

Macronutrients

Macronutrients are needed in large amounts to make the body function properly.

Protein:

These are made up of **essential amino-acids** and **non-essential amino-acids**. (Our bodies can make non-essential amino acids, but we need to get essential amino acids from our food).

Source

- HBV – these have all the essential amino acids
- Meat, fish, dairy, eggs (animal sources)
 - Tofu
- LBV – these are missing at least one essential amino acid
- Seeds, nuts, beans, pulses, cereals, Quorn (plant sources)

Function

Growth
Repair
maintenance



Dietary Reference Values

Age	Amount
1-3	15g
4-6	20g
7-10	28g
11-14	42g
15-18	55g
19-50	55g
50+	53g

Not enough

Kwashiorkor
Oedema
Anaemia
Slow growth in children

Too much

Excess protein can be converted to energy. If unused turns to fat.

Complementary actions

Combining 2 or more LBV proteins helps get a balance of essential amino acids. e.g. beans on toast.

Fats, oils and lipids:

Too much fat is bad for you, but so is not enough.

Source

Saturated Fats

(From Animal sources. They are also called unhealthy fats. They are generally solid at room temperature)
Sausages / Bacon / Lard / Dairy



Unsaturated Fats

(These are healthier. They are often liquid at room temperature.)
Monounsaturated fats – olive oil / avocados
Polyunsaturated fats – sunflower oil / seeds



Omega-3. These are Polyunsaturated and called "healthy" fats as your body needs them but can't make them. They are good for your heart.
– Oily fish / Nuts / Seeds



Function

Energy
Warmth
Protection of organs
Source of fat soluble vitamins
Hormone production

Dietary Reference Values

DRI	Men	Women
Total fat	95g	70g
Sat fat	30g	20g

Too much

Obesity
Heart disease
Type 2 diabetes
Stroke
Cancer

Not enough

Vitamin deficiency (fat soluble)
Unprotected organs

Carbohydrates

There are 2 kinds, simple or complex.



Source

- Simple - these are sugars (monosaccharides, disaccharides)
Cakes, jam, soft drinks
- Complex - these are starches (polysaccharides)
Bread, potatoes

Function

- Simple**
Quick burst of energy
- Complex**
Longer lasting energy



Free sugars

These give you no nutritional benefit other than energy.

Not enough

Can make blood sugar level drop

- hunger,
- dizziness,
- Tiredness
- Lack of energy

Our body will use protein for energy (leads to loss of muscle)

Too much

- Excess is turned into fat
- Can cause obesity
- Too much sugar leads to dental problems
- Can lead to type 2 diabetes

Dietary advice

- Reduce the amount of sugar that we eat, no more than 5% of our diet.
- Complex Carbohydrates should make up half of the energy we eat.
- Wholegrain cereals are a good source of fibre

Nutrition: Describe functions of nutrients in the human body.

Fruits & Vegetables

40%

- eat 5 portions a day!
- choose a variety
- provides fibre for healthy digestion
- provides vitamins and minerals for healthy body functions and immune system

Fatty and Sugary Foods

0%

- these are the danger foods!
- they are not part of a healthy diet
- eat them only occasionally
- eating too much fatty and sugary processed food is linked to increased risk of weight gain/obesity, diabetes, tooth decay and cardiovascular disease

Beans, Pulses, Eggs, Meat, Fish

- provide protein for growth, repair and maintenance of body cells
- choose a combination of plant proteins
- avoid eating too much processed meat like bacon and sausages as these are linked with increased risk of bowel and stomach cancer

Starchy Foods

38%

- provide slow release carbohydrate used by the body for energy
- choose wholegrains for increased fibre (good digestion, reduced risk of heart disease)



12%

8%

Dairy Foods

- provide calcium for healthy bones, teeth and nails
- the body needs Vitamin D to absorb calcium effectively



Portion Control!

Healthy diets not only have the correct balance, but have the right portion sizes. Here is a 'handy' guide...
vegetables = double cupped palm.
grains/starches = clenched fist.
protein = palm of hand.
fruits = clenched fist.
thumb = fats.



Water Intake

A balanced diet must include water, it is required for nearly all brain and other bodily functions
 See slide 2 for more details on water

Oils & Spreads

1%

Provide fat soluble vitamins A,D,E & K
 Are high in calories & energy so keep use to a minimum
 It is recommended to choose unsaturated oils like olive oil

The Eatwell Guide is the UK Healthy Eating Model. It shows what we should eat as a balanced diet. The size of the sections represents the proportion of our diet that particular food group should make up. The Eatwell Guide was updated in 2016 to take into account scientific opinion and public opinion. The main change was that sugary and fatty foods are shown off the plate as they are not part of a healthy

	Nutrient	Source	Function	Effects too little (deficiency)	Effect of too much (access)
MACRONUTRIENTS	Carbohydrates Click here to see a video.	<p>Starches – found in cereal grains such as rice, wheat, oats, plus starchy tubers (potatoes and sweet potatoes) and vegetables (carrots, beets, corn)</p> <p>Sugars – lactose found in milk and dairy, fructose found in honey, fruits and some vegetables (peppers, tomatoes etc.)</p>	<p>Two types:</p> <p>1. Starchy (complex) provide energy when broken down – slow release energy to the body (wholegrain provide slower release carbohydrates)</p> <p>2. Sugary (simple) provide quick release energy to the body's' cells.</p>	<p>Deficiency of carbohydrates is extremely rare in the UK.</p> <p>Long term lack of carbohydrates in the diet can cause Ketosis – a condition where the body switches to using protein as an energy source.</p> <p>Visible symptoms- lack of energy and weight loss.</p> <p>Non- visible symptoms- Not enough fibre from wholegrains foods leads to constipation and other intestinal problems.</p>	<p>If not used for energy it becomes stored as fat. Visible symptoms weight gain and obesity.</p> <p>Non- visible- eating too much non refined(white carbs) leads to tooth decay, raising blood sugar levels and type 2 diabetes.</p>
	Proteins Click here for video	<p>High Biological Value (HBV) protein: Meat, fish, poultry, eggs,</p> <p>Low Biological Value (LBV) protein: Tofu, beans, nuts.</p>	<p>Protein is digested by the body into its component parts – called amino acids. There are 8 which are essential for adults and 12 for children. HBV protein foods contain all the essential amino acids.</p>	<p>Visible symptoms-</p> <ul style="list-style-type: none"> Wasting of muscle & muscle loss Oedema – build up of fluids in the body Slow growth in children <p>Severe deficiency leads to kwashiorkor (bloating of the stomach)</p> <p>Non-visible symptoms- weaker immune system which needs protein to function properly.</p>	<p>Visible symptoms excess stored as fat, lead to weight gain and obesity.</p> <p>Non-visible symptoms- Puts a strain on how well the kidneys work.</p>
	Fats Click here for video Click here for more info	<p>Butter, cheese, dairy foods including yogurt, crème fraiche, milk</p> <p>Oils, lard, suet, dripping.</p>	<p>Fat is a term used to describe lipids – this can refer to solid fats and oils. Fat is broken down by the body and used for energy, Also used to provide warmth when stored under the skin. Is a dietary carrier of fat soluble vitamins A, D, E & K.</p> <p>Two types of fats: Unsaturated and saturated.</p>	<p>Visible symptoms- Weight loss over time as the body uses stores of fat. Person feels cold as fat under skin acts as insulator.</p> <p>Non-visible symptoms- Bruising of the bones as they are not protected. Lack of fat in the diet can lead to deficiencies of fat soluble vitamins A, D, E & K.</p>	<p>Common issue in the UK</p> <p>Visible symptoms- Stored under the skin in adipose tissue cells, which leads to disease such as type 2 diabetes, obesity and heart disease and high bloody pressure.</p> <p>Non-visible symptoms- Internal organs store fat which prevents them working properly. Fat blocks arteries.</p>



Unsaturated Fat:

- *Liquid at room temperature.*
- *Mainly from non-animal (plant) sources.*
- *Can lower blood cholesterol.*



Saturated Fat:

- *Solid at room temperature.*
- *Mainly from animal sources. *With the exception of palm and coconut oil.*
- *Causes high blood cholesterol.*

Micronutrients

Micronutrients are needed in **small amounts** to make the body function properly.

