Bread

Information, recipes

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Introduction

There is a lot of factual information in this booklet but also recipes and methods for making bread. Pick and choose which parts of the booklet you want to use with your children depending on their age and your interests. Enjoy learning together!

Sue Hudson (www.breadworkshops.co.uk) working in partnership with LEAF Education (formerly FACE), provided a workshop for teachers and on-farm educators which was an introduction to bread making skills and cross curricular links for a bread based topic in school. This resource has grown from that workshop. We hope parents and home educators will find it useful to introduce their children to this fascinating - and tasty - activity.

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Some facts about bread and wheat flour

In the UK most bread is made with wheat flour although alternatives such as spelt (a primitive wheat) or rye flour are available in many specialist shops and fun to experiment with.

Ideally the flour you use for making bread should be milled as locally as possible, that way you are supporting your local mills and local farmers! But in the current situation, use the best you can lay your hands on! Most supermarkets sell strong flour for bread making – don't use plain or self-raising flour – these are suitable for cakes, biscuits and pastry but not bread.

Strong or extra strong flour is ideal for bread making as it has a lot of gluten and will produce a lovely loaf. Gluten acts like an elastic band and holds the loaf's shape, a very important factor when making bread.

Some different sorts of flour for bread making:

Strong white flour: contains 72-75% of the wheat. The bran and wheatgerm which give wholemeal and brown flours their colour have been removed – the resulting white flour makes a closer textured bread.

Strong flour: contains a large proportion of flour made with wheat that is high in protein – when mixed with water the proteins combine to form gluten which gives the dough its elasticity when kneaded and allow it to trap the bubbles given off by the yeast.

Wholemeal (or wholewheat) flour: The entire wheat grain is milled to produce whole-meal flour. This results in a course textured, nutty tasting bread which is brown in colour.

Brown flour: contains about 85% of the wheat grain – some bran and wheatgerm have been extracted.

Granary flour: malted wheat flakes are added to a brown flour – sometimes wheat and rye flour are mixed to produce granary flour.

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Stoneground: this name refers to the grinding process during which the flour is heated and has a slightly roasted, nutty flavour as a result.

Rye flour: There are different sorts of rye flour – different colour and coarseness. Rye flour contains some gluten but is sticky to work with so bakers generally mix it with other flours.

For information about mills in your region use an internet search engine and search for flour mills.

www.sourdough.co.**uk/british**-artisan-**flour-mills**-by-region/ includes quite a long list.

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Information about yeast

Yeasts are living single celled organisms that are found everywhere in the world around us. For example there are varieties of yeast on our skin, in the air, and on the skins of fruit and vegetables. The yeast used in baking bread is responsible for the fermentation – producing carbon dioxide which creates the rise in the dough. When the yeast comes in to contact with warmth (water) and carbohydrates (flour) it produces carbon dioxide hence the bubble holes in bread.

Yeast used in baking

Readily available dried yeast is a convenient way to buy and store this product, either **fast action dried yeast** or active dried **yeast** . The advantage of fast action yeast is that it can be put directly into the flour without fuss). It is more concentrated than fresh yeast so usually less is required in a recipe.

Fresh yeast is a lovely product to use, it can be obtained from some supermarkets – those that have an in-store bakery.

10 grams fresh yeast = 7 grams dried yeast

Whichever yeast you use, it will produce carbon dioxide when it is mixed with warm water and carbohydrate and create the rise in the bread dough.

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Baking bread

Making a traditional split tin loaf

Equipment

Scales (digital if possible)

Mixing bowl

Measuring jug

Spatula or Dough scraper (optional)

2lb loaf tin

Baking paper tin liner (optional)

Sharp knife with serrated edge (such as a steak knife)

Shower cap or tea towel to cover bowl for the prove

Wire cooling rack

Ingredients

500g strong white bread flour

8g table salt

10g fresh yeast (7g dried yeast)

300g tepid tap water (measuring water by weight is more accurate)

Flour for dusting

Method

Place flour and salt into a bowl, mix together, then flake yeast into mixture and combine with fingertips until it resembles breadcrumbs.

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- Add water and mix in the bowl until dough starts forming into a loose ball, tip out onto work surface and knead for 10 minutes

Skill: You should not cheat and knead for less than 10 minutes, kneading is the most important part of your bread creation and where people often go wrong. Try to knead the dough with a stretching motion, using both hands, trapping the dough with one hand and pushing it away with the other, then roll up the dough and start again. This action develops long chain molecules.

- Form kneaded bread into a ball and put it in the mixing bowl – cover and "prove" for about an hour until the dough has doubled in size.

Skill: Proving the bread for around an hour or at least until the dough is doubled in size "proves" that the yeast is alive and creating bubbles, but also the flour is softened and the gluten rested.

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- Tip dough out of bowl, flatten and roll up to form a flat sausage about the size of your loaf tin.

- Place dough, joint underneath, into the loaf liner and then into tin.

- Leave to recover for about 30 minutes, dust with flour and then slash a deep cut the length of the dough

- Bake at 200C (400F, Gas 6) for 30 minutes until the loaf sounds hollow when tapped on the base.

