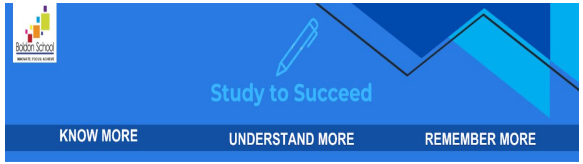
Design & Technology
Year 8
Food Technology Project

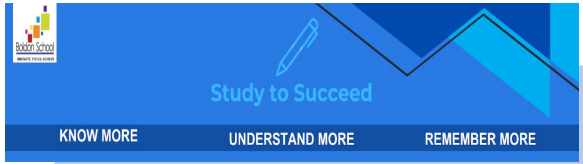


Hygiene RULES

- Tie long hair back.
- Always wash hands before handling food.
- Always wear an apron.
- Remove all jewellery and watches.
- Use correct coloured chopping boards.
- Do not cough or sneeze over food.
- Wash up with hot soapy water and use clean tea towels for drying.
- Report accidents and cuts immediately and cover then using a blue plaster.
- Wear a clean Apron.
- **Never lick your fingers or utensils and put them back into the food.**

Safety RULES

- Don't run with knives
- Don't run at all
- **Listen to the teacher**
- **Don't be silly**
- **Always use an oven towel when putting things in and taking things out the oven.**
- **Concentrate**
- **Don't touch electricals with wet hands**

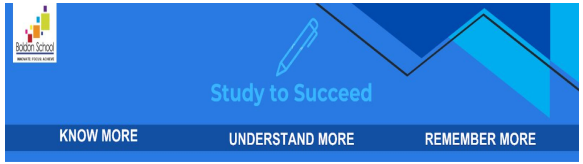


Nutrients:

A nutrient is substance that provides nourishment essential for the maintenance of life and for growth.

We get nutrients from the foods that we eat.

They are split into two different groups…



Macro Nutrients

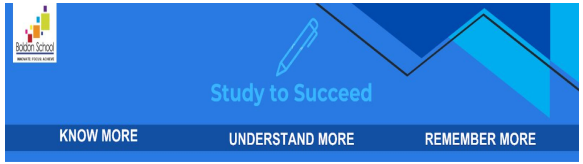
- Protein
- Carbohydrates
- Fat

These are called macro nutrients as the amounts in your food can be weighed in grams.

Micro Nutrients

- Vitamins
- Minerals

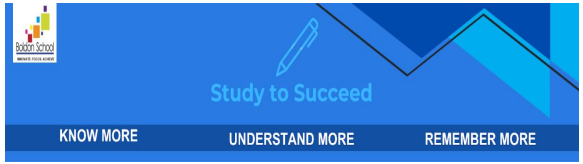
These are micro nutrients as very small amounts are found in your food.



Function of nutrients

We get the nutrients we need to survive from the foods we eat. Different foods belong to different nutrient groups and help to perform specific jobs in the body. We are going to discuss some of the main nutrients and their function:

Carbohydrates- This is where we get our main source of energy from in order to function and perform daily tasks. There are 2 types- starch & sugar.



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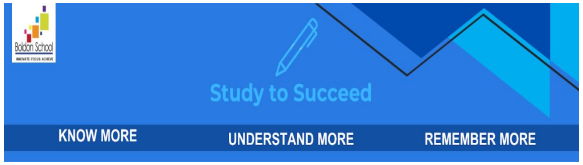
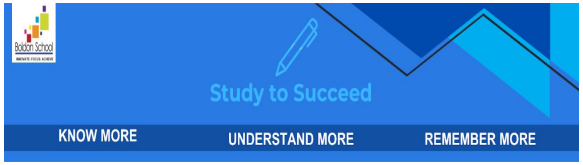


Function of nutrients

Protein- We need protein to support the growth, repair and development of our muscles. Protein is also responsible for the maintenance and repair of skin, hair and the core of b

Fibre- We need fibre so that our digestive system stays healthy. Fibre helps to speed up the removal of toxins and waste from the



Function of nutrients

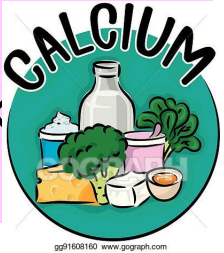
Vitamins and minerals help the body to perform a wide variety of things. There are many different types but they are essential as part of a balanced diet. Some examples include:

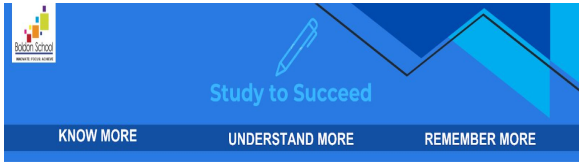
Vitamins

Vitamin C (anti oxidant), Vitamin A (keeps skin healthy/ improves vision), Vitamin K (helps blood clot after injury)

Minerals

Iron (Helps keep blood cells healthy so they can transport ox around the body), Calcium (keeps our bones & teeth healthy).

