

# Food Preparation and Nutrition



## REVISION BOOKLET 1 FOOD COMMODITIES

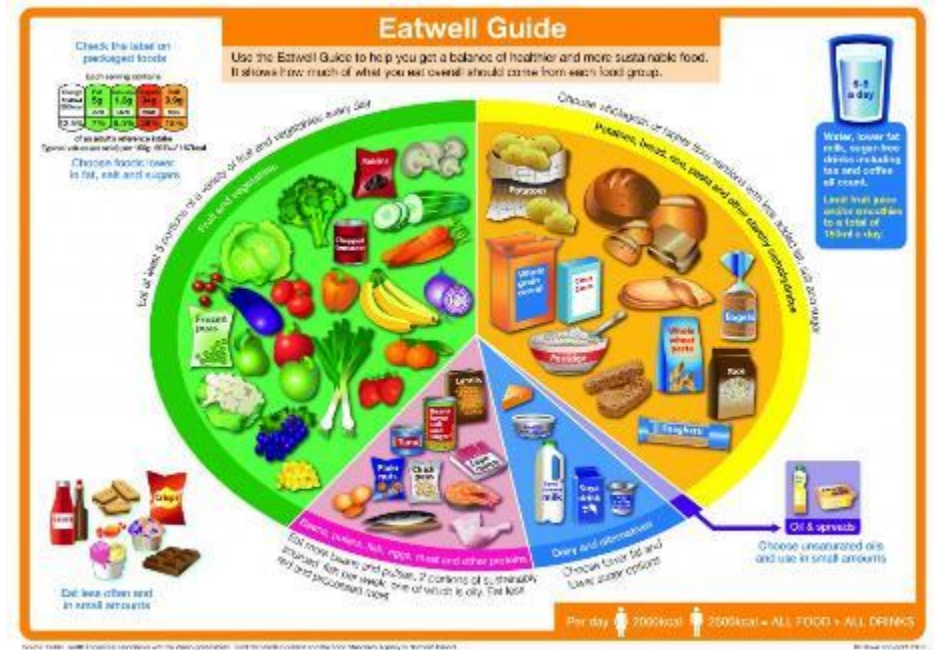
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Tutor Group:

## Eatwell Plate V Eatwell Guide

In 2015 the Government replaced their nutritional guide. The Eatwell Plate became the Eatwell Guide.

Study the two images. What differences can you see? Are there any similarities between the two?

Why do you think the Government has made these changes?



## Fats and Oils

Fat is a good source of energy and a source of the essential fatty acids that the body can't make itself, and fat helps the body absorb some vitamins. All fat is high in calories, so if you are watching your weight, you should limit your fat intake. The total amount of fat you eat should make up no more than 30% of your calories from food.

### Functions of Fat in the Body

Choose the correct words from the options given to describe the four functions of fat in the body.

**warm      provide      soluble      protect**

- a) To \_\_\_\_\_ energy
- b) To \_\_\_\_\_ the internal organs
- c) To keep us \_\_\_\_\_
- d) To provide fat \_\_\_\_\_ vitamins A and D

What is the difference between saturated and unsaturated fat?

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Why should you eat a low amount of saturated fat?

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Which of the following contain saturated fat? Select the correct options from the ones given.

Sausages	Cream	Coconut and Palm Oil	Avocado
Oily Fish	Sunflower Oil	Walnut Oil	Hard Cheese e.g. Cheddar

### Sources of Fats and Oils

Choose the correct words from the options given to complete the following sentences.

**fridge      obese      room      liquid      solidify**  
**needed      solid**

- a) Fat is \_\_\_\_\_ at room temperature
- b) Oil is \_\_\_\_\_ at room temperature
- c) Fat should be stored in the \_\_\_\_\_ to prevent it melting
- d) Oil should be stored at \_\_\_\_\_ temperature
- e) Oils \_\_\_\_\_ in cold temperatures
- f) Some fat is \_\_\_\_\_ by the body
- g) Too much fat can cause you to become overweight or \_\_\_\_\_

Which of the following are liquid at room temperature? Select the correct options from the ones given.