- Cool on wire rack.

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Making a pizza base –recipe makes two pizzas

Equipment

Scales (digital if possible)

Mixing bowl

Measuring jug

Spatula or Dough scraper (optional)

Tbsp measure

Ingredients

200 g strong white bread flour

10g yeast (7g dry yeast)

120g tepid tap water (measuring water by weight is more accurate)

2 tbsps Extra virgin olive oil

3g table salt

- Place flour, yeast and salt in a bowl, add the water and 1 tbsp olive oil.

Skill: When mixed together tip on to work surface and knead for about 5 minutes until soft and elastic. Return to the bowl and cover, "prove" for 30 minutes.

- Tip dough onto work surface and divide into 2. Push each dough ball out to create 2 pizza size discs (about 10" diameter) and place on oiled baking trays.
- To create pizza **margherita** spread top with passata, cubes of mozzarella cheese (about one ball of mozzarella) and drizzle with olive oil or toppings of your choice.
- Bake for 10 minutes in hot oven.

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Discovering wheat

1. **Wheat is a cereal crop** – like barley, oats and rye. These cereals belong in the grass plant family and look similar to grass as they are growing.
2. **Wheat is grown for food** – the wheat seeds contain the food, for people and for animals. The seeds are at the top of the stem – often up to 30 seeds per head or ear of wheat.
3. **Wheat is a monocot plant** i.e. one leaf grows from the seed. The growing plant will probably send out side shoots called tillers which will each grow a stem that will produce an ear, so one wheat seed may yield 500 seeds at harvest time.
4. **There are two sorts of wheat:**

   Milling wheat which is used as food for people, mostly ground into flour in a mill (modern mills look like enormous factories) which would be used for baking – bread, pasta, biscuits cakes etc. Also rolled to make breakfast cereal such as Weetabix.

   Feed wheat – the grains are used as food for farm livestock such as chickens, pigs or calves.
5. **Wheat grows well** where there is plenty of warm (not too hot) weather and rain to keep the ground moist while it is growing.
6. **Farming year for wheat:**

   Wheat seed is sown into a prepared field in either early autumn or late winter. The autumn sown seed sprouts and grows through the winter and is called winter wheat. Seeds sown at the end of the winter grow during the spring and are called spring wheat. Both types grow on through the spring and early summer and will be harvested in July/August.

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Discovering wheat

7. **Scientists**, for example at the John Innes Centre in Norwich, are researching to improve wheat yields and disease resistance.
8. **Technology,** for example computers on board combine harvesters that record the yield in each field as the crop is harvested, help arable farmers make the most suitable and economic use of fertilisers or sprays against wheat diseases.

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Ideas for activities

Foods we eat that are made from wheat:

Make a display of a variety of food packaging the majority made from wheat e.g.

e.g. Loaf of bread, flour, Weetabix, shredded wheat, pasta (made with durum wheat),

and with several non wheat products *e.g. rice, cornflakes, baked beans, sweetcorn, yogurt, potato crisps*

and with some foods that include wheat *e.g. biscuits, cakes, crumpets, pancakes*

For older groups you could include eggs or bacon (feed for hens/pigs usually contains wheat)

Use the display for a quiz, with children trying to sort out which foods contain wheat.

For younger groups use the traditional story of **The Little Red Hen** to introduce wheat, how it grows and how it is made into bread. (If you don't have the book, put the title into a search engine—there are even videos you can watch).

Farm machinery used to grow wheat.

Technology: Investigate how the farmer uses each of these: plough, seed drill, fertilizer spreader, combine harvester, trailer, bulk lorry, computer, drone with camera

See PowerPoint presentation at *http://www.countrysideclassroom.org.uk/resources/1166*

History: How were the same jobs done 150 years ago? 550 years ago?

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Recording the project on a ‘memory stick’

The ‘memory stick’ is based on a journey stick activity often used with KS1 groups during sessions outside the classroom.

This version is designed to be used at the end of a discovering wheat session to record the main points that have been learnt. For many children tying the labels and items onto the stick is challenging and the task requires knot tying skills and teamwork.

To speed the memory stick activity at the end of a busy moment we have used photocopied labels but ideally the children would create their own.

On this memory stick they recorded:

An ear of wheat

Pasta – a reminder that foods other than bread are made from wheat

Some farm livestock feed includes wheat seeds.

The largest machine used on farms for wheat production is a **combine harvester.**

The **amount of wheat produced in a square metre field** and the bread that it will make.

We also attached name labels and wrote one extra wheat discovery on the back of the label.

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A square metre mini-field

WHEAT

In 1 square metre a farmer will plant

about 300 wheat seeds

At harvest time they will produce

1 kg of wheat seeds

which is enough to make

800grams of flour

which is enough to bake 1 large loaf of bread

1 kg wheat seed included in chicken rations will help the chicken lay 11 eggs

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WHEAT – one square metre of wheat crop

Input per m2	
Seeds	250 - 300
Pesticide/spray	1.5 ml
PK fertiliser	30g
N fertiliser	58g
Harvest	
Yield	1 kg
Which will make	800 g flour
Which will make	1 large loaf of bread
In chicken feed	11 eggs

Wheat is a cereal crop – like barley, oats, rye

Cereal crops are members of the grass plant family

Wheat is either sown in the late summer/ autumn and grows through the winter or is sown in the late winter/spring

Winter and spring wheat is usually harvested in July/ August

Different varieties of wheat have different qualities, for example flour is more suitable for bread or for biscuits.