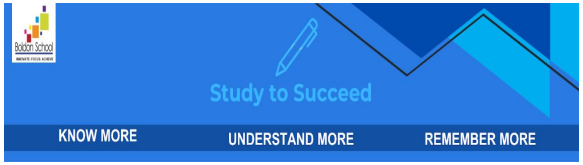




Function of nutrients

FATS- There are 3 different types of fat, and although too much fat can be bad for us we do need some in our diet!

S in more detail over the next few slides



visible & invisible fat…

- **Other foods with visible Fat** - Margarine, all cooking/ olive oil, fried foods (where you can see the fat) e.g. a fried breakfast, donner kebab, fish & chips.

- **Other foods with invisible Fat** –Crisps, salad cream, cream, meat, curries, pastries,
  AND in nearly ALL foods that have been made for you in a factory.

Types of fat:

All fats and oils fall into 3 categories:

- **SATURATED** - Mainly from animals – fat in and on meat, cheese, butter, suet , hard margarine.
- **MONO-UNSATURATED** - found in olive oil and avocados
- **POLY-UNSATURATED** – found in oily fish, soft margarines, sunflower seeds

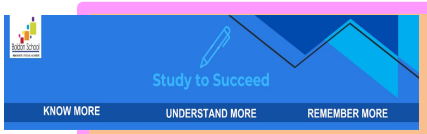
Why is FAT needed?

- To keep us warm
- As a source of energy
- Fat around our kidneys protects them from damage
- For hormone production
- Helps us feel ‘full up’ for longer
- Provides food with a good ‘mouth feel’
- Adds flavour to the meal

<u>FAT IS VERY HIGH IN CALORIES</u>

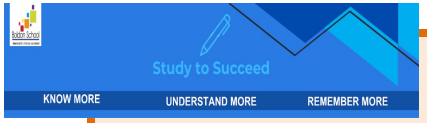
What if we have Too much FAT in the diet?

- Can lead to being overweight
- Causes constipation leading to bowel disease
- Causes liver problems (a real problem and is ‘silent’ until the liver is very damaged)
- Can lead to type II diabetes
- Can clog up the arteries causing heart problems
- All these can result in serious disabilities or DEATH !



What can YOU do to improve your diet?

- Ration the amount of fatty foods you eat over the course of a week.
- 1 bag of crisps a day instead of 2
- Chips once a week instead of daily
- Think about HOW you cook your food. What's healthiest?
- Grill, poach or oven bake foods rather than fry them.
- Try a reduced fat option- Any examples?
  e.g. semi-skimmed milk instead of full fat milk,
  crème fraiche or yoghurt instead of cream,
  lean meat instead of fatty meat,
  choose a starchy snack (bread) rather than a fatty snack (burger or sausage roll).



Food allergy

A **food allergy** is when the body's immune system reacts unusually to specific **foods**. Although **allergic** reactions are often mild, they can be very serious. Symptoms of a **food allergy** can affect different areas of the body at the same time. Some common symptoms include: an itchy sensation inside the mouth, throat or ears.

Common Foods that people are allergic to:

Nuts, Shellfish, Eggs, Soya

Food intolerance

A **food intolerance**, or a **food** sensitivity occurs when a person has difficulty digesting a particular **food**. This can lead to symptoms such as intestinal gas, abdominal pain or diarrhea. A **food intolerance** is sometimes confused with or mislabeled as a **food** allergy. **Food intolerances** involve the digestive system.

Common Foods that people are intolerant to:

Dairy products, Gluten, Caffeine.