Butter	Cream	Rapeseed Oil	Suet
Olive Oil	Sunflower Oil	Dripping	Lard

Why is there a demand for low or reduced fat foods?

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When choosing food, how can packaging help people make a healthy choice?

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## Types of Fat and Oils

There are many types of fat and oil.

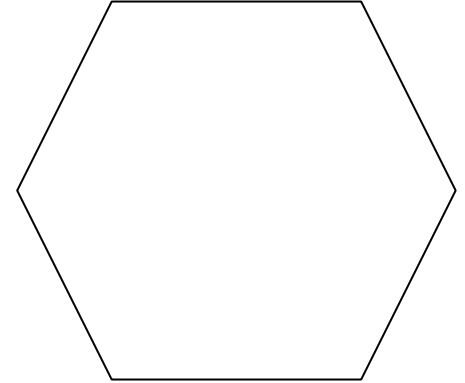
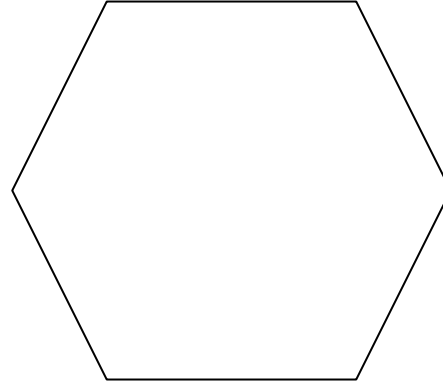
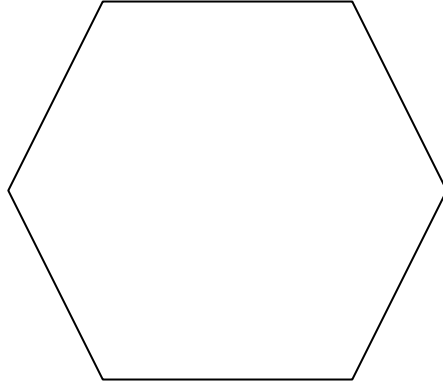
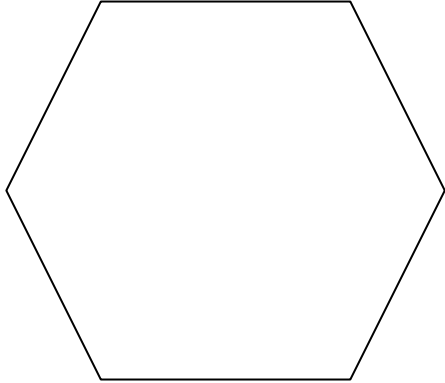
A general rule is that fats are solid or semi-solid at room temperature (18°C). Oils are liquid at room temperature. A small number of fats from plant sources are naturally solid or semi-solid at room temperature.

Type	Uses	Composition / Made From
Olive Oil		
Sunflower Oil		
Vegetable Oil		
Spread		
Margarine		
Butter and Ghee		
Lard		
Suet		

## Method for Butter Churning

### Primary and Secondary Processing

Butter is made from churning cream and is high in **saturated** fat.  
Complete the storyboard below, detailing the steps of butter churning.



### Activity

Consumer needs are influenced by factors such as diet or cost. Conduct a supermarket survey of vegetable fats, margarines, butters and spreads available for people on special diets and record the price of each below.

## Fruit and Vegetables

A diet rich in a variety of fruits and vegetables can make us healthier. The aim is to eat at least five portions of fruit and vegetables each day.

Vegetables provide us with a range of nutrients. Root vegetables are a good source of carbohydrate; peas, beans and lentils provide protein, and all vegetables contain dietary fibre, which is essential for a healthy digestive system. Red, orange and yellow vegetables are a good source of vitamin A, and vitamin C is found in leafy vegetables such as salad greens.

In your own words, explain why fruits and vegetables are a healthy food.