Vitamins

They all have different functions, but generally

- Help the body release energy
- Prevent some diseases
- Keep the body healthy
- Repair cells

Fat soluble vitamins: vitamin A, and vitamin D

- Don't need to be eaten every day as the body can store them in the liver and fatty tissues.
- Too many in our diet can cause us harm

Water soluble vitamins: vitamin C

- Not stored in the body so need to be eaten
- To maximise the intake and prevent loss, steam instead of boil the food, or use the water in gravy
- Excess vitamins are eliminated in the urine

	Source	Function	Deficiency
B1 Thiamin	Bread / Pasta / rice / peas / eggs / liver	Energy release	Tiredness
B2 Riboflavin	Milk / eggs / leafy greens	Energy release / repair	Tiredness / dry skin
B3 Niacin	Wheat / nuts / meat / fish	Energy release / skin	Tiredness
B9 Folic Acid	Liver / peas / leafy greens	Growth / healthy babies / red blood cells	Anaemia / tiredness
B12 Cobalamin	Milk / eggs / meat / fish	Red blood cells	Tiredness / nerve damage
C	Citrus / tomatoes / green veg	Immune system / absorbs iron	

Minerals

Minerals help chemical reactions in our body.

	Source	Function	Deficiency
Calcium	Dairy, green leafy veg, bread	Strong bones	Weak bones, rickets and osteoporosis
Iron	Meat, green leafy veg	Red blood cells	Anaemia
Potassium	Fruit and veg	Heart health	Bad for your heart
Magnesium	Green leafy veg	Release energy and bone health	Nausea

Water

Keeps us hydrated.

Source

Drinks, fruit and vegetables, soup.

Function

- Normal physical and cognitive functions,
- Normal regulation of the body's temperature.
- Gets rid of waste substances in the body.

Deficiency

- Even mild dehydration can lead to headaches, irritability and loss of concentration.
- Groups at risk include children, old people and active people.

Trace Elements

Trace elements help chemical reactions in our body.

	Source	Function	Deficiency
Fluoride	Fish, toothpaste	Strengthens teeth	Weak teeth
Iodine	Seafood and dairy	Hormone development	Complications in unborn babies

Fibre

Fibre is also known as "roughage" or "non-soluble polysaccharides (NSP)".

Insoluble fibre

Source

Wholegrain, whole wheat and wholemeal cereals

Function

- Insoluble fibre goes through the body and collects rubbish and waste before pushing it out as poo.
- This acts like a sponge by expanding to hold water and waste
- Helps keep poo soft
- Prevents constipation

Deficiency

Constipation, bowel cancer

Soluble Fibre

Source

Peas, beans, lentils, apples and citrus fruit

Function


- Lowers cholesterol, helping reduce the risk of heart disease.
- Helps to control the level of blood sugar by slowing down the release of food from the stomach (good for diabetics)

RDA

30g per day

unsatisfactory nutritional intake.

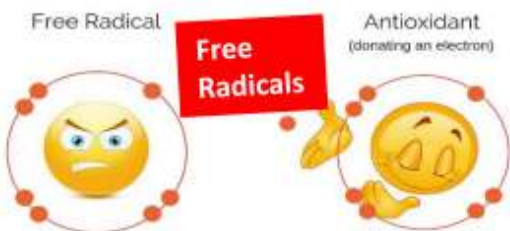


Fat Soluble	Needed For	Found In	Deficiency/ Excess
A Antioxidant	<ul style="list-style-type: none"> needed for structure and functioning of the skin and mucous membranes, cell differentiation helps with vision in dim light and colour vision keeping the immune system healthy 	<ul style="list-style-type: none"> dairy products dark green veg orange coloured fruit and veg fish oils and liver 	<p>Deficiency- poor vision, night blindness.</p> <p>Excess- stored in the liver and too much can be toxic.</p>
D	Needed for the absorption of calcium and phosphorus from foods, to keep bones healthy.	<ul style="list-style-type: none"> fish oils dairy products sun light absorption often added to cereal and margarine. 	<p>Deficiency- Rickets (soft deformed) Osteomalacia (weak bones)</p> <p>Excess: build up of calcium, poor appetite, vomiting</p>
E Antioxidant	Helps maintain healthy skin and eyes and strengthen the body's natural defence against illness and infection.	<ul style="list-style-type: none"> dairy products dark green veg nuts 	<p>Deficiency- Rare- age quickly, wrinkles, skin loses elasticity.</p> <p>Excess- in very large doses may interfere with absorption of vitamin A</p>
K	<p>Needed for clotting of blood and is also required for normal bone structure.</p> <p>Infants are given vitamin K at birth.</p>	<ul style="list-style-type: none"> dark green veg fish liver fruit 	<p>Deficiency- Hemorrhages- ruptured blood vessels.</p> <p>Excess- unknown</p> 



Vitamins and Minerals are chemicals found naturally in food. With the exception of Vitamin D, which can be manufactured through the action of sunlight on the skin, vitamins cannot be made by the body, and must be provided by the diet. They are needed in minute (tiny) amounts to perform specific functions and fall into two different classes:

Water Soluble	Fat Soluble
C	A
B group	D
	E
	K



Essentially, damaged oxygen molecules with an extremely unstable atomic structure. They attack fats and proteins all over the body, especially those in membranes that line the blood vessels, the skin and other connective tissue. They can make you age a lot quicker! Anything we do to raise our metabolic rate (like exercise) accelerates

Water Soluble	Needed For	Found In	Deficiency/ Excess AC1.3 Explain characteristics of unsatisfactory nutritional intake.
C Antioxidant	Normal structure and function of connective tissue e.g. collagen. Helps healing process. Antioxidant (protects from free radicals). Helps absorb iron in the body. Improves immune system.	main sources from plants – fruits and vegetables. milk and liver contain small amounts.	Deficiency- Scurvy, very rare symptoms include bleeding gums, wounds not healing properly, tiredness. Lack of vitamin C effects absorption of iron. Excess is eliminated from the body within 24 hours so not a problem.
B1 Thiamin	Normal function of the nervous system and heart	whole grains, meat, flour and breakfast cereals.	Deficiency- Beri-beri (disorder of the nervous system). Excess- body excretes it.
B2 Riboflavin	Release of energy from food.	milk, eggs, green vegetables, cereals.	Deficiency- Dry cracked skin around the mouth and nose. Excess- body excretes it.
B3 Niacin	Energy release, skin and membranes.	milk, eggs, cheese, meat.	Deficiency- disease pellagra. Symptoms can include dermatitis, dementia and diarrhoea. Excess- body excretes it.
B9 Folate	Red blood cells and nervous system.	green leafy vegetables.	Deficiency- can lead to anaemia. Symptoms can include insomnia, depression and forgetfulness. Excess- body excretes it.
B12 Colbalbumin	Cell division and blood formation. Normal structure of nerves.	animal sources – milk, meat and eggs. some algae and bacteria can	Deficiency- Anemia (rare), may be found in vegetarians. Excess- body excretes it.

