WOODBRIDGE TIDE MILL MUSEUM®

# From Soil to Sandwich (3) ‘Flour and Bread’

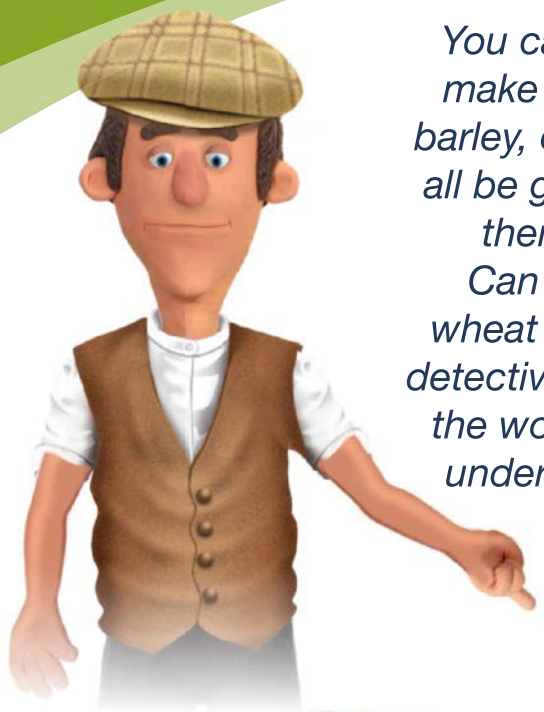
Recommended for KS2/KS3
Curriculum links:
Design Technology, Science, English and Maths


If you’ve watched Eva’s video ‘From Soil to Sandwich’ you’ll now know a thing or two about how the grains are turned into flour. If you haven’t seen it you can find it here…https://woodbridgetidemill.org.uk/learning- resources/ Now once we have flour we can do all sorts of wonderful things with it from cake making to bread baking and lots in between. To make bread we need something called yeast. Yeast is a small single celled organism that feeds off sugar and emits the gas carbon dioxide. The carbon dioxide expands as the bread warms and bakes and helps to give it that lovely rise that all bakers hope for… delicious!

*‘Hello, I’m Sid,*
*I was one of the last millers at the Tide Mill before the old waterwheel broke in 1957. I don’t mill flour anymore but I do love to bake and I’ll be your guide whilst you learn more about the biology and chemistry of making bread!*

*Over the next few pages are some activities that will help you discover more about grains, yeast, flour and how bread is actually made.*

## Activities



*You can grind different types of grain to make flour. We use wheat flour, but rye, barley, oats, corn and rapeseed (colza) can all be ground to make flour. Each one can then be baked to make a tasty loaf.*
*Can you work out your rye from your wheat grains? Have a go at being a grain detective. Look at the grains below and use the wordbank to write the correct names underneath. (pssst…answers are at the back!)*


**Word Bank**

**Wheat, Rye, Barley, Oats, Corn, Colza**

*Did you know that breadmaking is an irreversible change? This is because of the yeast! Once mixed together and heated the microorganism yeast consumes the sugar and gives off carbon dioxide. This gas gets trapped in the dough and causes it to rise and to create the bread we know and love. It is an irreversible chemical reaction! Now let's investigate and see this change in action…*


You will need:

- A packet of yeast (around 7g)
- A small plastic bottle (500ml)
- 1 teaspoon of sugar
- Warm water
- Balloon (we used water balloons but any will work!)

**Prediction…**

What do you think will happen to the balloon and why? _____

_____

_____

1. Pour about an inch of warm water into your empty bottle

2. Add your packet of yeast and swirl it around.

3. Now add your teaspoon of sugar and swirl it around again so that the yeast and sugar mix to form a solution

4. Place the balloon over the neck of the bottle so its sealed. Place your bottle somewhere warm (like a radiator) for about 20 minutes and see what happens!