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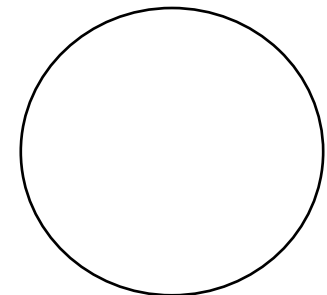
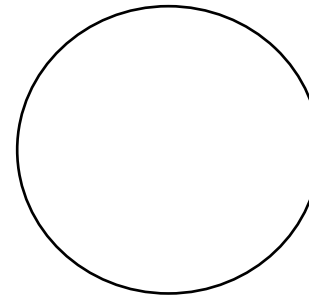
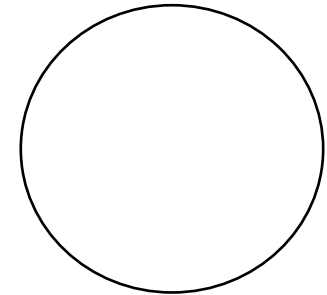
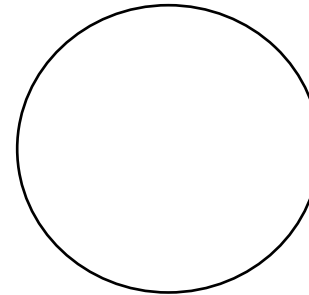
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Complete the table below listing different fruits and vegetables you can buy fresh, frozen, dried and canned.

	Fruit	Vegetables
Fresh		
Frozen		
Dried		
Canned		

## Menu Planning

Plan 4 main meals with 2 portions of vegetables for each meal. Use fresh vegetables for two of the meals, and frozen., canned or dried vegetables for the other two. Give reasons for your choice.



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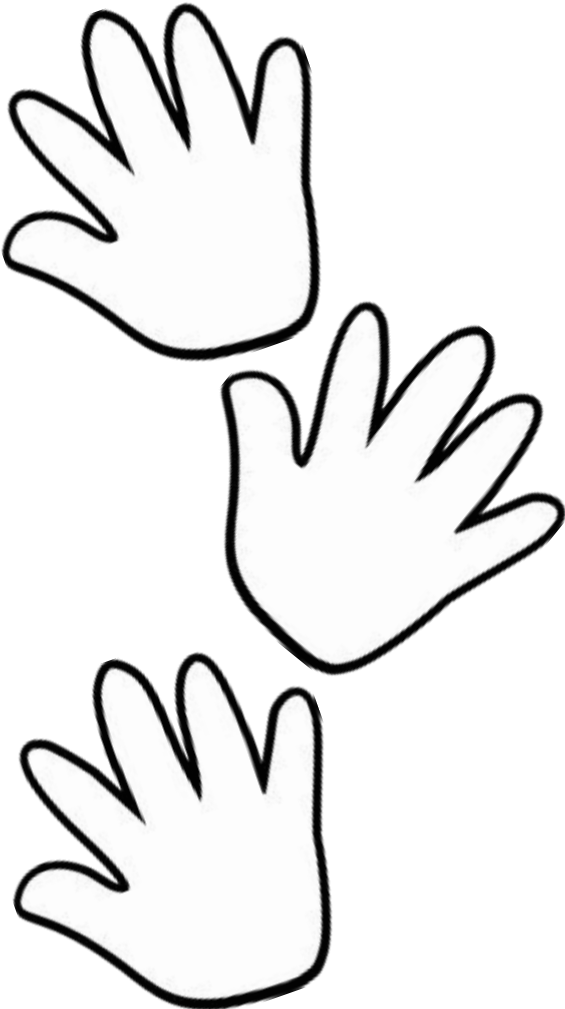
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Importance of Fruits and Vegetables in the Diet

Fruit and vegetables contain a range of nutrients and are therefore an important part of the diet. We are advised to eat at least five portions a day as they are known to be beneficial to our health. They also provide a variety of flavour, colour and texture to meals.

What counts as a portion?

Research a variety of fruit and vegetables and how much equals 1 portion of your 5-a-day.



Nutritional Value of Fruit and Vegetables

Complete the table to show which fruits and vegetables contain which nutrients. Explain why these nutrients are needed in the body.

Nutrient	Found in...	Needed for...
Carbohydrate		
Vitamin A		
Vitamin C		
B Group Vitamins		
Vitamins E and K		
Calcium and Iron		
Dietary Fibre		

## Harvesting Fruits and Vegetables

Complete the storyboard below, detailing the steps of how a variety of fruit or vegetable is harvested and processed.