	Nutrient	Function	Source	Effects too little (deficiency)	Effect of too much (access)
MINERALS	Iron	<ul style="list-style-type: none"> needed to make haemoglobin in red blood cells which transports oxygen around the body also removing waste substances from the body 	<ul style="list-style-type: none"> red meat, offal non-haem iron found in wholegrain foods, leafy green vegetables, fortified breakfast cereals <p>key fact</p> <ul style="list-style-type: none"> iron is only absorbed in the presence of vitamin c 	<ul style="list-style-type: none"> Iron deficiency anaemia is the most common dietary deficiency in the UK Visible symptoms include tiredness, paleness, lethargy, weak and splitting nails 	<ul style="list-style-type: none"> side effects of taking high doses (over 20mg) of iron include constipation, vomiting very high doses of iron can be fatal, particularly if taken by children, so always keep iron supplements out of the reach of children
	Calcium	<ul style="list-style-type: none"> needed by the body to build strong bones and teeth essential for blood clotting process and blood pressure essential for nerve signal transmission and muscle contraction the skeleton contains about 99% of the body's calcium 	<ul style="list-style-type: none"> dairy foods including milk, yogurt, cheese, butter dark leafy green vegetables, fish with edible bones including sardines and pilchards non-dairy milks fortified with added calcium 	<p>Visible symptoms Lack of calcium in children can cause rickets Osteoporosis (brittle bones) in adults later on in life when bone density is less. Rickets wear children's bones are weak and soft causing them to be deformed.</p> <ul style="list-style-type: none"> To find out more click here <p>Non-visible symptoms</p> <ul style="list-style-type: none"> bones and teeth weaken, nerves and muscles don't work properly blood will not clot and form a scap after an injury 	<p>Hypercalcemia is a condition in which you have too high a concentration of calcium in your blood.</p>
	Sodium	<ul style="list-style-type: none"> controls the amount of water in the body makes nerves and muscles work properly 	<p>salted foods, yeast extract, stock cubes, gravies, seasonings, snack foods, canned fish, bacon, ham, fast foods, ready meals, baking powder and takeaway foods</p>	<p>Visible symptoms:</p> <ul style="list-style-type: none"> Unlikely, but can be caused by excessive sweating or vomiting and diarrhoea, muscle cramps, weakness. 	<ul style="list-style-type: none"> water retention and swelling high blood pressure heart problems headaches guideline is 6g for adults 4g for teenagers

We use the eatwell guide to get a balance of healthier and more sustainable food. It shows how much we should eat from each group.



4. Eat less saturated fat and sugar

Too much fat is bad for you and causes dietary health problems (heart disease, obesity, stroke)

How?

- Cut visible fat from the meat
- Choose lean cuts of meat
- Offer low fat spreads

Too much sugar caused type 2 diabetes, heart disease, obesity and dental problems (heart)

How?

- Use sugar substitutes for puddings, cakes and biscuits
- Offer fresh fruit alternatives
- Use less processed foods – especially sauces

5. Eat less salt

Eat no more than 5g a day.

Too much salt causes high blood pressure, strokes and dehydration

It is highly addictive!

How?

- Cook dishes using fresh ingredients
- Don't add salt at the table
- Don't add salt to the cooking water

2. Eat lots of fruit and veg

We should eat at least five a day.

How?

Choose from fresh, frozen, tinned, dried or juiced.

Add vegetables to meals

Add vegetables or fruit to cakes and desserts

3. Eat more fish

Fish is a good source of protein, contains vitamins, minerals and omega 3.

How?

Aim for at least two portions of fish a week

1. Base your meals on starchy food

Most of the food on your plate should consist of starchy foods

These supply important energy and give important minerals and dietary fibre.

Whole grain and whole wheat versions are best

How?

Have a side of starchy food like potato, rice, pasta or bread.

We also follow the 8 government healthy eating guidelines:

6. Get active

If you eat more energy than your body needs, it is turned into fat. If you don't eat enough energy your body cannot function properly.

Being overweight can lead to heart disease, high blood pressure or diabetes.

Being underweight also affects your health and leads to bulimia or anorexia.

How?

- Only eat as much food as you need
- Exercise for 30 minutes a few times a week.

8. Eat breakfast

Breakfast is the most important meal of the day as it gives energy for the day..

It should be made up of complex carbohydrates for a slow release of energy and stop us snacking.

7. Drink plenty of water

Our bodies are 2/3s water. It is vital to drink enough water to stay hydrated.

Even mild dehydration can lead to headaches, irritability and loss of concentration.

How?

- Drink loads of water
- Fruit, soup and other drinks also count

Life Stages

Toddlers

Eatwell guide doesn't apply
High calcium
Small meals
Variety of different foods

Young Children

- Protein for growth and development
- Given small, attractive portions of food
- Introduce to new foods gradually
- Avoid fatty and sugary food
- Calcium and Vit. D for bones and teeth

Teenagers

- Should be given protein for growth and development
- Risk of obesity and poor skin - Eat 5-a-day to help
- Good supply of iron (esp. for girls during period)
- Avoid fatty or sugary food
- Try to develop good habits

Early and middle Adulthood

Follow eatwell guide
Men need more calories
Women need more iron
Calcium and vitamin for strong bones



Elderly

- Should be given protein to repair worn out body cells
- Need a good supply of calcium and vitamin D for healthy bones
- Good supply of iron to keep the body healthy
- Need more fat in the winter to stay warm
- Fresh fruit and vegetables for vitamins and minerals
- May struggle to cut (arthritis) or chew food (false teeth) and digestive problems.

Special Dietary Needs

Allergy: an adverse reaction by the body to certain substances

Intolerance: condition that makes people avoid certain food because of the effects on their body

Allergic reaction: the way someone responds to certain food.
- For example: a rash/swelling/anaphylactic shock

Type 2 Diabetes	Starchy food/high in sugar
Low fat diet	Foods naturally high in fat Foods cooked in a lot of fat
Low salt diet	Processed food Smoked meat Chinese food with MSG
Nut allergy	Avoid nuts, blended cooking oil, margarine with nut oils and often seeds
Lactose intolerance	Avoid milk, cheese, yogurt, processed food
Gluten intolerance (coeliac)	Avoid Wheat, wholemeal, bran, pasta, rye, beer.
Iron deficiency anaemia	High iron food – red meat, dark green leafy vegetables
Calcium deficiency	High calcium food – dairy High Vit. D food – tuna, salmon
Dental Caries	Limit sugary food
Cardiovascular disease and obesity	Correct portion size Reduce Saturated fats Fruit and veg to replace fatty food

Specific Lifestyle Choices

Religious/cultural

Muslims

- do not eat pork
- Meat must be halal
- No alcohol or shellfish



Hindus

- Do not eat beef (a cow is considered sacred)
- Many are vegan, although some do eat meat

Jews

- No pork or shellfish
- No milk and meat together
- Meat must be kosher



Vegetarians - Ethical or moral choices

- Dishes with vegetables generally healthy
- Need protein from other sources
- Risk of iron, B1, B9 and B12 deficiency
- Protein from Quorn/tofu

	Eat	Avoid
Pescatarian	Fish/animal products (eggs and dairy)	Meat
Lacto-ovo vegetarian	Animal products (eggs and dairy)	Meat, fish
Lacto-vegetarian	Dairy	Meat, eggs, fish
Vegan		Animal products



Physical Activity

People may have high energy needs if they are physically active, such as sports people or people who are on their feet a lot.

Nutrition through life differs mainly due to the need for energy and protein for growth and development – in younger age groups, growth and development occurs, in older age groups only maintenance of the body is required, therefore protein and energy requirements are reduced.

GENDER affects nutritional requirements after puberty – before puberty male and female requirements are the same. Puberty causes girls to begin menstruation, increasing their iron needs, which remain higher than men until the menopause which occurs around 50 years of age. Generally males are physically larger than females and therefore need to consume more energy and protein on a daily basis.

PHYSICAL ACTIVITY LEVEL affects a person's energy requirements. The more active a person is, the more energy they need. It is recommended that extra energy requirements come from extra starchy carbohydrate in the diet. Increased PAL could be from having an active job or from playing lots of sport.

Babies and Toddlers

- milk only for first 4-6 months
- weaning occurs from 6 months – introduce a wide variety of textures and colours
- avoid nuts (choking hazard), salt and sugar.