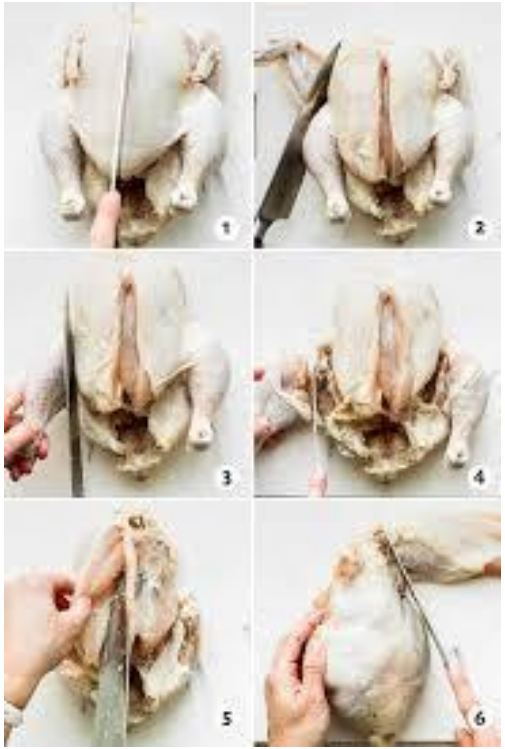
JULIENNE (VERY THIN SLICES 7 INCH LONG)

Julienne or French **cut**, is a culinary knife **cut** in which the food item is **cut into** long thin strips, similar to matchsticks. ... **Julienne** usually applies to vegetables prepared in this way but it can also be applied to the preparation of meat or fish, especially in stir fry techniques.

How to fillet a fish:

https://www.youtube.com/watch?v=ZJy1ajvMU1k - from 3min 32

How to portion a chicken:



https://www.youtube.com/watch?v=GSvzRyu2h5g 4 mins

How to poach an egg:

https://www.youtube.com/watch?v=pAWduxoCgVk 4 mins

Emulsification

How to make a Hollandaise sauce:

https://www.youtube.com/watch?v=-Hq18uWPFVM 4 mins

How to make a mayonnaise:

https://www.youtube.com/watch?v=ypQuZX5MVsI 4 mins

What is Product Analysis?

Product analysis is when we analyse a product, we look at it in great depth and ask questions about it. We investigate a product and pick parts to look at. Often it is useful to compare products. We do it everyday without even realising we are doing it!

Sensory Analysis

Appearance

Appetising, fragile, dull, wet, stringy, heavy, clear, flat, shiny, risen, attractive, colourful, smooth, tasty, greasy, hot, solid, powdery, smooth, translucent, slimy, bubbly, cloudy, foamy, soggy, colourless, moist, healthy, fresh, cold, fattening, dry, healthy, crumbly, bland,

Texture

Brittle, rubbery, lumpy, gritty , runny, stodgy, rare, bubbly, tender, soft, smooth, toasted, sliced, sizzling , well done, gooey, mashed, liquid, light, juicy, icy, glazed, fried, fibrous, dull , crispy, course, chewy, moist , powdery, Soggy, sticky, crunchy, firm, fizzy, oily, rubbery

Smell

bland, citrus, strong, spicy, over powering, meaty, cheesy, mellow, intense, fruity, dull, exciting, curried , alcoholic, bold,

Taste

Sweet, bitter, zesty, tangy, sour, sharp, rich, Salty, peppery, fishy, bland, flavourless, Burnt, creamy, fatty, undercooked, mild, tasty, watery, sickly, old, soggy , tasteless, flavoursome, stale, spicy, syrupy, vinegary, smokey, seasoned, pickled, nutty, minty, garlicky, buttery

Study to Succeed

KNOW MORE UNDERSTAND MORE REMEMBER MORE

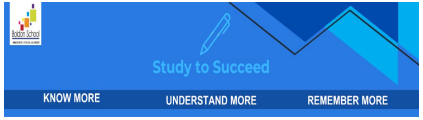
NUTRITIONAL NEEDS OF DIFFERENT LIFE STAGES

Nutrition through different life stages:

- No matter what life stage we are at it is important that we have the correct nutrients in order to keep our bodies fit and healthy.
- As humans, the nutrition we need may vary depending on our life stage. They may also vary depending on dietary requirements or lifestyle choices.

DEFINITION OF 'LIFE STAGES':

The term 'Life stages' refers to the stages of development that people go through during their life. i.e. infancy (babyhood), childhood, adolescence (teens), adulthood and later adulthood.