A regular hexagon with a black outline, oriented with two horizontal sides (top and bottom) and four slanted sides. It is centered within the grid.A regular hexagon with all sides and angles equal.A regular hexagon, which is a six-sided polygon with all sides of equal length and all interior angles equal. It is oriented with two horizontal sides, one at the top and one at the bottom.A regular hexagon with all six sides of equal length and all six interior angles equal. It is oriented with two horizontal sides, one at the top and one at the bottom.

## Seasonal Produce

Explain the meaning of the term seasonal fruit and vegetables and describe the benefits of using them in the diet.

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Give an example of a fruit **and** a vegetable available seasonally in the UK.

[illegible]

## Choosing and Storing Fruit and Vegetables

When buying fruit and vegetables for menu planning, they should be chosen carefully.

## The colour of fruit and vegetables:

Research and explain why fruits and vegetables are different colours.

**Key words:** chlorophyll, carotenoids, anthocyanin.

Green

Yellow / Orange

Red / Blue

## Choosing fruit and vegetables:

Research rules for selecting quality fruits and vegetables. What should you look for? What should you avoid?

### Storing fruit and vegetables:

Research and explain how fruits and vegetables should be stored. Do all fruits and vegetables require the same conditions?

Explain how fruit ripens and becomes sweeter.

**Keywords:** starch, photosynthesis, sucrose, glucose, fructose.

Protein

Protein is a very important macronutrient in the diet. It is essential for the growth and repair of the body and for the maintenance of good health. It is also needed in the production of body chemicals such as enzymes and hormones.

Animal Sources (HBV)

Amino Acids

Proteins are made up of chains of smaller building blocks called amino acids.

Amino acids can be categorised as essential amino acids (indispensible)- these are amino acids that must be supplied to us through our diet, and non-essential amino acids (dispensable)- that can be made in the body.

Essential Amino Acids (Adults)

For adults, 8 amino acids have to be provided in the diet:

Isoleucine	Leucine	Lysine	Methionine
Phenylalanine	Threonine	Tryptophan	Valine

Vegetable Sources (LBV)

Essential Amino Acids (Children)

Children are unable to make enough of the amino acids to meet their needs. These amino acids are referred to as ‘conditionally’ essential.

Arginine	Cysteine	Glutamine	Glycine
Histidine	Proline	Tyrosine	

How Much Protein Do We Need?

Children		Adults	
1-3 years		19-50 years	
4-6 years		50+ years	
7-10 years		Why does the amount of protein needed vary with age?	
11-14 years			
15-18 years			

Complementary Protein

## Protein

**How many sources of protein can you name?**

Clue: what protein alternatives to meat can you name?

What is the function of protein in the body?

What are the symptoms of protein deficiency?

What are the main types of meat eaten in the UK?

Name 3 types of poultry:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

Why is fish an important food in the diet?

### Low Biological Value and High Biological Value Proteins

Which of the following have High Biological Value? Tick the correct options from the ones given.

Eggs	Shellfish	Quorn
Quinoa	Milk	Peas
Meat	Soya Beans	Pulses

Which of the following are plant-based proteins that have Low Biological Value? Tick the correct options.

Quorn	Soya Beans	Cereals	Beans
Quinoa	Pulses	Rice	

Why should you eat a variety of low biological protein foods together?

Explain why the following have a high requirement for protein:

- a) Children
- b) Pregnant women
- c) Adolescents

## **Pulses and Beans**

There are many different types of pulse, but the definition is the same:  
An edible seed that grows in a pod. Pulses include all beans, peas and lentils.

### **Common Pulses:**

List as many beans, peas and lentils as you can think of.

### **The Nutritional Value of Pulses**

Pulses are a cheap, low-fat source of protein, fibre, vitamins and minerals and they count towards the recommended daily five portions of fruit and vegetables.

Discuss the food value of pulses below. What nutritional contribution do pulses make to the diet? Explain the function of these nutrients:

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### **Pulses in the Diet:**

Pulses can be included in meals in a variety of ways. Suggest some below:

### **Preparation of Pulses**

How should pulses be prepared?

