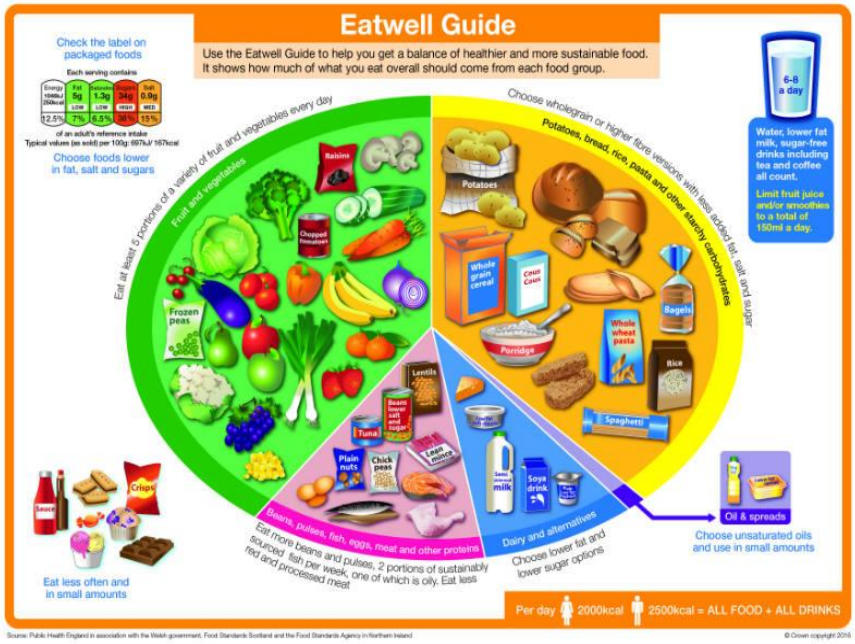
Year 8 Food Knowledge Organiser: Principals of Nutrition

Watch the video to learn more
https://www.bbc.com/bitesize/clips/zxqjg82



Fat

Function:
Energy
Warmth
Protection of organs

Sources

Saturated Fat	Unsaturated Fat
(Bad Fats)	*(Good Fats)*
Meat	Avocado
Processed Foods	Nuts
Lard	Olive oil

Saturated Fats - solid at room temperature and are from animal sources. Unsaturated fats are liquid at room temperature and are vegetable sources..

Too much	Too little
• Obesity • Type 2 diabetes • Heart Disease	• Fat soluble vitamin deficiencies

Macronutrients

Needed in **large amounts** to help the body to function properly

Protein

Function:
owth and Rep
Energy

Sources:

Plant	Animal
Nuts	Eggs
Quorn	Fish
Beans	Meat
Lentils	

Too much	Too little
• Turns to fat if not turned into energy	• Anaemia • Slow growth in children

Carbohydrates

Function:
Energy

Starches:
Bread
Pasta
Rice
drinks
Wheat
Potatoes
Cereals

Sugars:
Cakes
Sweets
Fizzy

We should consume no more than 30g of sugar per day

Too much	Too Much
• Obesity • Type 2 diabetes • Heart Disease	• Tooth decay • Type two diabetes • Obesity

The 5 main groups
The Eatwell Guide divides the foods and drinks we consume into 5 main groups:

1. **fruit and vegetables**
2. **potatoes, bread, rice, pasta and other starchy carbohydrates**
3. **beans, pulses, fish, eggs, meat and other proteins**
4. **dairy and alternatives**
5. **oils and spreads**

You should try to choose a variety of foods from each group to help you get the nutrients you need to stay healthy.

Using the Eatwell Guide
You can use this guide to help you make healthier choices when:

- planning what to eat
- cooking or preparing a meal at home
- food shopping
- eating out or on the go

Most of the meals we eat are a combination of food groups. When planning meals, work out the main ingredients and think about how these fit within the 5 main food groups.

