

THE MALTING BARLEY STORY

a year in the life of a cereal traveller.



These teacher notes are designed to accompany the poster 'The malting barley story'. They are intended for use with your Key Stage 2 classes, but can be adapted for use with other Key Stages.



THE ADVENTURES OF BARLEY MALT



A year in the life of a cereal traveller.

The questions and activities follow the four stages of malt production, providing learning opportunities for children of all abilities. The resource encourages the exploration of various areas of the Literacy Strategy with questions and activities to support

learning across the framework. The **'malting barley story'** poster provides an excellent overview of the growing of malting barley and the production of malt. To support the poster, the questions and activities are divided into four sections: **The Farming Year,**

Distribution and Use, The Malting Process and Barley and Malt products. Each section contains questions and activities relating to the production of barley for malting along with a guide to National Curriculum coverage for English.

The story begins...

Barley is a type of seed that is similar to wheat and although it can be ground to produce flour the majority of use for human consumption is as malt for the food and brewing industry. **After wheat, barley is the most widely grown arable crop in the UK.**

Some varieties of barley can be sown in the autumn and are able to survive in the ground over winter to be ready for harvest in mid July. These are called winter barleys. Other varieties of barley are sown in spring and are ready for harvesting in August. These are called spring

barleys. Nearly **2 million tonnes of barley is used for malting**, a process of wetting the grain to promote germination before drying on a kiln. The malted barley is full of flavour and are used in the production of beers, spirits and food products.

1 The farming year

The months between sowing the barley and harvesting the crop are filled with a variety of activities to ensure that there is a high yielding crop. These activities include the careful addition of fertiliser and the control of the many diseases and pests which can affect the growing crop. Although the basics for growing barley have been around for 6,000 years, modern cultivation methods coupled with carefully selected varieties now result in a crop of consistent high quality.

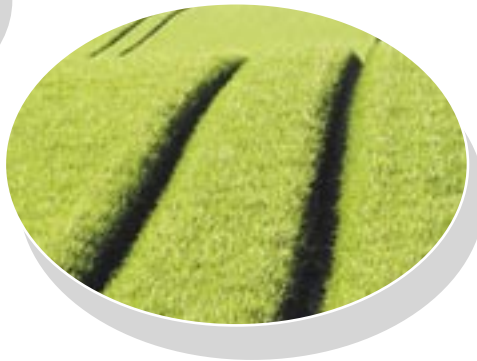
Q1 Why does the production of winter barley start in September?

(Sowing conditions are ideal – warm, wet soil)



Q2 Why do you think that March through to June are important months to use fertiliser, disease and pest controllers?

(These are the months when the barley needs essential nutrients to grow as long as any harmful pests and diseases are controlled by using chemical or organic methods).



Q3 Why doesn't a tractor damage the seeds or young plants when it drives across fields of barley or wheat?

(The seed drill, which is used to sow the crop, has the ability to make 'lines' in the soil by not sowing seeds in some of the 'coulters' (tubes that place the seed in the soil). These parallel lines are known as 'tramlines' that allow farmers to drive through their fields to fertilise or spray without causing damage to the surrounding crop. Sometimes, before the crop has emerged, the drill will lower a set of discs which leave a mark in the soil for the tractor to follow. The tramlines are usually about the width of a tractor tyre (30cm) and 200cm apart).

Activities!

No.1

The production of barley includes a wide variety of words that we may not be too familiar with! The poster provides a selection of words connected to the barley year. Ask the pupils to try and find out what the different words mean. This could be attempted by asking them to try and guess what the word means and then look for a definition or use a dictionary and the Internet to determine what it means.

Word List:

Cultivation,	Fertiliser,
Drilling,	Ploughing,
Disease,	Organic,
Harvest,	Pesticide.

(Speaking & Listening: **En1 1a.**
Reading: **En2 1b 5a 5b**)

No.2

Looking at the poster, can the pupils divide the farming year into the four seasons? Ask them to produce their own poster showing the farming year and the appropriate seasons. Ask the pupils to compare a growing area that they are familiar with (it may be at school or their garden at home) with the growing seasons on the poster. Ask them to identify and compare activities that they do in their growing area to those activities that a farmer does. What are the similarities? Once they have completed this activity, ask them to write a diary for a particular season. The diary will need to observe how the season changes, how the changes affect the pupil and describe how they react to the season.

(Writing: **En3 1a 1b 1c 1d 1e**)

No.3

Ask the pupils to suggest words that they associate with different periods of the year. For example, 'excited' for a birthday, or hot, cold, freezing, sweating, breezy for weather. Using some of these key words, ask the pupils to write a poem that conveys the feeling of a season.