How must dried kidney beans be prepared before eating? Explain why.

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Nuts

The seed or fruit of a nut is contained within a hard shell that does not easily open to release it. This means nuts have a long shelf life and their outer shells prevent handling and contamination issues.

Nuts are a good source of protein, but because they lack the amino acid lysine they are classed as being low biological value.

Nuts provide a range of other nutrients that differ depending on the type of nut, complete the table below detailing these nutrients and why they are required by the body:

Nut	Nutrient	Required For
Almond	Calcium Vitamin E	
Brazil	Selenium	
Cashew	Iron Zinc Magnesium	
Pecan	Oleic Acid Vitamin B1 and B3	
Pistachio	Vitamin B6 Potassium Fibre	
Hazelnut	Folate Vitamin E	
Walnut	Omega-3 Vitamin E	
Macadamia	Fibre Magnesium Calcium Potassium	

Nuts in the Diet

Shelled nuts can be eaten raw or prepared in a number of ways for cooking.  
Detail their uses below:

Despite the nutritional value of nuts, why is it recommended not to eat too many?

## Seeds

Seeds are the part of the plant that contains the embryo from which future plants will grow.

There are many seeds which we can include in our diet to add variety and nutritional value.

### Common Seeds:

### The Nutritional Value of Seeds

Seeds are a good source of protein, B group vitamins, calcium, iron, zinc, magnesium and selenium.

Discuss the food value of pulses below. What nutritional contribution do seeds make to the diet? Explain the function of these nutrients:

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### Seeds in the Diet:

Seeds can be included in meals in a variety of ways. Suggest some below:

### Chia Seeds V Eggs

Research the ways in which chia seeds can be used as a replacement to eggs when cooking.

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**Alternative Protein Foods**

A term that describes foods used as a replacement for meat in the diet. They can be used when someone is vegetarian or vegan or just wanting to include more variety in their diet.

Complete the table below with key facts about alternative protein foods:

Protein	Nutritional Value Inc. Protein content per 100g	How is it Produced?	Products made from the Protein / Uses
Soya			
Textured Vegetable Protein (TVP)			
Tofu			
Quorn (Mycoprotein)			

## Food Preparation: Meat and Poultry

Meat is long thin muscle fibres and the more the muscles are used the tougher they are, such as legs, shin and neck. These need longer, slower cooking.  
Unused meat fibres, such as steak and chicken breast, are tender and cook quickly.

Raw meat can contain bacteria and all raw meat should be stored away from cooked food.

Lamb and duck can be cooked pink.  
Beef can be cooked rare (bloody)  
All other meats must be cooked thoroughly.

List the main types of each meat:

<b>Pigs</b>	<b>Sheep</b> (lambs are under 6 months old)
<b>Cows</b>	<b>Poultry</b>

## Types of Meat Available

Complete the table below describing the types of meat available to the consumer in the UK.

Research recipes that could be made using each type of meat and things to look for when purchasing fresh meat.

Animal	Meat	What to look for when buying	Positives of choosing this meat	Recipe suggestion
Cow				
Calf				
Sheep				
Lamb				
Pig				
Horse				
Goat				
Rabbit				
Deer				

Offal

Offal literally means ‘off fall’, or the pieces which fall from a carcass when an animal is butchered.

Many people unwittingly tuck into offal every time they eat a sausage (the skins are usually made from sheep, pig or ox intestines), or spread chicken liver pate on toast, yet shudder at the thought of eating heart or brain. In fact, the less popular cuts can be delicious, as well as nutritious.

Offal	Facts	Cooking Tips	Recipe Suggestion
Liver			
Heart			
Kidney			
Tail			
Tongue			
Tripe			
Sweetbread			

Explain. Why is offal considered to be such a nutritious food? Give examples to support your answer.

## Eggs

Most of the eggs we eat come from hens but eggs from other birds such as geese and ducks are also widely available.

Egg consumption in the UK is estimated at 170 eggs per year per person.