Pre-school children

- balanced diet needed – in line with Eatwell Guide from 12 months
- high needs for energy and protein due to rapid growth and constant movement
- full fat dairy products should be consumed
- salt and sugar should be avoided

Children

- balanced diet needed – in line with Eatwell Guide from 12 months
- high needs for energy and protein due to rapid growth and constant movement
- 5-a-day is recommended.
- energy requirements increase because they grow quickly and become active.
- good supply of protein, calcium, iron, vitamin A and D, as part of a healthy, balanced diet
- calcium and vit D for healthy tooth development, and strong bones.
- limit sugary carbohydrates such as sweets -tooth decay.
- fat: small amounts for energy and insulation.
- young children small stomachs, small and frequent meals. No room for junk food
- children cannot cut food and chew as easily so need easy to eat foods
- avoid nuts- choking and allergy risks.
- children need plenty of fluid and they should be encouraged to drink regularly, especially if they are very active.

Teenagers

- Increased needs for iron in teenage girls due to menstruation
- Calcium intake & vitamin D are really important to ensure Peak Bone Mass is reached – setting up bone health for life.
- Boys need extra iron initially for growth and muscles but this need decreases after age 19.
- Boys need more protein and energy than girls due to their later growth spurt
- *Many UK teenagers are lacking in calcium, iron and vitamin A.*

Adults

Requirements do not change much between the ages of 19 to 50, except during pregnancy and lactation. Well balanced diet modelled on the Eatwell Guide essential.
Many UK adults eat too much fat, too much salt and not enough fruit and vegetables.

Elderly

- older adults need protein to repair worn out body cells. they need a good supply of calcium and vitamin d in order to maintain healthy bones and teeth and iron to keep bloody healthy. in winter time, they may need a little more fat in their diet to provide body warmth. fresh fruit and vegetables are important for a good supply of vitamins and minerals.
- old people may have digestive problems or may have difficulty cutting food (because of arthritis) or chewing food (because of false teeth).
- examples of food suitable for the elderly = soft foods – boiled potatoes, stew, soup, casseroles, one pot meals.
- a good supply of fibre is needed to prevent constipation in the elderly who may be less active. Older adults may have a weaker sense of thirst. If necessary they should be helped and encouraged to drink regularly.

Pregnancy & Lactation

Because the body becomes more efficient at absorption during pregnancy, normal nutritional requirements apply until the last third of pregnancy, when some extra energy and calcium is required. Pregnant and lactating ladies should eat a varied diet rich in fresh fruit and vegetables and wholegrains (in line with the Eatwell Guide).

There are some foods to avoid:

- unpasteurised milk products and undercooked meats/cured meat products – they may contain listeria which is harmful to unborn babies
- pate, liver and liver products – due to high vitamin A content (Vitamin A is harmful to unborn babies if eaten in large quantities)
- swordfish, marlin and shark as they are high in mercury which can be harmful to unborn baby

Hospitality and catering Unit 2– Life stages and dietary needs

Medical Diets	Religious Diets	Ethical Diets
<p>Nut & other allergies Must avoid particular allergen, otherwise an allergic reaction may occur. Serious allergic reactions can result in anaphylaxis and even death. The 14 common allergens which must be declared on menus and food packaging are: celery, gluten, crustaceans, eggs, fish, lupin, milk, molluscs, mustard, nuts, peanuts, sesame, soya, sulphites.</p>	<p>Halal (Muslim) Halal is Arabic for permissible. Halal food is that which adheres to Islamic law, as defined in the Koran. Haram is the opposite to Halal and describes food which is not permitted under Islamic law. Haram items that Muslims will not consumer include pork and all pork products as well a alcohol.</p>	<p>Vegetarian Vegetarians do not eat any flesh – they do not eat meat, poultry or fish/shellfish. Vegetarians do eat dairy products and eggs (lacto-ovo-vegetarian).</p>
<p>Lactose intolerance - Link to website here People who are lactose intolerant do not make the digestive enzyme which is needed to digest lactose (a milk sugar found in dairy products). If they consume lactose, they will experience digestive discomfort including cramps, excess wind and diarrhoea. Lactose intolerant people can consumer lactose free milk and dairy products or dairy alternatives. They must be careful to ensure they get enough calcium in their diet.</p>	<p>Kosher (Judaism) Judaism instructs its followers to observe a kosher diet, this means no pork. Kosher food also does not mix dairy products and meat in the same meal/course. Foe example, a burger must be served without cheese.</p> <div style="text-align: center;"> </div>	<p>Vegan Vegans avoid consuming any animal products – including milk and dairy products, Protein is a nutrient which can be lacking in a badly planned vegan diet – vegans can eat wholegrain cereals, nuts, beans, lentils and tofu. Calcium may be lacking in a vegan diet – some vegans replace dairy with calcium fortified alternatives such as soya milk or almond milk.</p>
<p>Coeliac - Link to website here Coeliac disease sufferers react to the presence of gluten, a protein found in wheat flour and wheat flour products. They must avoid consuming gluten. Gluten is present in any wheat flour – alternatives such as</p>	<p>Hindu Followers of the Hindu religion do not eat Beef, as they believe it is a sacred animal.</p>	<p>Pescetarian Pescetarians do not eat meat, but will eat fish and shellfish.</p>
<p>Coronary Heart Disease - Find out more click here People who are diagnosed or at risk of Coronary Heart Disease are currently recommended to adopt a low sugar, low saturated fat, high fibre and fruit and vegetable Mediterranean style diet.</p>	<p>Buddhist Buddhists are usually vegetarian and do not consume meat or fish.</p>	<p>Flexitarian This is a new concept – followers of a flexitarian diet choose vegetarian or vegan diet meal choices for some parts of the week, in order to reduce their carbon foot print. Meat-Free Mondays campaign spearheaded this movement.</p>



Dairy free



Sources of contamination:

Food can get contaminated in a number of ways.

Name	Natural contamination	Additional contamination	Prevention
 Biological	Food poisoning bacteria	Bacteria from another source	Store food properly Cook food properly No cross contamination Clean hands
 Chem	Chemical - poison, or pesticides	From cleaning chemicals,	Store your cleaning chemicals away from food Always label chemicals Always wash fruit and vegetables
 Physical	Bones	Foreign objects (hair, plasters, flies, screws)	Tie your hair up Remove jewellery Wear blue plasters

Signs of Spoilage

Discolouration - Change in colour

Change in texture - Slimy, wrinkly, lumpy, hard

Visible mould

Smell - Sour, bitter or sharp

Change in flavour - Sour, rancid, acidic

Positive use of Microorganisms:

1. Mould is added to blue cheese
2. Yeast is used to make bread
3. Bacteria is used to make yoghurt

Food Preservation:

Food need to be preserved in a way that reduces the bacterial growth, moulds or spoilage.

Controlling temperature
Removing moisture/air
Changing pH
High cooking temperature

Why Bother?

