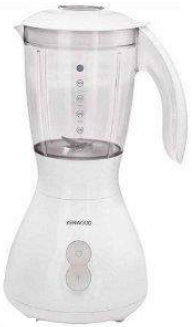
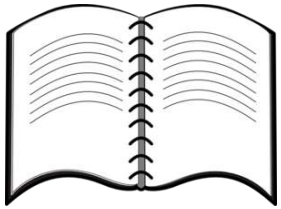
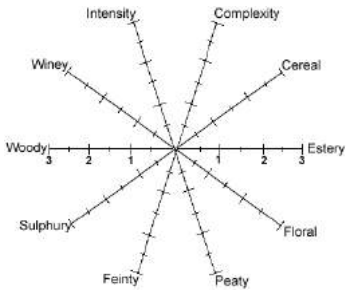
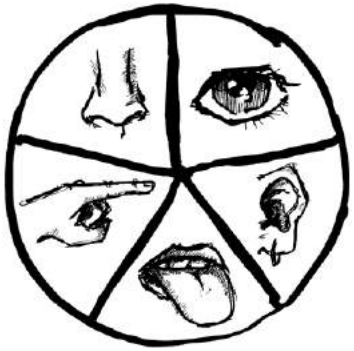


Catering
General Revision







Week 1

The Balance of Good Health

The Balance of Good Health is a pictorial representation of the recommended balance of foods in the diet.

It applies to most people, including vegetarians and from all ethnic origins, except to children under the age of two years.

Eight Guidelines for a Healthy Diet

The Balance of Good Health is based on the Government's Eight Tips for Eating Well:

1. Base your meals on starchy foods
2. Eat lots of fruit and veg
3. Eat more fish
4. Cut down on saturated fat and sugar
5. Try to eat less salt – no more than 6g a day
6. Get active and try to be a healthy weight
7. Drink plenty of water
8. Don't skip breakfast

The Balance of Good Health is based on five food groups which are:

Fruit and vegetables

Bread, other cereals and potatoes

Meat, fish and alternatives

Milk and dairy foods

Foods containing fat

Foods containing sugar

Fruit and Vegetables

•Aim for at least 5 portions a day.

•Fresh, dried, frozen, canned and juiced - they all count

•Main nutrients: vitamin A, vitamin C, folates and fibre

.

Bread, other cereals and potatoes

•Eat plenty of foods rich in starch and fibre.

•Fill-up on bread, potatoes, rice, pasta and yams.

•Main nutrients: carbohydrate (starch), some calcium and iron, vitamin B, and fibre

Meat, fish and alternatives

- Help the body to grow and stay healthy.
- Eat a range of meat, fish eggs, nuts, seeds, tofu, beans, and pulses.
- Main nutrients: iron, protein, B vitamins (B12), zinc, magnesium

Milk and dairy foods

- Help bones and teeth to grow strong and stay healthy.
- Try lower-fat options.
- Main nutrients: calcium, protein, vitamin B12, vitamins A & D

Foods containing fat /sugar

- Don’t eat too many foods that contain a lot of fat.
- Don’t have sugary foods and drinks too often.

Week 2

What are Nutrients?

Nutrients are the building blocks that make up food and have specific and important roles to play in the body. Some nutrients provide energy while others are essential for growth and maintenance of the body.

Nutrient	Role in the body	Food Example
Carbohydrate	The main source of energy for the body	Bread, rice, pasta, potatoes
Protein	Provides the body with growth and repair.	Meat, poultry, beans, eggs, lentils, tofu, fish
Fat	Provides the body with insulation and a small amount protects vital organs. Provides essential fatty acids for the body.	Butter, oil, cheese, cream, nuts, oily fish, crisps

Vitamin	Role in the body	Food examples
A	Helps to keep the eyes healthy and strengthen the immune system.	Dark green leafy vegetables, carrots, liver
B	Helps to release the energy from the food we eat.	Bread, milk, cereals, fish, meat
C	Help with skin healing and healthy skin. Help with the absorption of Iron.	Fresh fruit, broccoli, tomatoes
D	Important for absorbing calcium and help with healthy bone structure	Oily fish, eggs, butter, Sunshine

Vitamins

Help to keep our immune system up and help our body to stay healthy – they important for body maintenance.

Mineral	Role in the body	Food Examples
Calcium	Important for strong teeth and bones. It also helps with blood clotting.	Milk, yoghurt, soya, dark green leafy vegetables
Iron	Needed for red blood cells which help to transport oxygen around the body.	Nuts, whole grains, dark green leafy vegetables, meat, liver

Minerals

Help to keep our immune system up and help our body to stay healthy.