Complete the table showing example dishes for how eggs can be used:

Use	Definition	Examples
Binding		
Aerating		
Enriching		
Emulsifying		
Colouring		
Garnish		
Glazing		
Thickening		

### Storage of Eggs

List important factors to consider when storing eggs:

### Egg Freshness

There are two ways to test the freshness of an egg. Illustrate them below.

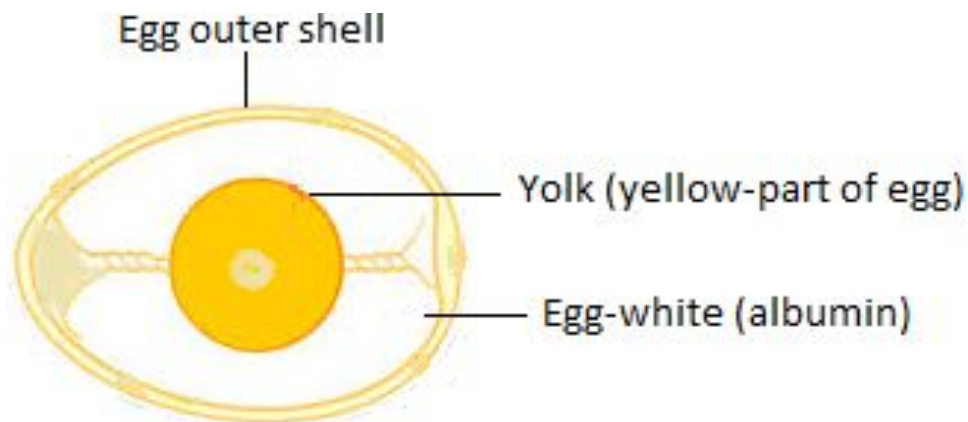
1. Place the egg into a glass bowl full of cold water. Freshly laid eggs will sink to the bottom. Eggs which are approximately a week old will float slightly but still be useable. Eggs which are more than two weeks old may float. If so they should not be used.
2. Break the egg onto a plate. In a fresh egg, the yolk sits up high and the white is thick and closely surrounding the yolk. An older egg has a flat yolk that breaks easily, and a thin, watery white.

## Eggs

Eggs contain most of the nutrients needed by the body. They are an excellent source of protein.

### Egg Structure

An egg is made up of three main parts: shell, white and yolk. Complete the image below labelling all the key parts, with a definition. CHALAZE, VITELLINE MEMBRANE, EGG CELL (GERMINAL DISC), SHELL MEMBRANES, SHELL, AIR CELL



### Egg Farming

Complete the table with a brief description about the different types of egg readily available to purchase in the UK.

Barn	Battery (Laying Cage)
Free Range	Organic

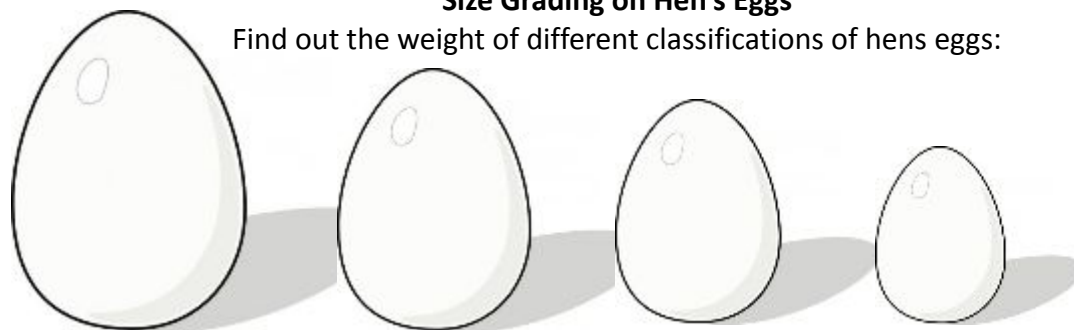
### Cooking Methods

Eggs can be used of their own and cooked by the following methods:

Method	Definition	Examples
Baking		
Frying		
Boiling		
Poaching		
Scrambling		

### Size Grading on Hen's Eggs

Find out the weight of different classifications of hens eggs:



## Carbohydrates

Carbohydrates are a source of energy. Foods rich in carbohydrates include bread, pasta, rice and breakfast cereals, as well as sugar. Simple carbohydrates are known as *sugars* and this energy is released quickly. Complex carbohydrates are starchy foods such as bananas, chickpeas, nuts, potatoes and wholegrain cereals. These foods release energy slowly as they are digested, which makes your energy levels more stable. For a healthy diet, eat more of the complex carbohydrate foods.