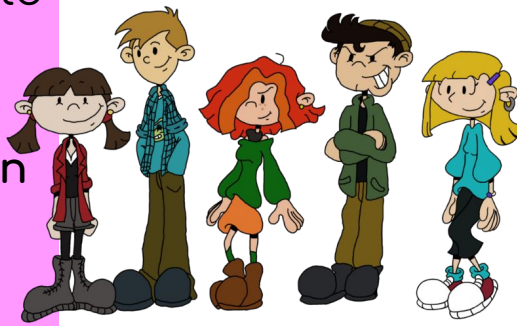


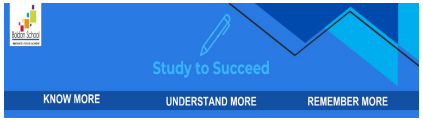
CHILDREN

- For children all nutrients are important especially protein, vitamins and minerals. They should have a balanced diet which covers all nutrient groups from the Eatwell guide.
- Children need lots of protein to support the growth and development of their muscles.
- Children grow at a very fast rate. This means they need nutrients that provide a lot of energy such as carbohydrates.
- Children should eat a range of fruit and vegetables- to give them the vitamins and minerals they need, they should have lots of calcium to support their bone growth and fibre to support their digestive system.
- Children should eat at least two portions of fish per week, one of which should be an oily fish such as mackerel, salmon or sardines. Fish provides protein and several vitamins and minerals.
- Some fat is needed in their diet but it needs to be the correct type of fat (unsaturated) and the right amount for their age and size.

ADOLESCENTS (TEENAGERS)

- **During this time young people grow and develop rapidly.** Adolescents need an increased amount of energy and nutrients for these physical changes.
- The nutrition needed can also vary between boys and girls, for example boys need more protein and energy than girls to support their quick growth spurt.
- **Teenagers need more iron to help with growth and muscle development**. After their period begins, **girls need more iron than boys. Iron can be found in meat sources, e.g. beef, lamb and liver.**
- Because their bones grow at a fast rate teenagers require foods high in calcium.
- Teenagers should aim to stay hydrated as this helps improve their levels of concentration and general well-being.





ADULTS

- Nutritional requirements do not change much between the ages of 19 to 50 for any person that doesn't have any dietary requirements. This excludes women who are pregnant.

- It is recommended adults try to eat a balanced diet including a variety of nutrients in order to stay healthy. A healthy, varied diet is one which contains a good range of foods from the Eatwell guide such as carbs, proteins, health fats, vitamins and minerals.

- Adults should aim to eat at least 5 portions of fruit and vegetables per day. It is suggested that eating a variety of fruit and vegetables a day could reduce illness and disease.

OLDER ADULTS

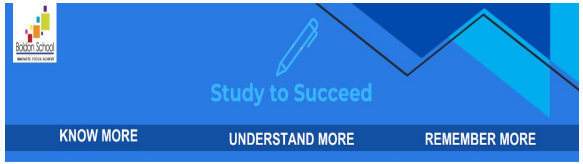
- Requirements for energy gradually go down after the age of 50 as activity level falls. In the UK, dietary recommendations are the same for older people as for the rest of the population and similar healthy eating guidelines apply.

- It is recommended that elderly people reduce their salt, fat and energy intake. A lot of these things are linked with high blood pressure, which is a major risk factor for stroke.

- Older people should eat a varied diet containing plenty of fruit and vegetables. They should try to have foods high in fibre to help speed up the digestive process because this slows down with age.

Study to Succeed

KNOW MORE UNDERSTAND MORE REMEMBER MORE



What are the main sources of bacteria?

Raw Food

Pests

People

Air and Dust

Soil

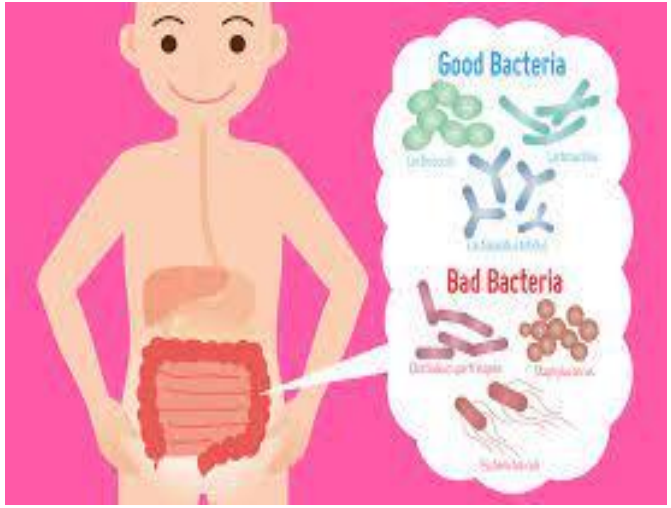
Food waste

Water

Animals

Bacteria...