Specific dietary groups

You will need to revise specific dietary groups such as:

- Diabetics
- Coeliacs (require gluten free diet)
- Low fat / Low salt – to reduce the risk of coronary heart disease (CHD high blood pressure / obesity
- Vegetarian - eat only dairy animal products (milk, eggs, cream etc.)
- Vegan – no animal products whatsoever
- Nut Allergy
- Lactose Intolerant (unable to have cow's milk / milk products)
- Calorie controlled
- Specific Religions e.g. Hindus eat no beef, Muslims eat no pork, Jews eat no pork or shellfish

Just Eat More
(fruit & veg)

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Week 3

Standard Components

Standard components are **pre-prepared ingredients** used during the **manufacture of food products.**

They are made at a different time, and often at a different place by another company.

Common examples are:

- Pre-shaped / made pastry (e.g. puff pastry, tart cases)
- Readymade pasta
- Ready mixes of ingredients (e.g. Cheese sauce, pasta sauce, pastry mixes, curry paste)
- Breadcrumbs – for breaded mushrooms / prawns/ chicken goujons
- Pre-prepared fruit & vegetables (for salads – e.g. Prawn coleslaw, pasta prawn salad, quiche fillings, sandwiches, readymade dips)
- Grated Cheese
- Batter mixes (e.g. For butterflied prawns, Yorkshire puddings)
- Readymade sponge flan cases / icings/ cake decorations e.g. Chocolate curls

Using **standard components** helps ensure a **consistent** final product because they are of a standard quality. For example:

- standard weight, size and shape (e.g. Tart case, pizza finger, bread roll)
- Accurate in **ratio** (proportions) of ingredients

Standard components are often used to save time and money. They also help **quality control** by guaranteeing a **consistent** and **reliable quality.** A specialist supplier can often make them cheaply because they can be manufactured in very large numbers on a dedicated production line.

Advantages & Disadvantages of Standard Components

Advantages	Disadvantages
Manufacturers may use standard components:	**There are some disadvantages to using standard components:**
To save time	Can be more expensive
Because they do not have the necessary specific machinery or skilled workers	The manufacturer is relying on another company that could let them down
So that the quality is guaranteed	Time must be allowed for ordering and supply
Because complex production lines take up a lot of space and are expensive to set up.	Components are usually bought in bulk and have to be stored in the right conditions
So that a wider range of products can be produced	

Week 4

Hazards in food preparation

What are Hazards?

- **Hazards** are anything that can cause harm to the consumer. They can occur at any stage in the food production chain from the field to factory to shop to table.

Biological:

- e.g. **salmonella** in raw chicken , seafood or eggs, **Campylobacter** (gastroenteritis) found in seafood, meat, poultry & milk; **Listeria** in soft cheeses and pates, **E-coli** in cooked meats, **Clostridium botulium** found in canned fish, meat & vegetables.

Chemical:

- e.g. cleaning chemicals, agricultural chemical, paint, oil

Physical: e.g.

- Glass from bottles, jars, light fixtures
- Metal from machinery, equipment, packaging, jewellery
- Wood from pallets, boxes
- Insects from plants, open windows
- Personal items e.g. jewellery, hair, fingernails, cigarettes
- Packaging faults e.g. bags not sealed

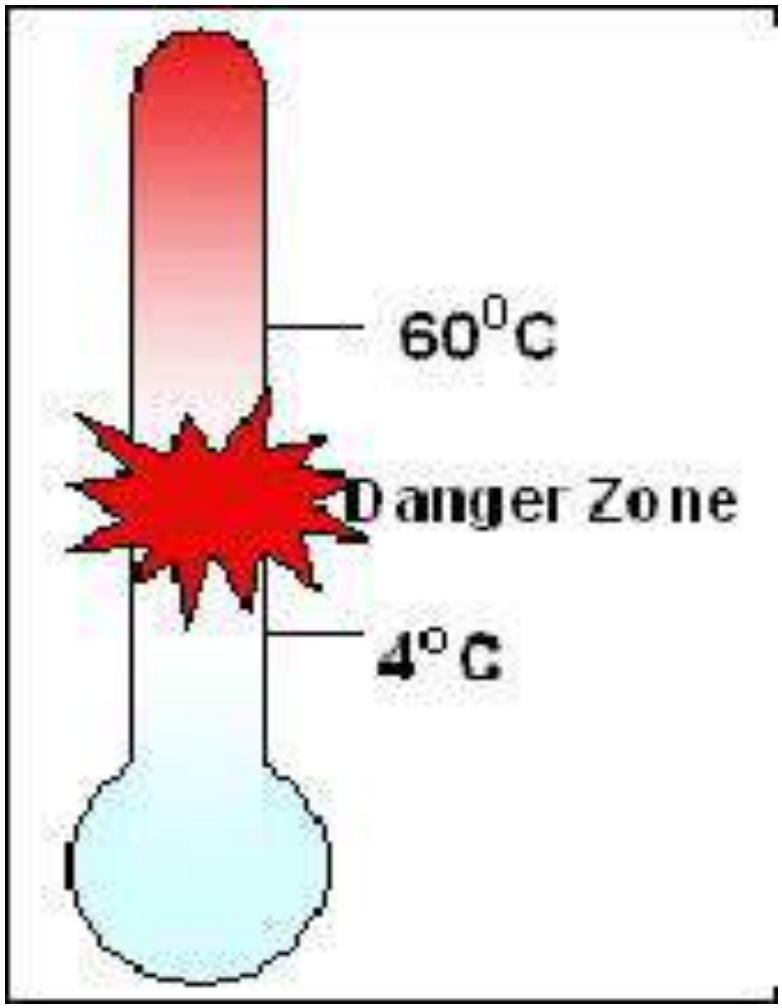
What is 'Food contamination'? Food contamination means:

- That food has micro-organisms/bacteria in it
- Food may cause food poisoning / unsafe food
- Food becomes harmful because of physical/chemical/biological contaminants
- You can also refer to 'high risk foods' and 'cross contamination'.

You will need to explain how food contamination can be prevented . Include checks on:

Staff (clean uniform / healthy / no visible cuts / boils etc**.), sanitising & cleaning equipment / surfaces; checking equipment is safe and in good condition, use of colour coded chopping boards, checking storage temperatures, rotation of stock (FIFO), using reputable suppliers & quality ingredients etc.**

The Danger Zone!



- Important temperature zones:
- 0 – 4°C – fridge temp.
- 5°C – 63°C – Danger Zone
- 72°C – Temp at which food must reach for at least 2 minutes to kill bacteria.
- -18°C Freezer temp (+ or – 3°C)

Electrical Kitchen Equipment

Health and safety rules to be followed by food workers using electrical equipment.

- Keep away from water
- Follow manufacturers instructions
- Check condition of flexes
- Check wiring on plug
- Do not use with wet hands
- Do not leave flexes across water supplies
- Check equipment has passed safety checks e.g. PAT tests
- Accept equipment specific responses, e.g. blender, mixers
- Hold securely / securely based during use.
- Keep fingers / clothing/ hair away from any moving parts
- Have training in correct use of equipment
- Equipment should be clean before/after use
- Personal safety precautions/ Wear clean, protective clothing
- Concentration during use/ do not leave unsupervised.

Hand Blender

Electric Whisk

Tabletop Food Mixer

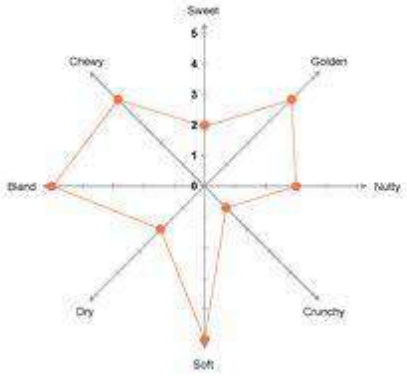
Week 5

Sensory Testing

Food manufacturers use sensory testing when they are creating or improving food products. Testing is always carried out in **controlled conditions**. This refers to having **all conditions the same**, so it is unbiased and **you get the results of a fair test.**

Controlled Conditions:

- Same size samples
- Identical dishes
- Identical quantities of food
- Coded samples
- Same light conditions
- Noise free area
- Smell free area
- Individual booths for privacy
- Instructions given to taste tester
- Similar charts used to record outcomes



4-6 samples MAXIMUM

Water / lime or lemon squash to drink between samples

Sensory Testing – Types of tests

Rating Test

Used to assess a specific flavour or texture but require trained testers and the use of a particular scale. Products are given a rating – similar to when you visit the cinema

Example: Tomato soup – seven point scale

1. Dislike Extremely
2. Dislike a lot
3. Dislike a little
4. Neither like of dislike
5. Like a little
6. Like a lot
7. Like extremely

Rating tests can also be used for one particular attribute e.g. saltiness, sourness

Ranking Test

•These test the degree of intensity of a specific sensory property, such as sweetness.

•Food samples are ranked in order to show which one the taste tester preferred

•Results recorded in a table

• Testers are asked to rank the products in order (1st, 2nd, 3rd, 4th)

Example:

A set of coded samples e.g crisp flavours is presented to the tester and they have to rank the samples in order of either a specific attribute e.g saltiness or which products they like the most

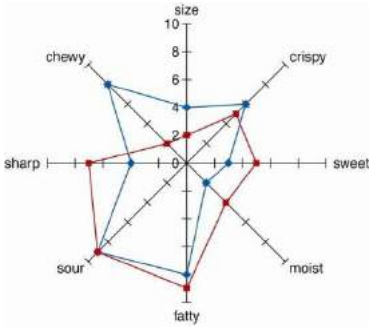
Profiling Test

•This is also called sensory profiling. This is used to obtain detailed, descriptive evaluation of different food items.