### List the main sources of carbohydrate in your diet:

Think about what you ate yesterday.

### A Spoonful of Sugar...

Mindmap below some of the problems people might face if they have too much sugar in their diets:

Why does the body require carbohydrate?

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Why are wholemeal cereals nutritionally preferable to refined (white) ones?

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What happens if too much carbohydrate is eaten?

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Why do athletes eat starchy foods such as pasta before an event?

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As a society, do you think people eat too much sugar?

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Why is sugar added to so many foods?

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By looking at foods which contain sugar, can you explain why we, as a nation, are becoming obese?

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## Cereals

The word **cereal** is used to describe many different edible grasses; grown and harvested for their grain.

### Popular Cereals in the UK

Tip: Think about what makes Cheerios

### The 3 Main Parts of a Cereal Grain

**Endosperm**

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**Germ**

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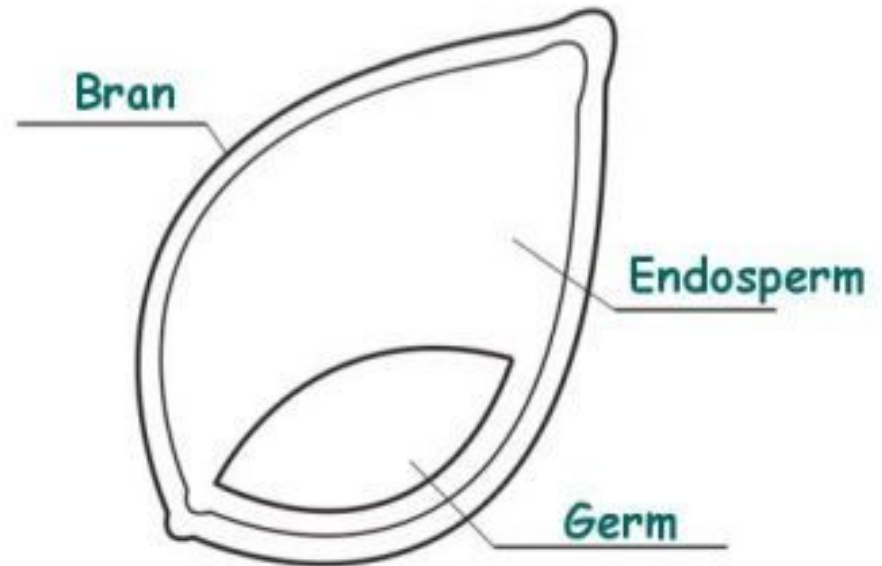
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**Bran**

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### The Structure of a Wheat Grain



What is a staple food?

Explain the importance of a staple food in a developing country.

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Name two diseases that eating whole grains may help to reduce:

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Rice

Rice is the most widely consumed staple food for a large part of the world’s population, especially in Asia.

**Tip:** The primary processing of rice is similar to that of wheat.

Long Grain Rice	Short Grain Rice
Brown (Whole Grain)	Arborio
White	Pudding
Basmati	Glutinous
Jasmine (Thai Fragrant)	Sushi
Wild	

Secondary Processing of Rice

Rice can be processed into many different products. Give 5 examples (minimum) of products obtained from the secondary processing of rice and explain how they can be used in cooking:

Nutritional value of rice. What is beri beri?

## Maize and Oats

### Maize

Sometimes called corn, maize is the third largest staple food crop in the world. It is grown and consumed in large quantities in South America, Asia and Africa.

Beyond the popularity of corn on the cob and sweet corn, maize is processed into other food products and ingredients.

List examples of food products made from maize or corn:

What is pellagra?

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Nutritional value of maize:

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### Oats

Oats are grown in cold temperature climates, such as Scotland. Their popularity as a breakfast cereal has slowed down due to growth in the variety of breakfast cereals available in the UK, yet they are a healthy breakfast choice.

