Year 7 Food Knowledge Organiser: Principals of Nutrition

The Eatwell guide

What is the Eatwell Guide?
The Eatwell Guide is a guide that shows you the different types of food and nutrients we need in our diets to stay healthy.

Why is the Eatwell Guide important?
The Eatwell Guide shows you how much (proportions) of food you need for a healthy balanced diet.

What are the consequences of a poor diet?
A poor diet can lead to diseases and can't stop us from fighting off infections.

What are the sections on the Eatwell Guide?
1. Fruit and vegetables
2. Potatoes, bread, rice, pasta and other starchy food
3. Dairy and alternatives
4. Beans, pulses, fish, egg, meat and other proteins
5. Oils and spreads

Eat 5 portions of Fruit and Vegetables a day. One portion is 80g .

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

Fat

Function:
Energy
Warmth
Protection of organs

Sources

Saturated Fat (Bad Fats)	Unsaturated Fat (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

Protein

Function:
Growth and Repair
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

Sources:
Bread
Pasta
Rice
Wheat
Potatoes
Cereals

Function:
Energy

Sugars:
Cakes
Sweets
Fizzy drinks

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

Water
Keeps us hydrated.

Source
Drinks, fruit and vegetables, soup.

Function	Too little
• Controls body temperature. • Gets rid of waste in the body.	• Dehydration leads to headaches, irritability and loss of concentration.

Fibre

Function:
It helps with digestion
It helps to get rid of waste

Source:
Wholegrain, Whole wheat, Wholemeal cereals, Peas and beans

Too Little
- Constipation
- Bowel Cancer

Heat Transfer and Cooking methods

Heat Transfer
The way in which heat energy is passed into food
Conduction - Transferring heat through a solid object into food
e.g. Frying bacon in a pan, using a pan on the hob, a metal spoon in water
Convection - Transferring heat through a liquid or air into food
e.g. Baking a cake, boiling water, cooking in an oven
Radiation - Transferring heat by infra-red waves that heat up what they come into contact with
e.g. grilling sausages or bacon, making toast

Cooking methods		
Dry Heat	**Moist Heat**	**Frying**
Baking	Steaming	Deep fat frying
Grilling	Boiling	Shallow frying
Roasting	Poaching	Stir frying
Barbequing	Stewing	Sautéing
Basting	Simmering	

Useful web links:
http://www.foodafactoflife.org.uk

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

Mineral	Sources	Function
Iron	Red meat, spinach, beans and lentils	Helps our red blood cells carry oxygen so that we are not anaemic.
Calcium	Milk, cheese and some cereals	Help us to have strong bones and teeth.
Sodium	Processed foods	Controls the body's water content and helps our nerves

Vitamin	Sources	Function
Vitamin A (fat soluble)	Fish, eggs, oranges	Helps us to see well
Vitamin D (fat soluble)	Eggs, the sun	Helps our bones to grow
Vitamin C (Water soluble)	Oranges, tomatoes, vegetables	Helps to heal cuts, helps the immune system.
B Vitamins (Water soluble)	Cereals, meat, fish	Helps to keep us healthy

Why Food is cooked
Different cooking methods change our food in different ways
Appearance, Texture, Flavour, Smell and Nutritional value

To improve shelf life
To make safe to eat
To develop flavour
To improve texture
To improve appearance
To give variety in diet

Year 7 Food Knowledge Organiser: Food and kitchen hygiene

Bacteria

A micro organism that multiply in certain conditions.

Where can bacteria be found?

Everywhere!

Are all bacteria bad?

No- some are good and essential for normal bodily function.

How can you reduce the risk of bacteria?

- Storing food separately
- Storing and cooking foods at the correct temperatures

The 4 C's

Cleaning – wash your hands properly

Cooking – make sure you cook food properly or you could make someone very ill

Chilling – keep it chilly silly

Cross contamination – keep raw meat and cooked food apart

Key Terms	
Hygiene	Keeping the workplace and food workers clean which ensures food is safe to eat
Hygiene procedure	The steps you would go through to ensure that a product is produced in a safe and hygienic way
Contamination	Presence in food of harmful substances or bacteria. To spoil or dirty something
Physical contamination	The presence of a foreign body in a food product for example a plaster that has fallen off the food workers hand
Chemical contamination	The presence of unwanted or unsafe chemicals in food
Biological contamination	The presence of harmful microorganisms in food
Danger zone	A temperature of between 5°C and 63°C when bacteria will grow most rapidly
Cross contamination	Safe food being contaminated by unsafe food.
Food poisoning	Chilled foods should be stored at between 1°C and 5°C to slow the growth of bacteria Illness caused by food being contaminated by microorganisms. Food poisoning occurs if harmful microorganisms contaminate food and are then allowed to grow.
Symptoms	The physical signs that are shown when someone is unwell

Storing Food

Temperature is really important to keep food safe. The following temperatures should be used:

Refrigeration	Fridges should run at **4°C** or below.
Freezing	Freezing of food at **-18°C** or below will stop bacteria multiplying.
Cooking	Temperatures of **75 °C** or above kills almost all types of bacteria.
Danger Zone	The temperature range where bacteria is most likely to reproduce: **5°C-63°C**.

High risk foods - ready-to-eat food that will support the growth of pathogenic bacteria easily and does not require any further heat treatment or cooking". Such foods are usually high in protein and moisture require strict temperature control and protection from contamination and include: cooked meats , cooked shellfish.

What do bacteria need to multiply?

Temperature: bacteria grows when warm

Time: if food is exposed to these things for a long time they will quickly multiply

Ph: Bacteria prefer conditions that are neutral.

Moisture: bacteria need moisture to grow

Food: provides the energy for bacteria to grow, multiply and produce toxins

Aerobic vs Anaerobic Bacteria

Aerobic	Anaerobic
Must have oxygen to survive	Cannot live in the presence of oxygen

Common Food poisoning Pathogens

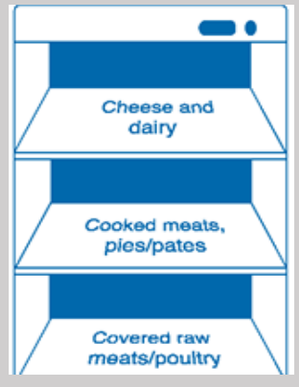
Pathogen	Sources	Symptoms
E coli	Raw meat, untreated milk and water.	Vomiting, blood in diarrhoea, kidney damage or failure
Listeria	Soft cheese, pate, unpasteurised milk, under cooked meat	Mild flu, meningitis and pneumonia
Campylobacter	Meat (chicken) shellfish, untreated water.	Diarrhoea, headache, fever, abdominal pain.
Salmonella	Raw meat , eggs, seafood, dairy products	Diarrhoea, vomiting and fever.
Bacillus cereus	Cooked rice, pasta, and cereal foods	Nausea, vomiting, diarrhoea
Staphylococcus Aureus	Anything touched by hand, Dairy product	Nausea, vomiting, diarrhoea

Watch video to confirm knowledge

https://www.youtube.com/watch?v=flxmB8NKMzE

Storage

To prevent cross contamination (the spreading of bacteria), foods must be stored separately. Follow the rules of food storage within a fridge:



Most bacteria grow rapidly at body temperature (37°C), but can grow between 5°C and 63°C. This is known as the danger zone. The more time food spends in the danger zone the greater the risks of harmful bacteria growing. Therefore it is vitally important that we try to keep food out of the danger zone during the production processes.