Prevents food poisoning
Reduces food waste
Saves money
Helps planet

Methods of cooking food

Method	How	Example	Advantage	Disadvantage
Moist heat method				
Boiling	Starchy food boiled vigorously	Potatoes	Healthy (no extra fat)	Water soluble vitamins lost
Poaching	Food gently cooked in a small amount of liquid	Meat, fish or eggs	Healthy (no extra fat)	Water soluble vitamins lost
Steaming	Food cooked in the steam of boiling water	Vegetables, fish	Healthy (no extra fat) Water soluble vitamins kept	Takes a long time
Dry Heat Method				
Baking	Dry, hot air of oven	Cakes, bread	Good colour and texture, Many products cooked at once	Specific times and temperatures needed
Roasting	Dry, hot air of oven. Food is basted to stop it drying out	Joints of meat, vegetables	Flavour and texture, multiple products at the same time	Takes a long time, food can dry out
Grilling	Small pieces of food cooked by radiant heat	Sausages, bacon	Healthy (fat drips out of meat)	Needs supervision, easy to under/overcook
Frying Method				
Shallow frying	Small items cooked with a little fat	Chicken, vegetables, sausages	Quick method, minimal fat added	Not very healthy, needs constant supervision
Deep Frying	Food submerged in hot oil	Chips, chicken, fish	Golden colour and crunchy texture Quick and versatile	Very unhealthy Needs supervision dangerous
Stir frying	Food kept moving in small	Thin strips of meat,	Quick, limited vitamin loss	Lots of prep needed, constant

Methods of Preservation:

1. Freezing: Freeze foods to slow growth/make organisms dormant. e.g. meat
2. Chilling: Keeping food in the fridge or a chiller cabinet slows down growth of microorganisms. e.g. meat
3. Jam Making provides a sugary medium which inhibits growth of bacteria and mould e.g. strawberries
4. Pickling: alters the pH levels inhibiting growth of bacteria and moulds e.g. onions
5. Salting: the salt draws moisture from the food which therefore prevents/inhibits growth of bacteria and moulds e.g. fish
6. Canning: food contents are processed and sealed in an airtight container. e.g. fruit


Nutrient Content Is Often Altered During Cooking

Cooking food improves digestion and increases absorption of many nutrients. For example, protein in cooked eggs is 180% more digestible than in raw eggs. However, several key nutrients are reduced with some cooking methods.

temperature:

- Poaching: Less than 82°C.
- Simmering: 85–93°C.
- Boiling: 100°C.

Boiling



-100oC

- Loss of vitamins
- Softens vegetables
- Gelatinisation happens making food like pasta softer and easier for the body to use.

Foods: vegetables, fish, pasta, rice

POACHING



- Enhance nutrients
- Add flavours
- Reuse nutrient stock

Foods: eggs, fish, white meat chicken and fruit

STEAMING



- No direct heat
- Retains nutrients
- Adds flavour

Foods: vegetables, fish, meat, rice, Chinese food

When the liquid from boiling is used in things like gravy, **100% of the minerals and 70–90% of B vitamins are retained.**

Steaming is one of the **best cooking methods** for **preserving nutrients, including water-soluble vitamins.**

Effect on nutrition

- Up to **50% of Vit C** is damaged when **green vegetables** are boiled.
- Vitamins **B1, B2 and B3** are damaged by heat and dissolve in the water.
- Some **calcium and sodium** is also lost as it dissolves in boiled water.

Starch (carbs) is gelatinised when cooked in liquid making it easier for the body to use.

- **Boiling fish** was shown to preserve omega-3 fatty acid content significantly more than **frying or microwaving.**

Effect on nutrition

- Vitamins **B1, B2 and B3** are damaged by heat and dissolve in the water.

Effect on nutrition

- Best method for conserving Vit C, as only 15% is lost as the food is not in direct contact with the water.



BOTTOM LINE: While water-based cooking methods cause the **greatest losses** of water-soluble vitamins, they have **very little effect on omega-3 fats (essential fatty acids).**

Cooking Methods

Roasting



- Dry heat
- Cooking solid foods
- Food is often coated with oil and fat

Foods: vegetables, fish, potatoes, joints of meat

Baking



- Dry heat
- Not cooked in oil or covered with liquid

Foods: cakes, muffins and bread

Nutrient Content Is Often Altered During Cooking

GRILLING



- Minimal oil
- Seal in flavour
- Reduce fat content

Foods: fish, burgers, chicken, vegetables, seafood, halloumi, tofu, fruit

STIR-FRYING



- Minimal oil
- Nutrients intact
- Great texture

Foods: vegetables, chicken, fish, sea food

Effect on nutrition

- High heat destroys most of Vit C.
- **Long cooking times** at high temperatures, **B vitamins in roasted meat may decline by as much as 40%.**

BOTTOM LINE:

Roasting or baking does not have a significant effect on most vitamins and minerals, with the exception of B vitamins.

Effect on nutrition

- Heat can over cook protein making it difficult for the body to use.
- Damage caused to vitamin B and C.

Effect on nutrition

- Up to 40% of Vitamin B can be damaged. Maintains other vitamin and minerals in grilling.
- High heat can easily over cook protein.

BOTTOM LINE:

Grilling and broiling provide **great flavour** but also **reduce B vitamins.** *Grilling generates potentially cancer-causing substances!*

Effect on nutrition

- The fat used in cooking increases the amount of Vit A can absorb from some vegetables.
- Damage to Vitamin C and B is minimal due to short exposure to the heat.

BOTTOM LINE:

Sautéing and stir-frying improve the **absorption of fat-soluble vitamins**, but **they decrease the amount of vit C in vegetables.**

Tips to Maximize Nutrient Retention During Cooking

1. Use as little water as possible for poaching or boiling.
2. Consume the liquid left in the pan after cooking vegetables.
3. Add back juices from meat that drip into the pan.
4. Don't peel vegetables until after cooking them. Better yet, don't peel at all to maximize fibre and nutrient density.
5. Cook vegetables in smaller amounts of water to reduce
6. Try to finish cooked vegetables within a day or two, as vitamin C content may continue to decline when the cooked food is exposed to air.
7. Cut food after rather than before cooking, if possible. When food is cooked whole, less of it is exposed to heat and water.
8. Cook vegetables for only a few minutes whenever possible.
9. When cooking meat, poultry and fish, use the shortest cooking time needed for safe consumption.
10. Don't use baking soda when cooking vegetables. Although it helps maintain colour, vitamin C will be

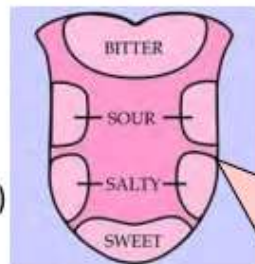
You need to be able to use sensory descriptors to correctly describe the sensory qualities (how food looks, tastes, feels and smells) for a range of foods and combinations.

Sensory Testing

Humans taste with their tongue and nose.

Tongues have thousands of taste buds that detect 5 things

- Salt
- Sweet
- Sour
- Bitter
- Umami (savoury)



We use our taste buds together with olfactory receptors in the nose (which detect smells) to identify the flavour of foods.

People use a combination of these senses to decide whether food is appetising.



Sight	Smell	Taste	Touch
Food must look appealing; colourful, fresh, attractively presented.	Smell helps us to taste food. How it is cooked and flavoured will affect the aroma that it gives off.	Must be enjoyable. Cooking method, freshness of ingredients, herbs and seasoning all affect overall taste	Texture can make a big difference. Crunchy not soggy veg, firm not soggy pasta, crunchy not soft biscuits.

Sensory Testing needs to be fair and unbiased. Your test should allow you to find out other people's opinions of your food so you can improve it.

1. Use enough tasters to gather a range of opinions
2. Consider a blind test - where tasters are not told what they are testing
3. Allow tasters to work alone si they are not influenced by others
4. Give tasters clear instructions of what you want them to do
5. Only buse small samples to avoid filling up your tasters!
6. Allow tasters to drink water in between each sample to wash away previous tastes
7. Tests should be carried out in clean, hygienic and quiet locations

Results can then be analysed to allow you to improve your product.

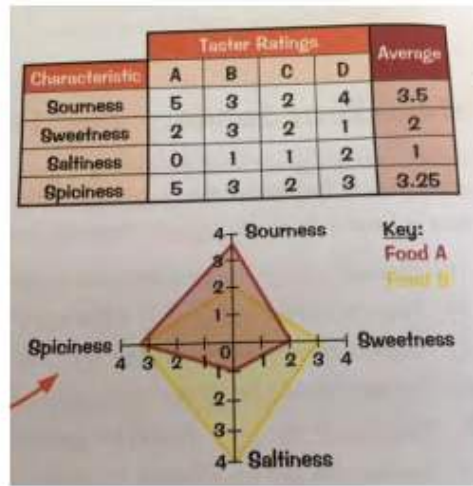
Ranking Test
Foods are tasted and put in order from lowest to highest for a particular characteristic or quality e.g. sweetness. The scores are totaled at the end.