Describe the primary processing of oats:

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Oats are used in the making of many products and dishes.

List examples of ways oats can be used in cooking:

Nutritional value of oats:

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## Barley and Rye

### Barley

Barley is the second most widely grown arable crop in the UK (after wheat). In the UK the most common way for processing barley is into pearl barley and barley flour.

How is barley used in food production?

Nutritional value of barley:

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### Rye

Rye is grown mainly in the north and east of Europe. It is a hardy crop and grows well in climates that are cold, wet and not suitable for wheat production.

How is rye used in food production?

Why is rye flour often combined with other flours when making bread?

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Nutritional value of rye:

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## Dairy

Milk is the first and most important food for young animals, and contains many valuable nutrients. Milk contains protein for growth and repair, carbohydrate for energy, and fat with fat-soluble vitamins including B vitamins. It is an excellent source of calcium and phosphorus- essential for healthy growth and maintenance of teeth and bones.

**Mind map all the different types of dairy product you can think of:**

### Secondary Processing of Milk

Choose the correct words from the options given to complete the following sentences.

**churning      solid      margarine      dairy      bacterial      fat**

- a) Secondary processing of milk produces other \_\_\_\_\_ products.
- b) Butter is made by \_\_\_\_\_ cream.
- c) Butter may be added to \_\_\_\_\_ to improve its flavour.
- d) Cream is made from the \_\_\_\_\_ of milk.
- e) Yogurt is made by adding \_\_\_\_\_ culture to milk.
- f) Cheese is milk in a \_\_\_\_\_ form.

Why does the body require dairy foods?

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Where should dairy products be stored and why?

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People with lactose intolerance can't tolerate which of the following milks? Tick the correct option.

Rice milk	Cows' milk
Soya milk	Coconut milk

Why was milk often unsafe to drink before the 1860s?

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Why is milk so useful in food preparation?

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Why is yogurt so popular? List as many reasons as you can think of.

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## Cheese

Cheese can be made from all types of milk but the most commonly used ones are cow, goat, sheep and buffalo milk. The nutrients found in milk will also be found in cheese, but in greater quantities due to the reduced water content.

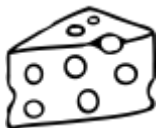
### Types of Cheese

There are many different types of cheese and they can be categorised into 'types'. Complete the table below with examples for each category.

Category	Examples
Fresh	
Soft	
Semi-hard	
Hard	
Blue	
Processed	

### How is Cheese Made?

Link the milk to the cheese. Explain the key processes that happen to the milk to turn it into cheese.



## Yogurt and Cream

### Yogurt

Yogurt is made from treated fresh milk and is widely available in all supermarkets.

There is now a vast choice of yogurts available and they can be consumed as a snack or as part of a sweet or savoury meal.

Below, mind map some ways in which yogurt can be used in cooking:

### Processed Yogurts

Some yogurts are processed to give extra health benefits.

Live yogurts:

Probiotic yogurts:

Bio yogurts:

### Cream

Cream is derived from the fat found in all fresh milk. Cream has a high fat content ranging from 18-55% fat depending on the production process used.

The levels of saturated fat in cream are the reason why it should not be eaten too frequently because of its links with coronary heart disease and raised cholesterol levels.

### Types of Cream

Complete the table below showing the fat level in different types of cream. What can each type of cream be used for?

Type of Cream	Fat % per 100g	Uses
Single		
Crème Fraiche		
Whipping		
Double		
Clotted		

Dairy Products

Complete the table with information about the main types of dairy products consumed in the UK.

Product	Description	Types
Milk		
Cream		
Butter		
Yogurt		
Ice Cream		
Cheese		

## Dairy

## Menu Planning

Plan a days diet to include 3 different dairy foods.

Four empty circles are arranged in a 2x2 grid. Each circle is white with a thin black outline. They are intended for a student to draw a picture related to their writing.

Some people do not drink milk or eat dairy products. What foods could they eat to provide calcium?

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### Soft Cheese V Hard Cheese

Carry out some research to find the differences between hard and soft cheese. Find 3 examples for both types.

[illegible]

Write your own poem about cheese:

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.