(Writing: **En3 5a 5b 12**)

2 Distribution and Use

Every year the UK produces between 5 and 6 million tonnes of barley, with approximately 3 million tonnes used for animal feed and about 2 million tonnes used for malting. Any surplus is usually exported.

Q1 Barley is the second most widely grown arable crop in the UK. What do you think is the most widely grown arable crop?

(Wheat is the most commonly grown arable crop in the UK with 15.5 million tonnes grown in 2004 and 5.8 million tonnes of barley).

Q2 What happens to the barley straw after the crop is harvested?

(Barley straw is used to feed livestock as well as being used as bedding for animals. This is different to hay, which is a type of grass specially grown as a food crop for feeding animals. Straw is a 'by-product' of the harvesting process).



Activities!

No.1

Using the Internet, visit some of the sites listed in the **'Teacher resources'** and choose an image that intrigues, challenges or is just visually interesting. With the pupils working in pairs, ask one partner to describe the chosen image to their partner who hasn't seen the picture. The second partner will then try and draw the image based on the description they are given. The second partner should then write a description of their drawing without having seen the original image. Does the written description match the original image? What happened to make the image look like that? Write an explanation to suggest who made the image look like that? Was it designed by an artist? Was it caused by the weather or did something out of this world make a visit?

(Speaking & Listening: **En1 1e 1f 3e 8a 9a**. Writing: **En3 1c 1d 56a 5b 9a 9b**)

No.2

Ask the pupils to research and explain, using their own sentences, the words:

'hectare',
'distribution',
'cereal',
'production', and
'arable'.

(Speaking & Listening: **En1 1a 1b 1c 10a 10c**)

No.3

Using the following words, ask the pupils to write a short story combining all of the words in any order. The words can be used as often as necessary provided all of the words are used at least once in the story:

Fox, **Storm,**
Barley, **Barn,**
Straw, **Cockerel,**
Farmer, **Quad-bike,**
Apples, **Donkey.**
Tractor,

(Writing: **En3 1a 1b 1c 1d 1e**)



3 The Malting Process

Growing the barley and harvesting the crop are only the first stages of the journey. Malting is a process of wetting the barley to promote germination before it is dried in kilns.

Q1 What does the word 'germinate' mean?

(To begin to grow or cause to sprout).

Q2 By reading 'Stage 3: The Malting Process' on the poster, work out how many days or hours the whole malting process takes.

(The four stages of the malting process take 7-8 days).

Q3 The fourth stage of the malting process uses a kiln. What does a 'kiln' do? What other activities makes use of a kiln?

(A kiln heats the air and reduces the moisture content of the grain. Kilning also generates colour and flavour. A kiln is also used in pottery to 'fire' pots).

Activities!

No.1

Using the four stages of the malting process outlined on the poster, match the following descriptions to the correct stage of the malting process.

- a. transfer to a germination vessel
- b. sample the grain
- c. soak in water
- d. reduce the moisture content
- e. store grain in silos
- f. create air rests
- g. transfer to kiln.
- h. grow under controlled conditions

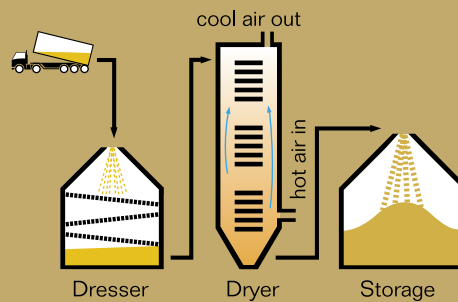
(Reading: **En2 2a 2b 2c 2d**)

No.2

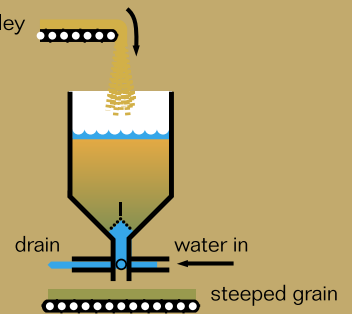
Read through the four stages of the malting process on the poster. Rewrite the description for each stage so that it summarises the process in one sentence.