Profiling Test
Tasters rate certain characteristics of food and the average rating of each is worked out to create a profile of the food. This can be displayed visually on a star diagram Star diagrams can be overlapped to compare two different foods.

Paired Preference Test
Two slightly different food products e.g. biscuits (one made with margarine and the other with butter) are tasted and the taster choses their favourite.

Triangle Test
This is a type of discrimination test. Three foods are tested where two are the same and one has a tweaked recipe. The taster has to identify which product differs from the others.

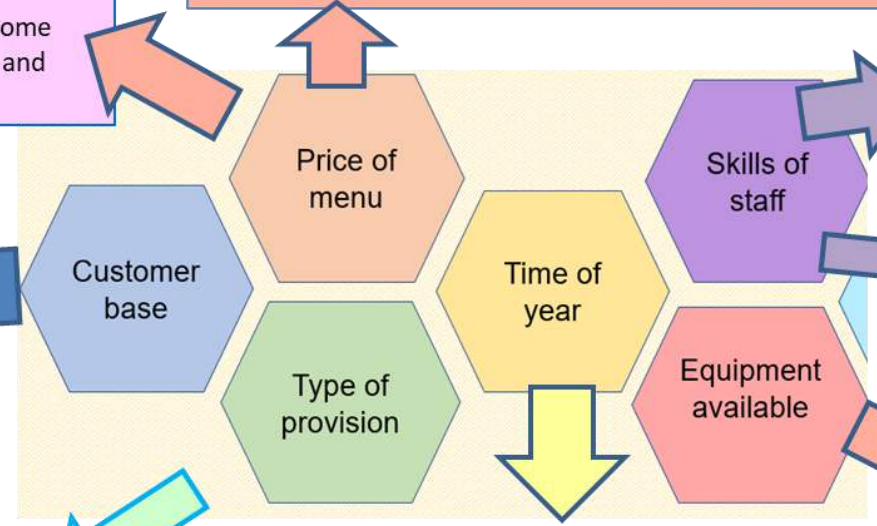
Hedonic Rating Test
People rate a variety of foods using a scale e.g. 1-5, hate/love, or smiley face and sad face..



- The price for a meal in McDonalds would be less than in a 2 star restaurant. You are paying for the food, the service and the surroundings.
- Customers with lower disposable income are looking for good value meals at a reasonable price
- Customers with a higher disposable income may be less concerned about the price and want to try more expensive dishes.

- **Table D’Hote menu**- Fixed price for 2 or 3 courses with limited choices
 - **A la carte menu**- Dishes are individually priced and cooked to order
 - **Childrens menu**- Familiar foods in child size portions lower price
 - **Function menu**- Fixed price menu for parties and groups
- All costs must be taken into account when planning to make a profit including ingredient costs, portion sizes, staffing, heating and lighting, laundry . The establishment needs to make a profit

- Eat out for different reasons**
- Special occasions
 - Business
 - Family meal
 - Intimate meal
 - Meals on holiday
 - Regular
 - Tourists
 - Meal while travelling
- All of these have different needs for food and service dependent on who the customer is and their needs.



Eg pub food, needs a competent cook to prepare food and bar or waiting staff to serve the plates of food

A 2 star restaurant needs a team of skilled chefs to prepare food from scratch and skilled waiting staff to do silver service

- **The style of service**, i.e. Plate service, counter service, table service, silver service, gueridon service.
- **Affects the level of service** that the staff provide and the skills needed by the kitchen and front of house staff
- **What type of food is going to be served**, ie café, fine dining, fast food, family restaurant
- **Venue and environment** ie plastic tables and chairs would be ok in a fast food establishment but customers for fine dining would expect tables and tablecloths, napkins, cutlery condiments.

Food in season is readily available and peak of quality and taste, lower prices, less environmental impact in transport and storage

- E.g. strawberries are in season May- September
- E.g. spring lamb February- June
- New potatoes April-July
- Bramley apples August-December
- Runner beans July – September

Foods not in season have to be imported or frozen, lower quality and taste different. Customers prefer hot food in cold weather, cold food in **hot weather**.

Seasonal events: Valentines day, Easter, Christmas?

[Caterer link](#)

[BBC link](#)

Some items on a menu may need specialist equipment

- Pizza ovens
- Deep fat fish fryers
- Wok burners
- Tandoor ovens

You can't offer food on a menu if you don't have a way of cooking it
If you sell a lot of a dish, you may need to buy something to speed up preparation e.g. electric pasta maker

Hospitality and catering organisations need to be aware of environmental issues when running their businesses.

Dishes

- Preparation and cooking methods
- Ingredients used

Environmental issues

- Conserving energy and water when preparing food
- 3 Rs Reduce, Reuse, Recycle
- Food sustainability and provenance

Using ingredients

- Have the ingredients travelled from far away by environmentally damaging transport?
- Have the ingredients been processed and purified using a lot of energy carbon footprint
- Ingredients locally produced – saving food miles and environmental damage
- Organic ingredients not using excess fertilizer, pesticide or artificial hormones for animals
- Animal welfare e.g. free range or barn eggs, free range meats, organic meats
- Fruits and vegetables and meat produced locally or sustainably
- Ingredients such as cocoa, coffee, syrup produced by fair trade farmers.

Food miles/ Carbon footprint

The distance the food or ingredients travel from production/growing to where it is consumed or sold. Transporting food long distances is harmful to the environment CO₂. Some foods can't be grown in this country due to climate. Click on the foot to watch a video. Click [here](#) to find out your carbon foot print for food items.



Preparation and cooking methods

- First in first out with ingredients in the fridge
- Do not trim and peel too much off the food- wastes food
- Conserve energy, put more than one thing in the oven, put lids on saucepans, do not put hot food in the fridge, turn off equipment when not using
- Conserve water, use minimum water when boiling (conserves nutrients too) use a bowl or plug when washing up , turn off taps
- Save peelings, bones, carcass to make stock, soup or sauce
- Use leftover bread to make breadcrumbs
- Use leftover fruit to make sauce, coulis.

Establishments can Reduce, Reuse and Recycle by:

- Only buy what is needed for preparation,
- Storage- check temperatures, use air tight containers label food with dates, use first in first out for ingredients
- Preparation- do not over trim, use carcasses and trimmings to make soups, stocks and sauces
- Portion sizes- do not offer excessive portion sizes people will leave lots of food, wastes energy in preparing food that is not going to be eaten
- Write menus that consider using offcuts such as chicken trimmings used to make a pie
- Turn dry fruit and veg into powders and seasonings
- Turn excess fruit and veg into chutneys, sauces, jams, pickles
- Freeze leftover food until it is used as ingredient- label
- ❖ Keep food in reusable containers
- ❖ Serve water in glass bottles or carafes
- ❖ Use refillable containers for condiments, salt and pepper, sauces etc instead of single serve
- ❖ Reusable table linens and serviettes that need washing instead of disposable ones
- ❖ Use food not served to make new meals e.g. colcannon with left over potato and green veg, stir fries with small pieces of veg, trifle with left over cake, meringue with left over egg white,
- ❖ soup with veg and meat leftovers, Bread and butter pudding or croutons with bread.
- Recycle sturdy containers for food storage
- Send food waste to be used for compost or animal feed instead of throwing it away
- Recycle used cooking oil. Some companies collect it for free and then turn it into bio diesel

Seasonal Foods



What is seasonal food?

Food grows at different times of year in England. The time that food is ripe for eating is known as its season. Food grows in different countries at different times, so if food is not in season in England, it can be transported from another country.

Why is eating seasonal food whenever you can a good idea?