Micronutrients

Needed in **small amounts** to help the body to function properly

Watch the video to learn more
https://www.youtube.com/watch?v=ISZLTJH5lYg

Vitamin	Sources	Functions	Deficiency diseases
Vitamin A (fat soluble)	Fish, eggs, oranges	Helps with Eye sight and skin. It is also an antioxidant which protect the cells from harmful substance.	**Night Blindness**
Vitamin D (fat soluble)	Eggs, the sun	Helps our bones to grow. Aids the absorption of Calcium and prevents **RICKETS**	**Rickets in children** **Osteoporosis in women**
Vitamin C (Water soluble)	Oranges, tomatoes, vegetables	Helps to heal cuts, helps the immune system which prevents **scurvy**. Aids the absorption of Iron and prevents ANAEMIA	**Scurvy and Anaemia**
B Vitamins (Water soluble)	Cereals, meat, fish	Creates enzymes that break down food allowing absorption of Carbohydrate, Fats and Protein into our blood.	**Beri Beri – lack of B1 - Thiamin** **Pellagra - lack of B3 - Niacin**

Year 8 Food Knowledge Organiser: Function of ingredients

Gelatinisation

Definition
A sauce is a thickened, flavoured liquid which can be added to a range of savoury and sweet dishes.
There are several types of sauces based on different ways of thickening mixtures.

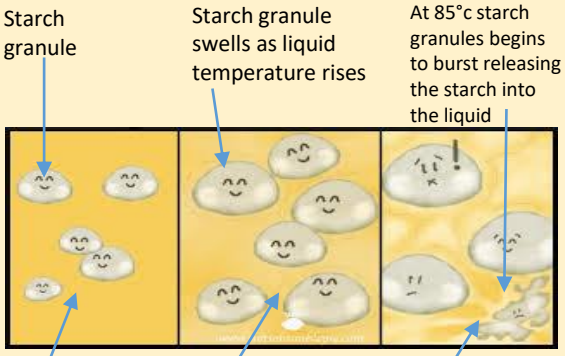
The main functions of sauces are:
- To add liquid to moisten a food or dish.
- To add flavour.
- **To add colour.**
- **To bind ingredients together.**
- To add nutrients.

To make dishes more interesting and appealing.
A wide variety of different sauces can be used to produce dishes using a vast range of skills, to develop differing flavours and textures. These can include a **coating**, **accompaniment** or **part of a meal**.

Starch grains are mixed into a liquid. The starch grains do not dissolve they are suspended in the liquid. This is called a **suspension.** When the starch grains are put in a liquid and then heated, the starch grains will start to absorb the liquid. They will swell and get bigger this will start at **60C**. This makes the sauce start to thicken, because there is less room for the swollen grains to move around. Stirring helps to keep the starch grains suspended

Watch Video on Gelatinisation :
https://www.youtube.com/watch?v=zjyhMzjDaVI

If the liquid is not stirred, the starch grains will join together and form lumps.
At 85**C** the starch grains are so swollen that they start to burst and release starch molecules into the surrounding liquid. At boiling point **100C** the sauce completely thickens.
The whole process is known as **gelatinisation.**



Factors that affect gelatinisation
1. Type of Starch (Wheat Flour/Cornflour)
2. Quantity of starch
3. Amount of liquid
4. Temperature
5. Stirring

Bread

Ingredient	Role
Strong Flour	Strong flour is high in GLUTEN (protein) that makes the dough stretchy and elastic.
Liquid	Hydrates the Yeast allowing the it to produce Carbon Dioxide (CO_2). Bind dry ingredients.
Yeast	Biological raising agent produces Carbon Dioxide. Yeast requires 4 Factors for Growth; Food, Time, Temperature, Moisture.
Salt	Adds Flavour.

Cakes

Cake making methods
- **Rubbing in – Scones**
- **Creaming – Traditional and all in one – Muffins**
- **Melting – Ginger Bread**
- **Whisking – Swiss roll.**

The main ingredients in cake making are fat, sugar, flour and eggs. All methods use a raising agent and often a liquid such as milk.

Function of ingredients:

Ingredient	Function
Flour	1. Forms structure of the cake. 2. As the cake is heated, protein (gluten) in the flour sets the framework and shape. 3. **DEXTRINSATION** occurs, starch converts into sugar when exposed to dry heat. This sugar then **CARAMELISES** on the surface.
Sugar	1. Sweetens and adds flavour. 2. When creamed with fat, helps to hold air in the mixture. 3. **CARAMELISATION** gives colour.
Fat	1. Adds colour and flavour 2. Holds air bubbles (foam) which creates texture and volume. 3. Produces a short crumb or rich even texture dependent on the ratio of fat and method used. 4. Increases shelf life.
Eggs	1. Traps air when whisked into a foam. 2. **Coagulates** (set) on heating. 3. **Emulsify** – holds the fat in emulsion and keeps it stable 4. Add colour, flavour and nutritional value.
Raising agents	1. Aerates the mixture increasing volume and resulting in a light texture.