(Writing: **En3 1b 1c 1d 1e**)

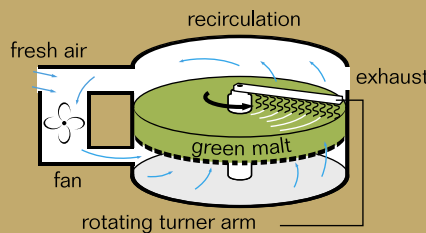
Stage 1: Barley stage



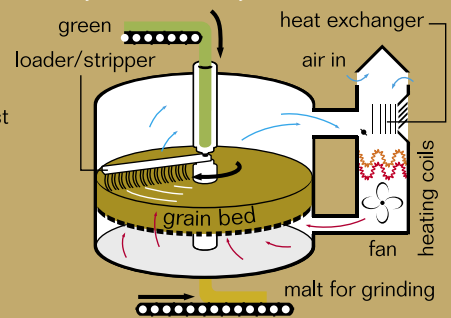
Stage 2: Steeping



Stage 3: Germination



Stage 4: Kilning



No.3

Split into groups of four to six pupils. Using the word list created in the previous activity, write each of the words on a separate card. On a table or work-surface have four large pieces of paper representing each stage of the malting process. Shuffle the cards and share them out between the members of the group. In turn place a word card on

the correct stage of the process. If one of the group places the word on an incorrect stage of the process, they must miss a turn. The game continues until all the word cards are correctly placed on the appropriate stage of the malting process.

(Speaking & Listening: **En1 1a 1b 1c 1d 1e 1f**)

4 Barley and Malt Products

Barley and malt products can be found in every supermarket and in most homes. You might be surprised just how many everyday products contain barley or malt!

Q1 What are the two main seasonal types of malting barley grown in the UK?

(Winter and spring).

Q2 What ingredients are required to make a malt loaf?

(The basic ingredients required are malt flour, malt extract, salt, yeast, water, raisins & vegetable oil).

Q3 What does the 'Red Tractor' logo mean?

(The "Red Tractor" was established in 1999, to be a recognisable stamp of approval for a wide range of foods. It means that all foodstuffs with this logo are independently inspected to maintain high standards of quality and safety).



Activities!

No.1

Which of the following are not types of bread or flour-based products? You might need to search the Internet to help you complete this activity.

- a. Huffkin
- b. Bara brith
- c. Sally Lunn
- d. Muffin
- e. Stotty
- e. Bannock
- f. Radish
- g. Bap
- h. Closet
- i. Clottie
- j. Coburg
- k. Bath
- l. Gutter
- m. Pikelet
- n. Farl

What other names for bread can you think of? Are there any local names, which are peculiar to your area? Why not invent some names for bread such as 'Crumbob' or 'Graindoh'?

(Reading: **En2 2a 2b 2c 2d 3a 3b 3c 3d**)

No.2

Make a list of all the products that you have at home that contain barley or malt. Make sure that you read the labels carefully. Sometimes barley or malt is clearly visible on the main label and sometimes it's listed amongst other ingredients...read the small print! As a class, decide what categories you might want to list your barley and malt products under. For example, breakfast, lunch, tea, dinner, supper or cold drink, hot drink, cereal, bread, cake or you might have ideas of your own.

Place the class lists into your chosen categories and decide how you can present your information to an audience. For instance, is it easier to present the information as a series of graphs or using pictures of the products which are larger or smaller depending upon how many of these products are to be found at home?

(Speaking & Listening: **En1 1a 1b 1c 1d 1e 1f**)

No.3

Imagine that you are part of a film production company who have been asked to make a TV commercial called '**The Malting Barley Story**'. Working in small groups, you must decide what information needs to be in the commercial and how you are going to make the commercial interesting for everybody. You might like to use cartoon characters, a sleepy family wondering where their breakfast cereal comes from or a farmer who follows his barley crop from the field to the supermarket. Once you have decided how to present the commercial, make a storyboard, using words and pictures, that shows how your commercial will look.

(Writing: **En3 1a 1b 1c 1d 1e**)

Barley and Malt Products



CEREAL FLAKES



BREAD MIX



BISCUITS



WHISKY



BREAD



MALTED DRINK



BEER

Resources for Teachers

A whole range of resources is available to help you with this topic.
The majority of really useful information is simply a couple of clicks away!

Try

www.hgca.com

Which provides an extensive range of information and a special category for education

www.ukmalt.com

The MAGB: Maltsters Association of Great Britain website containing information on food safety, malting process

www.face-online.org.uk

For all matters rural and loads of resources

www.ukagriculture.com

With sections on the four seasons, field to fridge and multimedia material

www.english-nature.org.uk

Ideas and information on wildlife and a category on nature for schools

www.teachernet.gov.uk

Providing a whole range of resources and ideas

www.wfu.org.uk

The Women's Food and Farming Union covering a range of rural topics

www.nfu.org.uk

The National Farmers' Union for all things to do with agriculture and an education category

www.flourandgrain.com

Includes resources for teachers, facts and figures and a homework section!