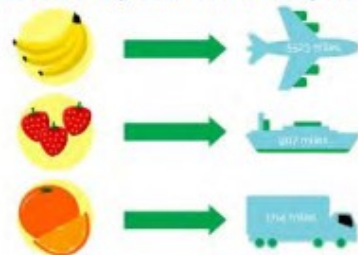
- Seasonal foods are fresher.
- Seasonal foods taste better, as they are full of flavour.
- Seasonal foods have less environmental impact because carbon footprints are reduced.
- Local foods supports the local community.

What are Food Miles?

The distance food has travelled. Less food miles are better for the environment.

How to reduce them:

Eat seasonal, local food where possible



What is a Carbon Footprint?

The amount of energy you use during your lifetime.

How to reduce it:

- Don't fill the kettle (only boil what you need)
- Reduce food waste
- Eat seasonal, local food where possible
- Reuse/Recycle food packaging

To generate electricity, power stations need to burn fossil fuels. This causes gases such as carbon dioxide to be released into the atmosphere.



Using recycled materials to manufacture new products uses less energy, which means less pollution from greenhouse gases and less global warming.

Food Waste

What is food waste?

Food waste is food that is discarded, lost or uneaten.

What is the difference between best before, use by and sell by date?

- Best Before date: It means the product will taste best up until that date. It is still edible and okay to eat a little past the listed date, though you may notice a slight change in texture, flavour, or colour.
- Use by date: The date that food should be used by. After this it may be unsafe.
- Sell by date: a date marked on a perishable product indicating the recommended time by which it should be sold.



Tips for reducing food waste





Sustainability of food

Food production is one of the greatest causes of environmental damage

We need to produce more food with less environmental impact

- Meat production increases air and water pollution
- Crops used for animal feed reduces bio-diversity
- Crop production uses lots of pesticides which harm insects
- Deforestation for crop growth damages the environment

Challenges include

- Increased demand,
- Stability in supplies,
- Use of antibiotics in meat farming

Solutions include

- Buying organic food
- Buying local food
- Eating less meat
- Growing your own
- Buying sustainable fish (MSC)
- Buying Fairtrade products

Food security

- Having enough food
- Having the resources to get food
- Knowing how to use food for a healthy diet
- Having enough water and sanitation

Causes

- Poverty
- Trade
- Conflict
- Disasters
- Population
- Health

Conserving an ecological balance by avoiding depletion of natural resources is known as **sustainable**.

Reduce means to cut down on the amount of waste being thrown out.

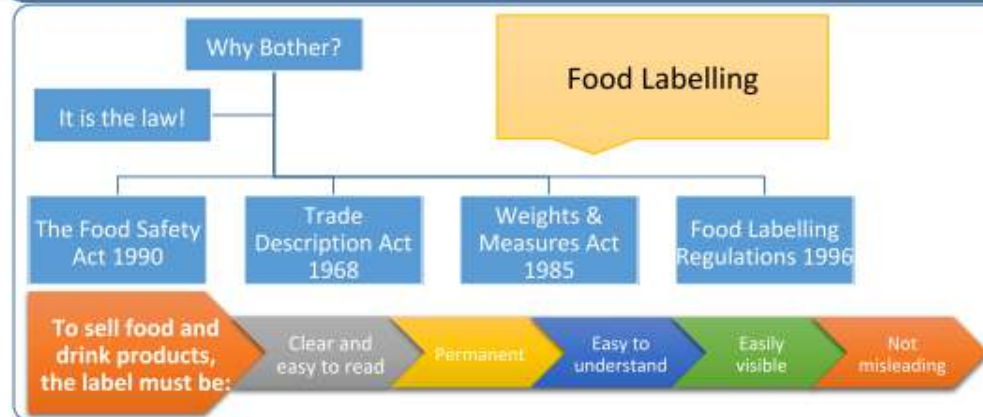
Conservation means to preserve (or make them last) for the future.

Something that is used over and over again, is called **reuse**.

To re-use an item and create something else with it, is known as **recycle**.

Something that is able to rot naturally is called **bio-degradable**.

Energy provides the fuel to cook on or the power we use both electricity and gas.



Food labelling - what you must show

On the front of the product:	Anywhere else (side/back or front)
The name of the food A 'best before' or 'use by' date Any necessary warnings Quantity information	A list of ingredients The name and address of the manufacturer The batch number Any special storage conditions Instructions for use or cooking, Barcode Place of origin



- Packaging

Properties of Packaging	Strong	Keeps food hot	Portion control	Hygienic	Light weight
Will not leak	Does not react with food	Can be written on	Provides protection	Environmentally friendly	Keeps food fresh

Example	Use	Reasons
Cardboard boxes	Pizzas	Easy to print Soak up grease Protect pizza when carrying Keep pizza hot
Polystyrene boxes	Burgers, fish and chips	Strong Light to carry Do not react with food Keep food warm (insulator)
Clear plastic boxes	Sandwiches	Easy to print Light to carry Keep fresh Hygienic
Foil trays with cardboard lids	Indian/Chinese TA	Keep hot Easy to write on Stack easily lightweight
Plastic containers with lids	Indian/Chinese TA	Keep hot Seals mean no leaks Reuse Do not react with food



Takeaway Packaging

Types of packaging

Why Package Food?

- To protect the contents
- To hold the contents
- To keep food fresh
- To reduce food waste
- To make food easier to handle, transport and serve
- To improve hygiene
- To make it look more attractive
- To give information on contents, storage and use

Reducing Food Packaging Waste

- Reduce**
 - Avoid packaged products
 - Take re-usable bags with you when shopping
- Reuse**
 - Buy refill packs
 - Glass milk bottles are returnable
 - Use jars or tubs for storage at home
- Recycle**
 - Paper, card, metal and some plastics
 - Collected by the council, or you could take them to a recycling bank

Sustainable packaging should

- Be sourced manufactured, transported and recycled using renewable energy.
- Be low toxic in it's manufacture, use and disposal
- Be beneficial, safe and healthy for throughout it's lifecycle
- Maximise the use of renewable or recycled materials.
- Be designed to optimise materials & energy
- Use local materials and resources where possible
- Be able to meet market criteria for performance and cost.

Packaging	Advantages	Disadvantages
Paper and Card	Easily printed Can be recycled	Strong when dry Lightweight Crushes easily Weak when wet Recycled paper and card cannot be used
Glass	Easily printed Can be recycled Can be reused	Strong Can carry liquids Quality Brittle (breaks easily) Expensive
MAP (Modified Atmosphere Packaging)	Gives food a stronger atmosphere (fresh meat, fresh fish and salads)	Once opened food deteriorates quickly
Metal	Recyclable Easily printed	Strong Rigid Must be coated or it will react with food Cannot microwave Uses energy to produce them
Plastic or Polystyrene	Strong Flexible	Easily printed Does not react with food Litter Limited resource Can be hard to recycle Chemicals

Changes to make dishes healthier can affect **OTHER** aspects of the finished dishes in several ways....

Organoleptic means the qualities of food that people experience with their senses. There are 5 senses: sight, smell, taste and sound. To enable people to enjoy their food, it is important that the menu planning, preparation, cooking serving food is carried out well so that food is **appetising**.

SIGHT: *Appearance and presentation of the meal*

- Adding vegetables to a dish to increase fibre, vitamins and minerals may also affect the **colour** of the dish.
- Adding greens such as green peppers or green beans will **create a fresher**, more vibrant look.
- Adding tomatoes/red peppers to a dish will make it look brighter. Remember – **contrast in colours** within a dish is good, makes dishes look more appealing and delicious!
- **Changing carbs to wholegrain or skin-on versions** may also change the colour of the dish, however this time may increase the presence of brown in the dish, which is considered a 'dead' or dull colour, and will need brightening up in other ways...
- Type of **servicing dishes**.
- **Garnishing**
- Think cut, shape and form of food.
- Make sure plates and dishes are clean
- before serving food, to remove drips and splashes.