•A sensory profile of each product is developed which may look at the texture, flavour and aroma, appearance and sound.

•Each tester rates a characteristic from 1-5 (1 being lowest and 5 being the highest)

•Results from each tester are averaged and this score it put onto the star to give a visual profile.



Difference Test

•Tests used to find out if there is a clear difference between products

•They could be used to test:

low fat Vs original full fat
traditional brand Vs an economy supermarket version
Coke Vs pepsi

•Two test versions: Paired comparison, Triangle test

Paired Comparison tests – coded samples are given to a tester to compare a similar characteristic e.g sweetness.

Triangle test – Three samples are given to the tester two of which are the same and the tester has to identify the odd one out. This is useful if a small change has been made to the product. E.g reducing the sugar content.

Week 6

Food Labelling

Compulsory:

By law, all food manufacturers (people who make food products) must have the following on their food labels:

- Name of product
- Description of product
- Manufacturer's name & address
- Weight or volume
- Storage instructions
- Cooking or preparation instructions (e.g. heating up ready meals)
- List of ingredients (heaviest first)
- 'Best before' / 'Use by' date

Optional Food Labelling:

Food Manufacturers will often add one or more from the list below, although these are not required by law:

- Illustration (picture / photo)
- Bar code or smart code – they identify the price and are used by shops and manufacturers for stock control.
- Special claim (e.g. 'low fat') – **if a special claim is given it must have nutritional information provided – compulsory!**
- Symbol for average quantity (e)
- Nutritional information of the product. **If the special claim is about a nutrient, this information MUST be included.**
- Customer guarantee
- Price – although lots don't as they have smart codes.
- Allergy advice
- Recycling logos and anti-litter symbols to encourage consumers to recycle.
- Serving suggestions e.g. serve with custard or cream.

NUTRITION			GDA	
Typical values	per 100g	per pack	adult	per pack
Energy kJ	450	1345		
Energy kcal	105	315	2000	16%
Protein	7.9g	23.7g	45g	53%
Carbohydrate	8.8g	26.4g	230g	11%
of which sugars	1.2g	3.6g	90g	4%
Fat	4.2g	12.6g	70g	18%
of which saturates	2.7g	8.1g	20g	41%
Fibre.	1.2g	3.6g	24g	15%
Sodium	0.24g	0.72g	2.4g	30%
Equivalent as salt	0.60g	1.80g	6g	30%
GDA = Guideline daily amount				

The purpose of packaging

Protection - Packaging protects foods from:

- Physical damage during transportation and storage
- The effects of temperature changes, insect or rodent attacks, mould growth etc. Packaging guarantees food safety and hygiene.
- Preventing Tampering – Packaging helps stop the tampering of goods. It's almost impossible to make packaging tamperproof, but it can be designed so that it's obvious if the package has been opened.

Portability - Packaging contains the contents:

- so that they can be transported, stored and displayed easily.
- Packaging can make awkwardly shaped products easy to handle.

Preserving

- Packaging can be part of the preservation process such as tin cans and modified atmosphere packaging (MAP)

Product recognition – Identify labels and advertising

- Packaging describes and identifies the contents.
- Good packaging design gives a brand image and links other products in the range.
- Orange, yellow and blue are popular packaging colours.

Sustainability & Environmental Issues

Packaging Issues:

- Excess use leads to poor environmental control / deforestation /world's natural resources (e.g. oils) running out
- Use of recyclable packaging/biodegradable/concern over length of time to decompose
- Ethical/ environmental /moral concerns/issues.
- no use of packaging if preferable but need to package certain foods and for cooking
- Land fill
- Storage problems for foods and left over packaging
- Queries over information provided on packages e.g. Nutritional labelling
- Chemicals used in some food packaging
- Impact/harm of wildlife
- New technologies – vacuum packaging nanotechnology/ coatings, MAP, aseptic (e.g. TetraPak) – benefits and advantages.

Fair Trade:

Fair trade foods ensure that the workers or Farmers who produce the foods get a fair price for their produce and have a reasonable standard of living. Fair trade is about guaranteed fair prices for the farmers, farmer workers and their families, better working conditions and local sustainability. Companies who buy the farmers' products must pay the market price. Fair trade foods include coffee, tea, chocolate, icing sugar, caster sugar and bananas.