A lot of wheat is used as animal feed

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Lunchbox Science

Wheat

Extracts from wheat lesson plan

Background information

Wheat developed from wild grass plants in the middle east (Syria, Lebanon, Iran, Iraq) about 10,000 years ago. It was one of the earliest crops to be cultivated and is now the third most widely grown crop in the world - after maize (sweet corn) and rice.

Wheat has a relatively short growing season and thrives in temperate climates.

The wheat seed is the part that we use, mostly ground into flour for baking into bread, biscuits etc (milling wheat). The stems (straw) and roots are usually recycled by the farmer: ploughed back into the soil or the straw used for animal bedding. A lot of the wheat grown in this country is fed to farm livestock (feed wheat).

One wheat seed grows several shoots and so at harvest farmers expect to gather about 500 wheat seeds for every one seed that has been planted. On average a square metre area of wheat will produce a kilo of wheat seed that will grind into 800 grams of flour – enough to bake a large loaf.

There are generally two types of wheat, which are called hard wheat, and soft wheat. The hard wheat produces flour with highest levels of gluten – essential for bread making. Hard wheat grows best in the USA and Canada so much of the bread that we eat is made from wheat grown abroad. However plant breeding has produced some harder wheat varieties that will grow in this country so it is possible to buy 'locally grown bread' mostly from small scale 'artisan bakers' who use wheat from local farms. Most of the milling wheat produced in the UK is used for biscuits etc.

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Activity : Question and Answer game

1. Place paper with one of the following letters (A, B, C, D) in each corner of the room.
2. Ask the children one of the questions below and tell them to go to the letter they think is the correct answer.
3. When you reveal the answer, only the children who were correct continue. The children who have the most answers correct win the game (last people playing). If you have only one child at home, just use this as a fun quiz.

Question 1

If we planted one wheat seed – How many roughly could we expect to get back when the wheat plant is harvested?

A) 5 B) 10

C) 100 D) 500

Question 2

What does a wheat seed need to germinate?

A) A nice bedtime story B) Sunshine

C) Warmth and water D) Coca Cola

Question 3

Which of these plants is most related to wheat?

A) Carrots in a farmer's field B) Grass on a playing field

C) Cabbages in a garden D) Peas on a plate

Question 4

What is the smallest part of a wheat plant?

A) Leaf B) Seed

C) Cell D) Root

Question 5

Who grows the biggest yields of wheat in the world?

A) New Zealand B) Germany

C) Russia D) USA

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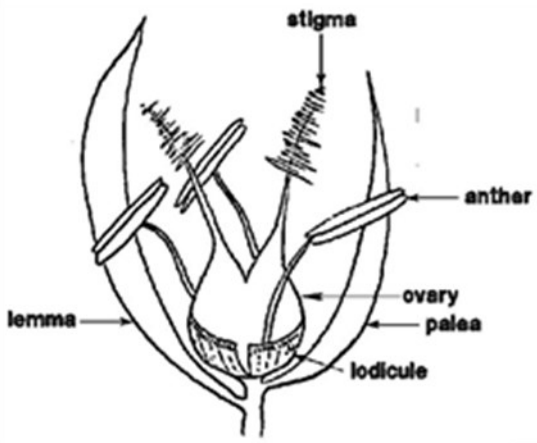
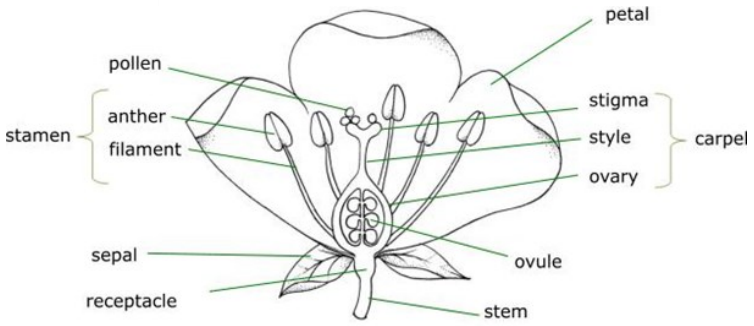
Wheat Quiz – Activity answers

Activity

Correct answers: 1 – D, 2 – C, 3 – B, 4 – C, 5 – A

The almost hidden flowers (florets) of wheat and grass plants may look completely different to the colourful flowering plants in our gardens but they share a common structure. The female reproductive part (stigma or carpel) in the centre of the flower receives pollen from the male reproductive part (anther or stamen) arranged around the centre. Instead of having colourful petals, the reproductive parts in wheat are surrounded by green sheets (palea and lemma). They serve as a protective barrier for the florets and the seeds later on.





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LEAF Education (formerly Farming and Countryside Education) works with school communities to help children and young adults understand the connection between farming and their daily lives.

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