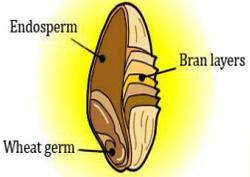
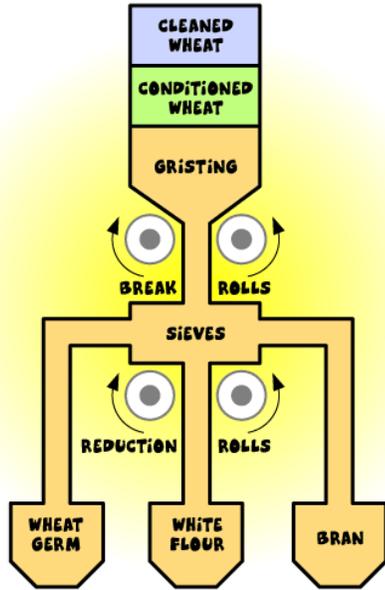


# Year 8 Cooking and Nutrition – Food science

## Wheat to flour



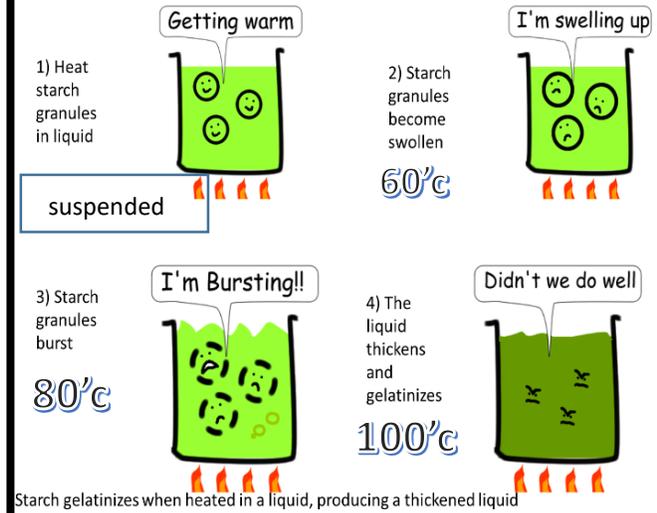
The grains are then sieved and ground to separate the **endosperm** (the white flour) from the **bran** layers (outside case of the grain) and the **wheat germ** (part that grows a new plant).



## Sauce making

Sauces are added to food for flavour and to provide moisture. Sauces can be made in different ways which include a reduced sauce (made thicker by evaporating the liquid off) or starch sauces which thicken with the use of flour. The flours that can be used include arrowroot (good for fruit flan because on thickening it goes to a clear gel), corn flour and flour which make a cloudy sauce which are then flavoured with cheese or parsley. Sauces are made by a process called **GELATINISATION**. To avoid a lumpy sauce it must be stirred at all times during the making process. If its too thick add more liquid and too watery more flour.

## Gelatinisation



## Fish



**Oily**—sardines, tuna, mackerel, sardines and trout  
**White**—cod, haddock, coley, whiting (can be flat or round)  
**Shell**—can be crustaceans like crab and lobster or molluscs like scallops, cockles and muscles.

Fish is made up of fibres and connective tissues. The fibres are short and connective tissue finer making the flesh delicate and tender so short cooking time

Fresh fish should have bright eyes, mild scent and firm flesh. It should also be moist.

## KEY WORDS

## DEFINITION

Risk assessment	This is a process where hazards in food preparation are identified before cooking then controls are put in place to reduce or prevent the hazard.
Hazard	This is anything in food preparation that could cause harm. This harm could be giving someone food poisoning or someone getting hurt during food preparation.
High risk food	A high risk food is one which has the best conditions for the growth of pathogenic bacteria so is usually high in moisture and protein, for example, chicken or prawns.
Gelatinisation	This is the process of using starch to thicken a liquid like milk or gravy. The starch grains burst open at 80°C and absorb the liquid making the sauce thicken. The thickness of the sauce depends on the amount of flour to liquid.
Yeast Production	Yeast is a micro-organism which is used in bread making to cause it to rise. It uses moisture, food and warmth to cause the yeast to multiply and produce carbon dioxide.
Time plan	This is a detailed plan of how to make a dish in a given amount of time. It includes the stages of making and also the hygiene and safety points needed.
Gluten formation	Strong plain flour used for bread making contains two proteins gliadin and glutenin which when water is added to the flour makes gluten. Gluten forms an elastic dough which stretches during cooking.
Primary processing	Foods are processed straight from harvest or slaughter to make them edible or ready to use in other products, Eg. Wheat grain into flour.
Secondary processing	When primary processed foods are used on their own or mixed with other foods, e.g. flour turned into bread or pasta

# Year 8 Cooking and Nutrition – Food Safety

## Food Packaging Date Marks

Date Mark	Description	Food Examples
<p><b>Use By</b></p> 	A safety date. Used on high risk foods that usually need to be stored in the fridge. If you eat the food after this date you risk food poisoning.	Meat Fish Seafood Cheese Milk Cream 
<p><b>Best Before</b></p> 	A quality date. Food can still be eaten after but the quality will be reduced. E.g. cereals or biscuits will not be as crunchy.	Bread Cereals Sugar Flour Pasta 

## Bacteria

Bacteria are micro-organisms which only visible under a microscope so we can't see them in our food. Good bacteria are use to make yogurt, however, bad bacteria can cause food poisoning and are called **PATHOGENIC** bacteria. To cause food poisoning they must be in large enough amounts in our food and in order to multiply they need the following conditions:

- Food
- warmth (ideal is between 5 to 63°C)
- Moisture
- Time (multiply every 10 to 20 minutes)

## Temperature Probe



Cooked food needs to reach **75°C**.