Seasonality:

By purchasing local foods in-season, you eliminate the environmental damage caused by shipping foods thousands of miles, your food pound goes directly to the farmer, and your family will be able to enjoy the health benefits of eating fresh, unprocessed fruits and vegetables. Foods that are in season are better in terms of nutritive value and are cheaper. Buying seasonal produce also provides an exciting opportunity to try new foods and to experiment with seasonal recipes. It simply tastes better too!
See http://www.bbcgoodfood.com/content/local/seasonal/table/

Food Miles:

Is the distance food travels from where its produced to where it's sold

Facts and figures

•UK food exports in 1994 - 12 million tonnes. UK food imports in 1994 - 20 million tonnes.

•Each tonne of food travelled an average of 123 km in 1998 (the average figure was 82 km in 1978)

•Food in the UK now travels 50% further than it did 15 years ago.

•Five large retail chains account for 80% of food sold in the UK.

•Transportation of food was responsible for 33% of the increase in road freight over the last 15 years.

•In the UK, road transport is the only source of a greenhouse gas (carbon dioxide) that is still increasing.

What can we do about this?

Buy locally sourced ingredients and eat in season. Try to avoid buying ingredients that have travelled long distances.

Week 7

Properties and functions of ingredients

- **Primary ingredients:**
  Raw foods that have received little or no processing – i.e. fresh fruit or vegetables

- **Secondary ingredients:**
  Foods that have received more complex processing which makes them into composites or products – i.e. a pasta sauce, pastry case.

- **Components :**
  Individual ingredients which make up a product – i.e. flour, fat and water = pastry.

- **Composites:**
  Foods that have had some processing but are still not the final product – i.e. shortcrust pastry that still need to be turned into a pie.

Properties and functions of ingredients

Food properties

- Different foods have different working properties when treated in certain ways or combined with other foods. The table lists the working properties you need to know about.
- **Aerating** makes a mixture lighter. Fats, eggs and sugar are used for aerating.
- **Binding** helps to stick ingredients together. Fats, eggs, cereals and flour are used for binding, eg egg is used to bind together a biscuit mixture.
- **Browning** adds a layer of colour to the mixture. Fats, eggs, cereals, sugar, milk, flour and oil are used for browning, eg when heated, egg glaze or sugar turns brown adding to the appearance of the food.
- **Emulsifying** uses eggs to help mix two liquids that would normally stay separate, such as water and oil.
- **Flavouring** helps to make something taste better, by adding fats, eggs, pulses, fruit, sugar, milk or oil.
- **Moistening** helps to remove the dryness from foods. Fats, eggs, fruit, sugar, milk or oil are used for moistening.
- **Preserving** helps food to last longer, through freezing, canning, jam-making pickling etc. Foodstuffs used in preserving are fats, sugar and oil.
- **Setting** uses eggs to make foods firm.
- **Shortening** is the use of oils and fats such as butter and lard, to reduce the development of gluten in pastry, which makes the pastry dough less stretchy. The fat coats the flour and prevents too much water from being absorbed during the mixing and produces a crumbly, short-textured, melt-in-the-mouth effect.
- **Stabilising** helps food to keep its structure. Eggs and flour are used for stabilising.
- **Sweetening** improves the flavour of certain foods by adding sugar or fruit, eg sugar will help to soften the sharp taste of grapefruit.
- **Thickening** is the use of eggs, pulses, cereals and fruit to thicken liquids such as milk. (Usually heat is applied, as in the making of egg custard).
- **Volumising** is the use of eggs to increase the volume or amount of space occupied by a substance. For example egg whites will trap air when whisked/beaten and will produce a mass of bubbles called a 'foam' - a process used in the making of meringues.

As you can see from the chart, most of these working properties can be found in many different foods:

Properties	Fats	Eggs	Pulses	Cereals	Fruit	Sugar	Milk	Flour	Oil
Aerating	●	●				●			
Binding	●	●		●				●	
Browning	●	●		●		●	●		●
Emulsifying		●							
Flavouring	●	●	●		●	●	●		●
Moistening	●	●			●	●	●		●
Preserving	●					●			●
Setting		●							
Shortening	●								●
Stabilising		●						●	
Sweetening					●	●			
Thickening		●	●	●	●				
Volume		●							

Properties and functions of ingredients

STARCH

These are food products obtained from cereals, root vegetables and fruit. They can be used to thicken liquids. When heated the starch grains bust and absorb the liquid causing gelatinisation.

1. Starch particles do not dissolve in liquid instead they form a suspension
2. Stirring or agitating the liquid keeps the particles suspended.
3. If the suspension is not stirred the particles form to the bottom forming lumps
4. When the liquid reaches 60°C the starch grains begin to absorb the liquid
5. At 80°C the particles break open and release starch making the mixture thick and viscose, this is called gelatinisation.
6. Gelatinisation is complete when the liquid reaches 100°C. The thickened liquid now forms a gel. On cooling the gel solidifies.