TOUCH: Texture *(how food feels in the mouth)*

- **Use fresh food-** stale food lose texture e.g. fruit, vegetables and fish.
- **Prepare food well to remove edible parts** e.g. shell, bones, stalk, tough skin.
- **Cook food well to avoid** unexpected textures e.g. lumps in a sauce, under cooked egg white, under cooked cake.
- **Cook food at correct temperature** and for correct time to allow textures to develop e.g. when melting chocolate, baking cake or bread, frying chicken.
- Reducing fat content in recipe may alter the texture, making it drier or more brittle.
- Adding vegetables or fruits to dishes can bring crunchiness, softness, chewiness.
- Changing the cooking method will also alter the texture – frying or roasting food in fat creates crispy crunchy textures, whereas replacing frying/roasting with the healthier methods of steaming, boiling, stewing etc will create soft textures. Grilling and barbecuing will also create chewy/crispy textures.



How menu meets customer needs- ORGANOLEPTIC

TASTE

- There are 5 basic flavours: salty, sweet, bitter, sour and umami (savoury)
- Use fresh food- stale food loses its flavour.
- Cook food carefully to avoid damaging flavours.
- Reducing fat content in recipe may alter the taste – it can reduce creaminess aka ‘mouth feel’.
- Reducing the fat content of baked goods can also alter the taste – making them taste less rich.
- Adding vegetables to dishes can alter the taste in many ways depending on what fruit/vegetables is added – e.g. red peppers will bring sweetness, adding kale will bring an earthy taste, adding broccoli will add a fresh taste etc...
- Changing carbs to wholegrain or skin-on versions will affect the taste, making the dish have a more ‘nutty’ flavour
- Adapting the cooking method may also change the taste of a dish:
- Steaming or poaching will preserve the flavours of the original food whereas barbecuing or grilling food will also impart charred flavours.
- Sautéing vegetables in butter or oil bring out the flavour.
- Making stock from meat, poultry or fish bones plus vegetables, herbs and spices.
- Roasting root vegetables intensifies their flavour by evaporating water and caramelising the natural sugars they contain.
- Using natural flavours e.g. citrus fruit zest, fresh herbs and spices.
- Avoid using too much flavouring
- Take care with delicate foods like fresh- less is more.

Top tip: always taste test before serving- REMEMER FOOD HYGIENE!

Umami



Sour



Sweet



Salty



Bitter



Five Basic tastes



SOUND

- The sound of food can make it more appealing.
- Certain foods you expect to sound in a particular way e.g. crisp to crunch, biscuits to snap and food being fried to make a sizzling sound.
- To preserve these sounds food needs to be cooked and stored correctly to maintain its texture.



SMELL - Aroma

- Use fresh ingredients- stale ones lose ability to produce aromas.
- Using natural foods that produce a strong aroma e.g. fresh/ dried herbs and spices, garlic orange and lemon zest and cooking methods that develop aromas e.g. grilling, roasting, baking and frying.
- Plan and select combination of foods to produce a mixture of aromas, but avoid using too many as the overall effect will be spoiled.

How menu meets customer needs- Cost

For this part you need to explain how you will keep the costs of the dishes reasonably low . Your reasons could be....

- Buy **food in season** so it is not imported and expensive
- Buy **food locally** so that you don't have to travel too far to buy it and reduces carbon footprint e.g. support local business.
- **Minimise the waste** produced in both food and resources.
- **Control the portion** size so that you do not waste food that people are not going to eat and everyone gets the same size portion.
- **Not buying ready prepared** ingredients because it is cheaper to prepare them from scratch.
- **Buying cheaper** cuts of meat, this can effect the quality and fat content.
- Buy **non branded** food- supermarket own brands are cheaper.
- **Freeze left** over foods or use in other dishes.
- Store the ingredients at the **correct temperature** so they don't go off.
- **Buying organic, free range, fair trade** foods will cost more but is better for the environment and improved taste e.g. free range eggs, chicken, chocolate, bananas.

ASDA Butcher's Selection Beef Mince (Typically Less Than 20% Fat)
1kg Price £4.00



ASDA Butcher's Selection Lean Beef Mince (Typically Less Than 5% Fat)
1kg Price £6.19



ASDA Extra Special Aberdeen Angus Mince
500g Price £4.00



The **quality of the product** can affect it's price and therefore can affect which people choose to purchase it. To the left are three minced beef packets from ASDA. The cheapest is a 20% fat mince, the next a 5% fat mince and the most expensive is made from an Aberdeen angus cow – one of the most luxurious beef products.



Portion control

Portion control is extremely important. Customers need to feel they are getting 'value for money' and having the same size portion as everyone else.

It helps the caterer when **planning** (how many portions will these ingredients make?) **calculating selling price** (how much should I charge to cover costs and make a profit?) and **avoids waste**.

Using **standard recipes** can help a caterer by determining how many ingredients will make 10, 20, 30 or more



Production Plan – 2 dishes dovetailed together

Mise en pace (preparation)

- Wash hand, tie up hair/ hair net, remove all jewellery
- Clean apron on
- Collect ingredients from the fridge, freezer, store cupboard.
- Weigh and measure
- Wash vegetables
- Peel and chop
- THINK everything before you **combine ingredients.**



Special points

- Coloured chopping board – use correct colour
- High risk food in fridge until ready e.g. chicken
- Use bridge and claw technique to prevent injury.
- Wash hands to prevent cross-contamination.
- Dough should bounce back when pressed, if not, continue kneading.
- Make sure knives are cleaned separately to prevent cuts.
- Use hot washing up liquid to kill off bacteria such as E. Coli. Temperature of water needs to be
- Use oven gloves to prevent burns.
- Dough needs to double in size, if not prove longer
- Ensure plate is clean to prevent food poisoning.
- Ensure garnishes are free from soil to prevent contamination from Clostridium Botulinum. Are they cut evenly?
- Wash all vegetable to remove soil and prevent E.coli
- Ensure table top is clean before rolling to prevent cross contamination.
- Temperature of cooked food 75 c for at least 2 minutes using a food probe (kills bacteria)
- **Correct storage-** fridge, freezer when and why
- Food waste- scrap all mixture off the bowl to prevent this.

Contingences:

- Include spare ingredients encase it goes wrong, a range of serving dishes to choose from.
- Explain what you would do if its not cooked properly i.e. cook it for 5 minutes longer and then test

Plating and severing (last box on plan)

- Allow at least ten minutes at the end.
- Explain what you will serve it on.

Example of Production Plan

Ingredients for dish 1

Starter: Carrot soup with crotons

- 450g carrots peeling and chopped, etc,

Ingredients for dish 2

Main: Sheppard's pie

- 250g white potatoes
- Etc.



Equipment

- Chopping board, peeler, Saucepan, Peeler etc.
- You need to list everything you will use. Even better if you can colour code.

Time	Method	Special points & contingences
8.30	Mise en place. Set up table. Collect serving dishes. Peel and chop potatoes. Prepare garnishes and decorations (whip cream, fan strawberries). Chop parsley. Peel and chop onion, dice bacon, chop mushrooms. Tidy table for starter.	Refrigerate perishables (chicken and cream). Potatoes in water to prevent discolouration. Light oven Gas 6 or 200C.
9.00	Gateaux- make sponge using whisking method. (Whisk eggs and sugar till thick, fold in flour). Divide between 2 tins.	Fold in gently. Bake- Gas 6 – 20 mins.
9.20	Chicken chasseur, fry chicken to seal. Remove and place on plate. Fry bacon and onion, add flour, tomatoes, stock, puree etc. Re-add chicken pieces and mushrooms. Simmer.	Use tongs to turn chicken. Very low heat for at least 45 mins.
9.40	Check gateaux base- remove from oven if cooked. Turn onto wire rack.	Should feel 'springy' in centre. Use oven gloves.
9.45	Wash up. Put potatoes onto boil, once boiling reduce the heat and simmer. Simmer 20 mins on low heat.	Stir chasseur. Add tsp salt.