**Conclusion…**

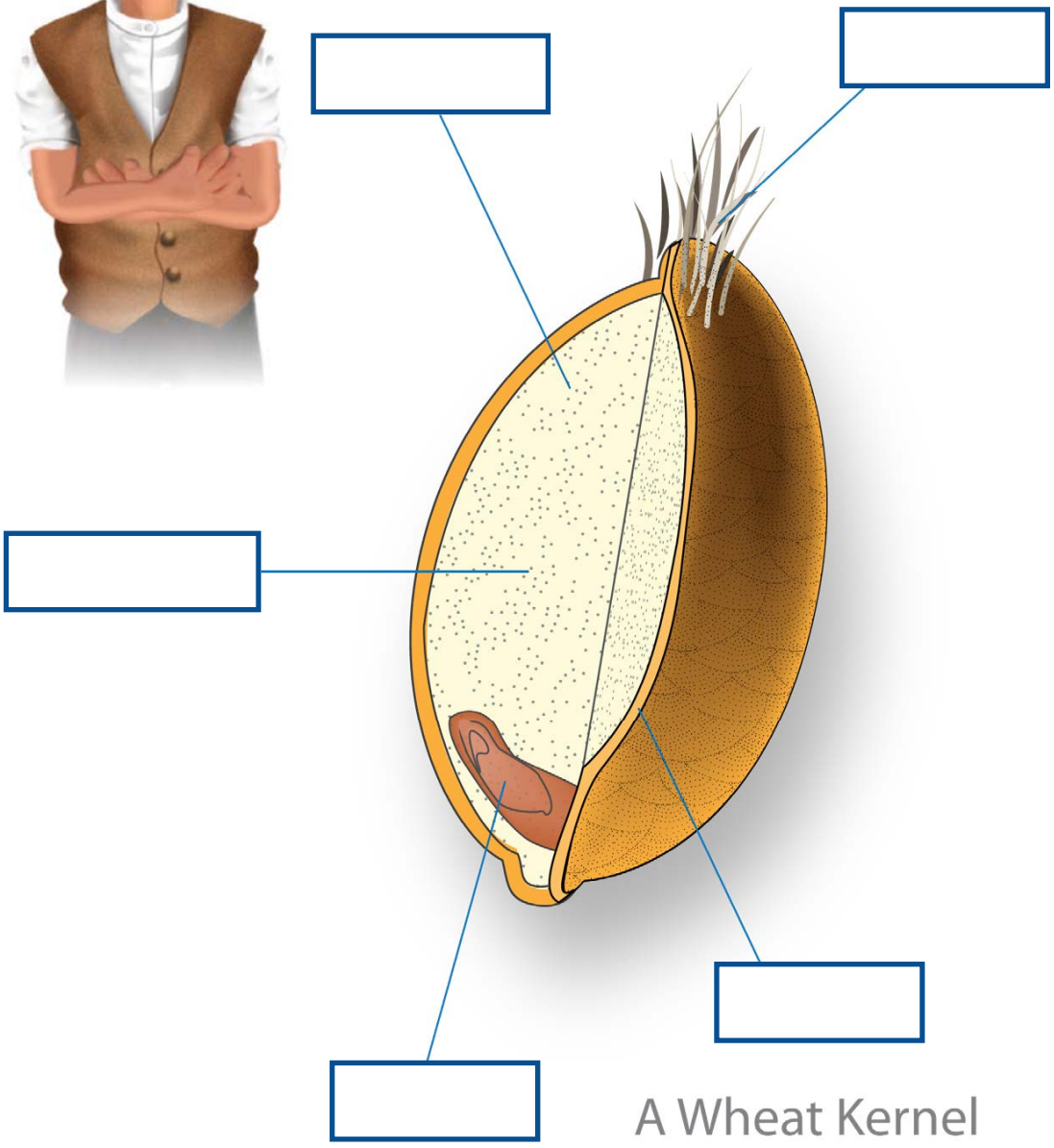
What happened and why?

Now how about some alternative experiments…

-Change the shape and size of the bottle – does this have an impact?

-Change the liquid you use. How about milk/honey? Does this have an impact?