The reheating quality of starch can be poor as they often separate leaving a thin liquid behind. (SINERESIS)

Smart Starches

These are starches that have been changed by the manufacturers to reach differently in different situations and are called MODIFIED STARCHES

Pregelatinised – allows them to thicken instantly – instant custard, pot noodles

No sineresis – allows starch product to be reheated easily – used in ready meals with sauces e.g. lasagne

Thickening – in low calorie products where less starch is used or more acid required – salad dressings

Fat replacement – currently under development is a starch that could replace some of the fat in low fat dishes like biscuits and cakes.

Properties and functions of ingredients

Fats and oils

Animal – pigs, cows, sheep

Vegetable – wheat, barley, oats, seeds, olives, beans, some fruit (avocado)

Fish – trout, mackerel, salmon, herring

Types

Fat is solid at room temperature – soft margarine, butter, dripping, block margarine, low fat spread, suet.

Oil is liquid at room temperature – cream, sesame seed oil, fish oils, olive oil, vegetable oil, sunflower oil, rape-seed oil.

Saturated Fats – mainly from animal sources, can increase blood cholesterol that leads to heart disease.

Polyunsaturated – mainly from plant sources

Low fat products

Too much can cause obesity, too much saturated can result in heart disease. Using low fat products can help reduce these risks. Look for low fat or fat reduced on the packaging.

Function of fats:

What it does	Example …..
Adds flavour	Fat in biscuits, cakes, bread. Melted on vegetables, Olive oil drizzled on pasta
Makes food moist	Butter, margarine on bread and scones
Seals	Butter and lard help to preserve pâtés by sealing them
Shortens/changes texture	Shortbread, cakes and pastries have a crumbly texture because the flour particles are coated in fat
Aerates	In cake mixtures, butter and margarine help to trap air when creamed with sugar
Extends the shelf life	The addition of fat to baked products means that they stay moist for longer.

Properties and functions of ingredients

Sugar

Sugar cane and sugar beet are processed to produce different types of sugar -molasses, granulated, caster, dark brown, soft brown, muscavado, icing, demerara, cubes.

Functions of sugar

Cakes, biscuits –

to add sweetness and colour, prevent drying out, give texture and volume.

Jam –

to act as a preservative, help set the fruit.

Bread –

to speed up fermentation of the yeast

Ice cream –

to lower freezing point, add texture and volume

Creamed mixtures (cakes, biscuits) –

to lighten and help fat trap air.

Plain looking foods –

to decorate

Artificial sweeteners

These are lower in calories but are mainly used to sweeten as they often fail to duplicate other functions.

Hydrogenated sweeteners – Sorbitol, Mannitol, Xylitol, Hydrogenated Glucose Syrup.

Non-nutritive/intensive sweeteners – Saccharine, Aspartame, Acesulfame, Thaumarin

Eggs

Mostly from chickens but all bird eggs can be eaten.

Functions of Eggs

Aeration

Whisking stretches the protein and adds air bubbles. The air bubbles form a foam which partially coagulates. Used in sponge cakes, meringues and mousses

Emulsification

When oil and another liquid are forced together they emulsify. The addition of egg yolk (lecithin) stabalises the emulsification. – mayonnaise.

Coagulation

Eggs set and eventually go solid when heated. The egg white sets at 60°C, the yolk at 70°C. Used to set mixture like quiche, custard and lemon curd.

Other uses

Garnish

Chopped or sliced to decorate savoury products.

Glaze

Any part of the egg can be used to brush over a baked product to make it shine, particularly pastry and bread.

Properties and functions of ingredients

Dairy products

Milk

All mammals produce milk but the main ones we drink are cows. Increasing amounts of goats milk are now being drunk by those with an intolerance to cows milk.

Primary processing:

this takes the milk from the animal and treats it to make it safe to drink and use.

Pasteurised- this make the milk safe to use as it destroys and harmful bacteria. Milk is heated to 72°C for 15 seconds then cooled rapidly to 10°C or below before being packaged.

Homogenised –after pasteurisation the milk is forced through tiny holes to mix in the cream.

Sterilized – after pasteurisation and homogenisation the milk is bottled, sealed and heated to 110°C for 30 mins. This alters the taste.

Evaporated – water is evaporated off to make it more concentrated. It is then homogenised and packed into cans before heating to 120°C for 10 mins. The taste is altered and the milk is slightly thicker.

Dried – drying removes the water, this allows it to keep for several months. The milk is sprayed into a hot chamber, the liquid evaporated leaving behind a fine powder.

Skimmed – this has all the cream removed so is low in fat.