They are high in protein and moisture

**HIGH RISK FOOD CAUSES most food poisoning cases**

## High Risk Foods

**High Risk Foods** have a short shelf life. You can't keep them for long, or the **bacteria** might multiply to dangerous levels and cause **food poisoning**.



## High Risk Foods

Meat  
Poultry  
Fish  
Seafood  
Shellfish

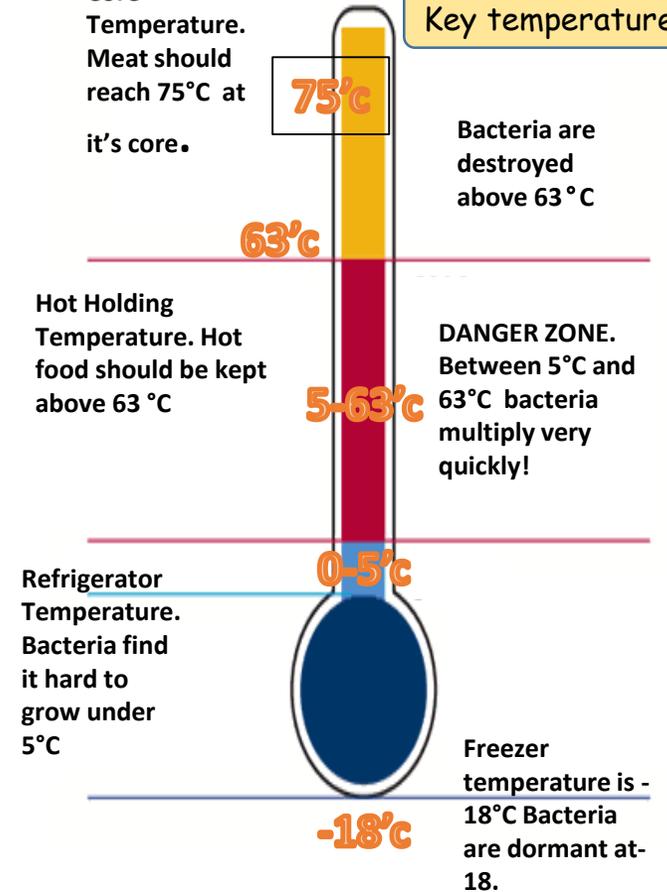


Cooked Rice

Eggs  
Dairy Foods  
Gravies  
Sauces  
Stocks

Core Temperature. Meat should reach 75°C at it's core.

## Key temperatures



Use the correct coloured chopping board to reduce the risk of cross contamination.

**Red** – raw meat

**Blue** – fish

**Brown** – vegetables

**Green** – fruit and salad

**White** – dairy and bread

**Yellow** – cooked meats

## Year 8 Cooking and Nutrition – Food Choice

The government recommends **8 top tips for healthy eating**. Following these guidelines you will give you a **balanced diet**, which leads to **good health**.

### Dietary needs

**Teenagers are growing from children to adults and therefore there need for protein increases. They also require more calcium and vitamin D for growing bones and iron (especially girls) for greater blood production. They should avoid too much fat and sugar basing their meals on the eat well guide to maintain a healthy weight. They often lack energy so should have a good supply of vitamin C and the B group vitamins. They should try to have regular meals and avoid skipping breakfast as this helps with concentration. It is also important to drink lots of water. They should try and get some exercise to maintain a normal weight.**



### Fibre

Dietary fibre is a type of carbohydrate found exclusively in plants. Unlike other types of carbohydrate, it is not absorbed in the small intestine to provide energy

**Dietary fibre helps to:**  
**reduce your risk of heart disease, diabetes and some cancers;**  
**help weight control;**  
**bulk up stools and make waste move through the digestive tract more quickly;**  
**prevent constipation;**  
**improve gut health.**

Dietary fibre is found in plant foods, such as: wholegrain cereals and cereal products; oats; beans; lentils; fruit and vegetables; nuts and seeds

### Food choice

**Food choices:** a variety of factors influence what we choose to eat.



<https://www.youtube.com/watch?v=D6eor1wkNFY>

<https://www.youtube.com/watch?v=bowUbkANVYY>

## 8 Guidelines for a Health Diet

<b>Base your meals on starchy foods</b>	<b>Provide slow release of energy</b>
Eat lots of fruit and vegetables	Provide fibre, vitamins and minerals
Eat more fish including 1 portion of oily	Contain the essential fatty acids to keep the heart healthy
Cut down on saturated fat and sugar	Reduce the chances of obesity, heart disease and strokes
Eat less salt	Reduce the risk of hypertension and high blood pressure
Get active and try to be a healthy weight	Maintain a healthy weight better for joints
Drink plenty of water	Stay hydrated to improve concentration
Don't skip breakfast	Provide an energy boost

**Nutritional needs and health:** some people have special dietary needs based on their age, lifestyle or allergies.



<https://www.youtube.com/watch?v=k5YSJq4iQtI>