

Grinding grain



Location

Ground floor, Food exhibition

In a nutshell

Make your own flour to take home with you using our Grinding Grain exhibit.

What to do

Place a pot on the grill then turn the handle to grind some grain, use the scales to check your progress. Finish with a sticker
Take the flour home and try a recipe from exploremore.wethecurious.org/grinding_grain.

Time Required

KS3 & KS4 2 minutes per student.

What's happening?

Wheat grains are seeds. To make the flour those seeds must be broken up into many parts; Bran - the hard outer shell, Wheat germ - the plant embryo, this part would produce the new plant and Endosperm - the energy store of the grain, meant for the new plant. Traditional mills used stone wheels to grind the seed, but modern mills use large stainless rollers to cut the grain and separate it into the separate parts using sieves. White flour is made only from the finely ground endosperm. Brown flour will have some of the germ and bran added back into the white endosperm. Wholemeal flour will have all of it added back in.

Calcium, iron and the B vitamins must be added by law to white and brown flour. They are already in wholemeal flour.

Two million hectares of wheat are harvested every year in the UK – an area the size of Wales!

The World Bank estimates that global wheat production will have to increase by 60 percent between 2000 and 2050 to meet rising demand. The UK produces over 13 million tonnes of wheat a year.

Curriculum links

Curriculum links	
KS3	<p>Science - Nutrition and digestion</p> <ul style="list-style-type: none"> - content of a healthy human diet: carbohydrates, lipids (fats and oils), proteins, vitamins, minerals, dietary fibre and water, and why each is needed - the consequences of imbalances in the diet, including obesity, starvation and deficiency diseases <p>Science - Energy changes and transfers</p> <ul style="list-style-type: none"> - other processes that involve energy transfer: changing motion, dropping an object, completing an electrical circuit, stretching a spring, metabolism of food, burning fuels <p>Science - Forces</p> <ul style="list-style-type: none"> - forces as pushes or pulls, arising from the interaction between two objects - moment as the turning effect of a force <p>Mathematics - Number</p> <ul style="list-style-type: none"> - use standard units of mass, length, time, money and other measures, including with decimal quantities <p>Cooking and nutrition</p> <ul style="list-style-type: none"> - understand and apply the principles of nutrition and health
KS4	<p>Science - Forces and their interactions</p> <ul style="list-style-type: none"> - recall examples of ways in which objects interact: by gravity, electrostatics, magnetism and by contact (including normal contact force and friction), and describe how such examples involve interactions between pairs of objects which produce a force on each object; represent such forces as vectors - explain, with examples, that stretch, bend or compress an object, more than one force has to be applied <p>Mathematics - Measures and accuracy</p> <ul style="list-style-type: none"> - use standard units of mass, length, time, money and other measures (including standard compound measures) using decimal quantities where appropriate <p>Food preparation and nutrition</p> <ul style="list-style-type: none"> - understand and explore a range of ingredients and processes from different culinary traditions (traditional British and international), to inspire new ideas or modify existing recipes - where and how foods are grown, reared, or caught and the primary and secondary stages of processing and production

Relates to:

Workshops & Theme Days	Shows	Trails	Other exhibits
<ul style="list-style-type: none"> • Choose Health (KS3 lower) 	<ul style="list-style-type: none"> • How my body works (KS3) 		<ul style="list-style-type: none"> • World of Food • Fuel your body • Milk Machine • Honey Factory