Semi-skimmed – this has some of the fat removed

UHT (Ultra Heat Treated) – The milk is heated to 140°C for 1 second before being cooled quickly then packaged. This milk will keep for a longer time.

Channel Island – milk is from Jersey and Guernsey cows and is 5% higher in fat.

Condensed Milk –water is evaporated from the milk then sugar is added to preserve it and make it thicker.

Nutritional Content

Sugar – lactose, Vitamin B, Calcium, Fat, Phosphorus, Protein, Vitamin A.

The amount of fat depends on the type of milk.

Functions of milk

To improve the nutritional value of a product – add protein, fat.

To add flavour.

Secondary Processing

Butter – made by churning the cream.

Function to improve flavour and moisture of a product.

Cream – extracted from the milk. The fat content depends on the type of cream. Double, single, whipping, clotted, crème fraîche, sour, sterilised.

Function to add flavour and richness.

Cheese – This is a solid form of milk 33% each of fat, protein and water. The cheese depends on the kind of milk and bacteria used and the method of production.

Function to add flavour, moisture and texture.

Yogurt – Made by adding a special bacteria to the milk which make it sourer and thickens the milk. Flavour and sugar can then be added.

Function – add flavour and texture but can reduce fat content.

Effects of heating can change the way milk products react – cheese melts and separated into protein and fat so should be heated slowly.

- milk hold air as it boils, this is good when making the frothy topping for coffee – cappuccino.

Week 8

Manufacturing Methods - There are different types of manufacturing system, each one suitable for different scales of production:

One-off production is when a **single product is made to the individual needs of a customer,** for example a designer wedding cake. This is classed as a luxury food item.

Eg: wedding cake

Batch production involves the **making of a set number of identical products** (large or small). Typically batch production is used in a bakery, where a certain number of several different types of bun, loaf, cake etc, will be made every morning.

Eg: bakery making bread

Mass production is used to **make foods on a large scale, either wholly or partially using machines.** The production line involves **individual tasks that will be carried out repetitively.** This is time-efficient and helps to keep the costing of the product low.

Example: beer, crisps, pies

Continuous-flow production is a method of high-volume production, used in foods such as milk and packet pizzas. **Production lines run 24 hours a day**. Where production line machines are controlled by computers this is called **Computer-Aided Manufacture (CAM)**.

Eg: bottled water, beans

Quality control

Safety in the food industry

Safety is vitally important in the food industry, for obvious reasons. As in any other type of production, the most important part of safety-consciousness is identifying and monitoring potential **hazards** (this is called **hazard analysis**) and taking steps to avoid them. There are three main types of hazard in food production:

- A **biological hazard** is where foods become dangerously infected by bacteria. This might lead to food poisoning, such as salmonella.

- A **physical hazard** occurs where foreign bodies, such as nuts and screws from factory machinery, personal jewellery and fingernails, fall into the food.

- A **chemical hazard** is where potentially dangerous fluids or pesticides have found their way into food.

Control Checks

A control check is a check

that you would do throughout

the making of a dish to ensure that it was produced hygienically and safely

How many control checks can you think of?

Put your apron on

Remove pests, pets and rodents

Store food in the freezer -18C

Wash your hands

Visually Checking your product

Clean Equipment

Food on display for no longer than 90 minutes

Check the best before and sell by date

Store food in the fridge 0-5C

Make sure food is Reheated to 72C

Time Checking

Tie your hair back, Remove jewellery and nail varnish

Disinfect surfaces

Temperature Checks using a food probe

Check freshness of foods

Week 9

Quality Control

Ways to check quality:

Visual Check:
Raw ingredients and finished products checked this way by looking carefully at outcome

Micro-biological check:
Samples tested in a laboratory for levels of bacteria

pH check:
May be tested for acidity or alkalinity

Organoleptic check:
Final products tested for flavour, texture and aroma

Weight Check:
Products are weighed and tested at the packaging stage
(usually done by computer CAD)

Chemical Check:
Samples are tested in a lab to make sure they are free from contamination

Temperature check:
Samples are regularly checked by probe to ensure accurate temperatures for manufacture and storage.

Metal check:
Metal detectors are used to ensure the finished product has no metallic contamination

Quality Control in Mass Production

Mass produced products need to be of identical quality to ensure customers will continue to buy them. The manufacturer can follow the following pointers:

1. To ensure **ACCURATE WEIGHT** use electronic scales to weigh the ingredients and the final product to ensure it weighs within the levels of tolerance set.