Did you know that gluten is a protein found in flour? It acts as a glue to hold the bread together and gives the dough its elasticity. Do you know where the gluten is found in the wheat germ? Have a go at labelling this diagram…

A Wheat Kernel

**Word Bank**

**Germ, Endosperm, Bran, Brush, Gluten**

## Answers

Barley

Oats

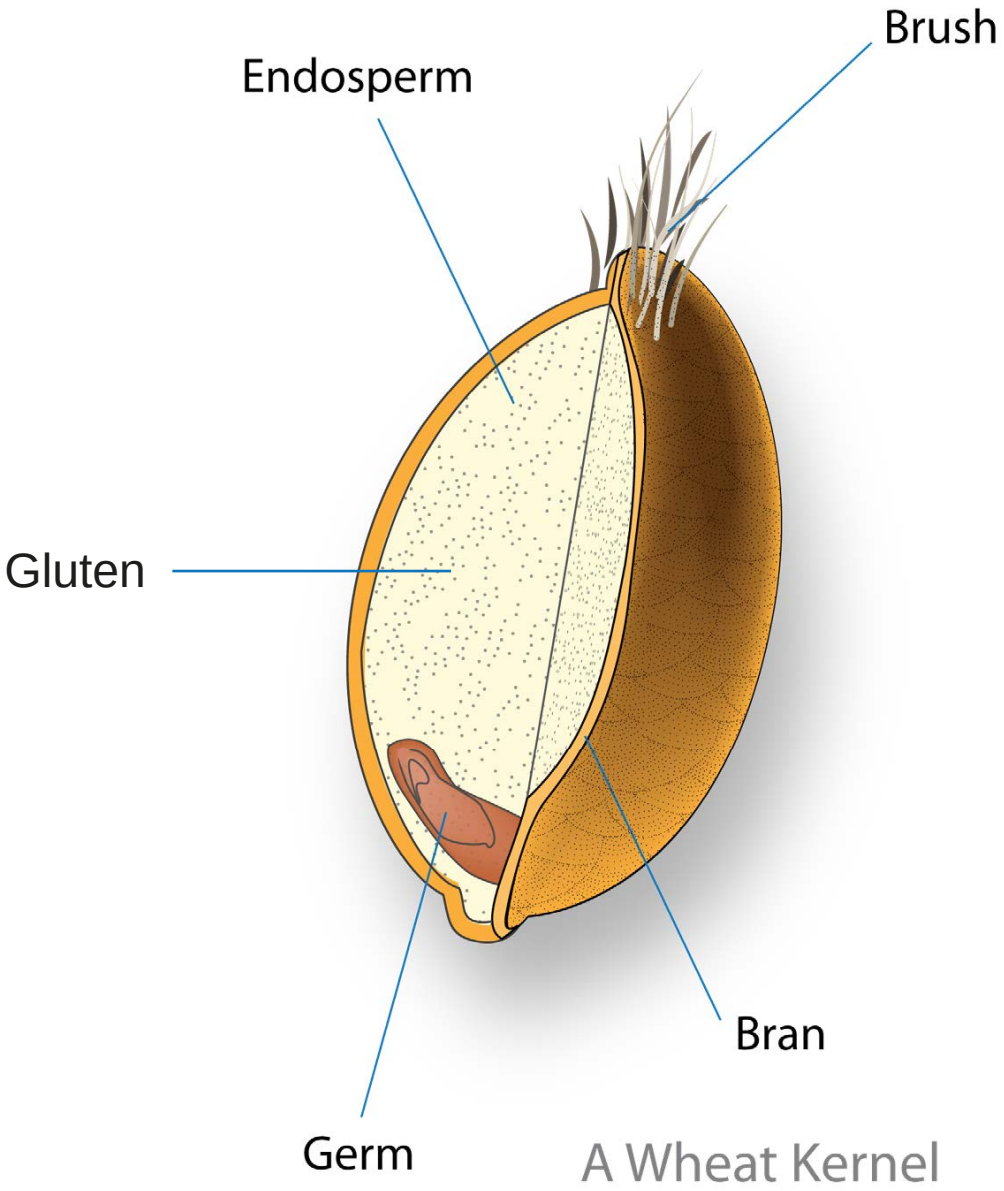
Wheat

Corn

Rye

Colza

## Answers




A Wheat Kernel