Bacteria are microscopic organisms which are commonly referred to as **'GERMS'**. **They** found everywhere. This includes on and in people, on food, in water, soil and air. Some are **good** for us, and some are **bad!**



WHAT DO BACTERIA NEED TO MULTIPLY?

moisture

Warmth

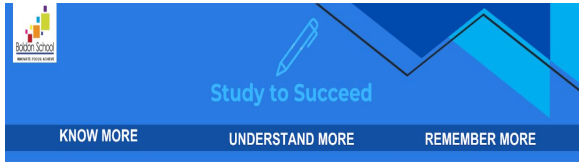
Time

Food

Food related causes of ill health: bacteria

A supply of food

- Bacteria need a supply of nutrients and energy from food to enable them to multiply.
- If food is not available to bacteria, they cannot grow and multiply. They grow well on foods high in protein



Food related causes of ill health: bacteria

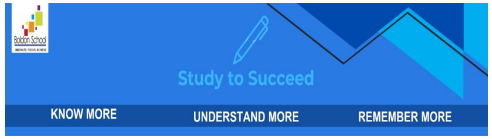
A supply of moisture

- Bacteria need water for them to grow, multiply.
- If moisture is not available to bacteria (e.g. dehydrated foods), they cannot grow and multiply.

Food related causes of ill health: bacteria

Warmth

- Bacteria grow and multiply fastest in warm temperatures: their **optimum** (best) temperature is **37°C**.
- If it is **too hot**, the bacteria will be destroyed.
- If it is **too cold**, the bacteria will grow and reproduce very slowly, until they become dormant (‘asleep’), which means they are still alive but not active.



Food related causes of ill health: bacteria

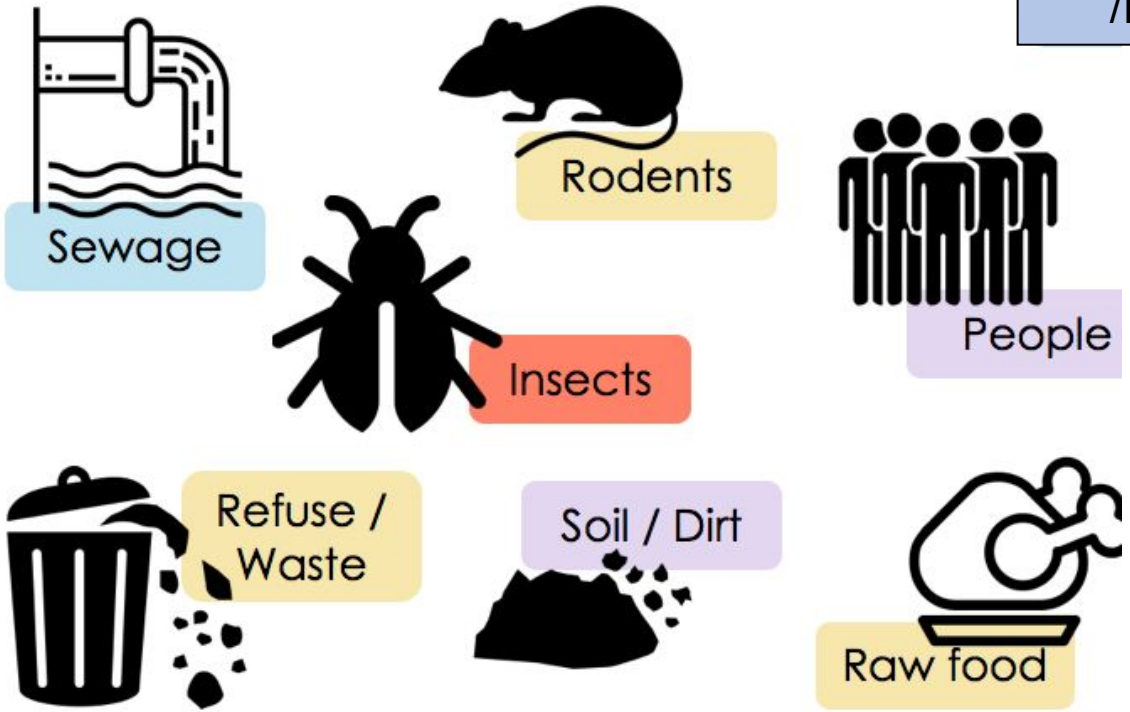
Time

- It takes time for bacteria to grow and multiply, and the more suitable the conditions, the faster they will do so.

- Under the ideal conditions, a single bacterium can multiply to create millions of bacteria in just a few hours!

- The single-celled bacterium divides into two identical daughter cells. This process is called **binary fission**(every 4 to 20 minutes)

Food Poisoning Bacteria: Sources



Animals /Birds

Sources of food poisoning bacteria:

- People Sewage
- Raw Food
- Insects
- Soil/ dust
- Refuse/ waste
- Animals/ birds
- Contaminated packaging