2. To ensure **ACCURATE SIZE** or **SHAPE** manufacturers use standard moulds, templates and cutting devises

3. The same flavour and texture will be produced every time by making sure the identical **STANDARD FOOD COMPONENTS** and **ACCURATELY MEASURED INGREDIENTS.** Preparation, mixing and cooking times are also **MEASURED ACCURATELY.**

4. The **SAME COLOUR** is produced by using fixed ingredients, cooking times and temperatures. **COLOUR** can also be checked against a standard colour using CAM machines.

5. The **PACKAGING** of the product is also controlled

6. The **NAME** and **CONTACT DETAILS** for the manufacturer should appear on the **PACKAGE** in case the product is **SUBSTANDARD**

Week 10

Key words/Terms

Additives - Substances added to food in small amounts to perform a function such as to preserve, colour or flavour a product.
Aesthetics - The appreciation of good taste or good design. The product appeals to your senses. "It looks appealing, I want to eat it!"
Ambient temperature - Normal room temperature. 20 - 25°C
Antibacterial - Working against or prohibiting the growth of bacteria.
Bacteria - Small microscopic organisms found all about us. They multiply by splitting in two every 20 mins. (Binary fission)
Batch production - Producing a small quantity of identical products. For GCSE assume 50.
Blast chill - To cool food quickly by blasting it with cold air.
Blast freezing - Quickly freezing that makes small ice crystals which do less damage to the food than slow freezing.
Brand - A particular make of product usually with a well known name e.g. Heinz baked beans.
C.A.D. - Computer-aided design e.g. programs used for designing packaging.
C.A.M.- Computer-aided manufacture. e.g. using a computer to help control baking temperatures.
Component - A ready prepared part of something. e.g. a ready made pizza base.
Consumer - A person who buys or uses products and services.
Continuous-flow production - Continuous processing 24/7. Expensive to set up, cheap to run. Fewer people employed; usually computer controlled.
Cook-chill - Food that has been cooked, fast chilled and then stored at low temperatures.
Cook-freeze - Food that has been cooked, fast frozen and then stored below freezing point.
Cross contamination - The transfer of harmful bacteria from one area to another.
Danger zone - The temperature range in which bacteria thrive (4 - 60°c).
Diet - The food and drink that we eat.

Dietary Reference Values DRV's - DRV's show the amount of food energy or other nutrients needed by people of different ages.
Due diligence - In food preparation this means that the company has set up systems to help avoid contamination of food products.
E numbers - The number given to an additive to show that it has been approved by the EU.
Environmental Health Officer EHO - The enforcement officer at local government level who covers public health such as the hygiene of food premises and food safety.
Flow diagram - Step by step chart or plan of a system or production process.
H.A.C.C.P. - Hazard analysis and critical control point.
Hazard - Anything that can cause harm to the consumer.
High risk area - The section in the food preparation area where food is most likely to be contaminated by bacteria.
High risk foods - Those most likely to encourage bacterial growth. e.g. cooked meat, cooked poultry, fish, dairy foods.
Image/Mood board - A display of pictures and drawings to give ideas about a target group or a range of products.
Just in time - Some factories & fast food outlets order stock just in time to manufacture the product. They do not have room to store it days/weeks in advance.
Key words / Design Criteria - Important words that may relate to the design brief.
Logo - The symbol of a company used on products.
Low risk area - Section in the food preparation area where food is less likely to be contaminated by bacteria.
M.A.P. - Modified atmosphere packaging. Removing the air and flushing the packet with a gas.
Marketable product - One that appeals to people and will sell when it reaches the shops; to succeed, all products must be marketable.

Modelling - To experiment with an idea without actually cooking it. You can model the nutritional value of a food product by using FOODPC6.
One-off production - One product is made, usually to order. It is unique. It can be expensive.
Organoleptic Testing - A posh term for sensory analysis. Using your sensory organs to test a product. In simple language, taste testing!
Portion - A portion for one is the amount of food that satisfies the need for one person.
Product specification - The exact details needed to make the product.
Prototype - A sample product to be used for trialling and market research.
Quality assurance - A system that is set up before a product is made and which lays down procedures for making a safe, quality product.
Quality control - The steps in the process of making a product to make sure that it meets the standards; faulty products are removed.
Repetitive-flow production - Assembly line production of a product, often using a conveyor belt. Used for producing large numbers.
Standard Component - A component pre-prepared that can be used when producing a new product. Eg. a standard component may be shop bought **mayonnaise, tomato sauces for pasta, pizza bases**
Sensory descriptors - Words that describe taste, smell, texture and flavour.
Shelf life - How long a food product can be kept, making sure it is safe to eat and good quality.
Target Market / group - The person or group of people that the product is aimed at. e.g. teenagers, families.
Tolerance level - The amount and flexibility allowed when making a product – in terms of weight, colour, size – so that it meets quality standards.
Traceability - Tracing a fault back to the point at which it occurred in order to remedy the fault and avoid it happening again.