we keep producing food in the same ways that we are doing at the moment, for the next 10, 20, 100 years? This then brings in the issues shown above. This then becomes a more complex problem and the answers are not always clear depending on who you ask, their point of view and indeed your own point of view, such as does the environment matter?

Each of the food stories of the Eat Well Guide:

- Cereals
- Beef
- Dairy
- Fresh Produce

covers a different aspect of sustainability. So, once you have completed them all you should have a better understanding of the issues around sustainability.



### *The Cereals Food Story and Sustainability.*

The cereal food story has links to several environmental issues.

Growing cereals using artificial fertilisers and chemical sprays is often referred to as 'Intensive Farming' – some people think using large amounts of fertiliser and sprays is bad for us and the environment as the fertiliser and sprays can contaminate water in rivers and dykes. Sprays can also kill insects and other wildlife which are not pests and are actually helpful to the farmer such as bees and ladybirds.

The sprays and fertilisers are also made from oil or use fossil fuels in their production so may not be sustainable in the long term. Cereal farmers and the agricultural industry are well aware of these issues and arguments against their methods of production and are doing what they can to deal with these – and at the same time trying to ensure they produce as much food as the population needs.

This is one way of using key words. "



"Cereal farmers grow cereals such as wheat barley and oats. They aim to produce as high a yield as possible by using an integrated approach to control pest and disease. Part of this approach involves precision agriculture which uses Global Positioning System (GPS) and computer control to get more from less, at the same time protecting the environment. Using this modern technology means farmers apply just the amount of fertiliser a cereal crop needs according to a field nutrient map and then checking its effectiveness by mapping the yield on a yield map. Chemical sprays are used of other integrated controls such as cultivations or crop rotation don't control the pest of disease sufficiently. These sprays are applied also under the control of GPS and an in the cab computer control which means they are applied very accurately and only where needed."

