Year 7 Food and Nutrition Knowledge organiser

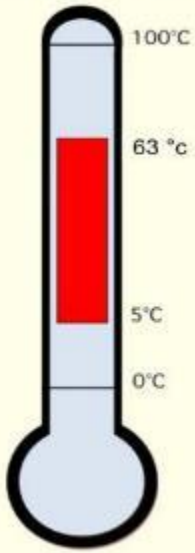
Food hygiene & safety

What conditions do bacteria need to multiply?

- Time
- Moisture
- Food
- Warmth




What happens to bacteria at different temperatures?



75°c	Most bacteria is **destroyed** so food is safe to eat at this temperature.
5-63°c	Bacteria **grows rapidly** at these temperatures. This is called the **danger zone**.
0-5°c	Bacteria **grows slowly**, your fridge should be between these temperatures.
-18°c	Most bacteria is **dormant** (asleep), your freezer should be under this temperature.

- ☐ Wash your hands before beginning practical work using: hot water, soap and paper towels.
- ☐ Tie back long hair
- ☐ Do not wear nail varnish
- ☐ Remove all jewellery
- ☐ Always wear an apron
- ☐ Do not cough or sneeze on food
- ☐ Do not lick your fingers
- ☐ Always store high risk foods in the fridge
- ☐ Always wash your equipment in clean, soapy, the water and dry with a clean tea towel
- ☐ Leave worktops and sinks clean and dry

https://www.youtube.com/watch?v=uo3hVPN5dFI
Spreading of bacteria

https://www.youtube.com/watch?v=5Xi2Nc1UicQ
bacteria song

The four C's

Cleaning	Wash and dry your hands and keep everything clean.
Chilling	Store high risk foods in the fridge (0-5°C).
Contamination	Keep raw and cooked foods separate.
Cooking	Cook food correctly, check it is cooked in the centre.

High Risk Foods


Meat


Poultry

Dairy


Fish


Eggs


Cooked Pasta and Rice

Food safety

- ☐ Take care when using knives. Hold them safely, wash them carefully and hand them in at the end of the lesson.
- ☐ Mop up spills immediately
- ☐ Take care with electrical equipment
- ☐ Turn off cookers and equipment after use
- ☐ Use oven gloves when using the oven
- ☐ Turn pan handles to the side when in use on the hob
- ☐ Do not use equipment if you have not been shown how to use it
- ☐ Listen to instructions and use equipment correctly
- ☐ Return all equipment to its proper place after use
- ☐ Be aware of emergency exists and the procedure should there be a fire

The Bridge Hold

Place the item onto the chopping board.
Make a bridge over the item with your hand. Your fingers should be on one side and your thumb should be on the other.
Pick up the knife with your other hand and check that the blade is facing downwards.
Then, guide the knife under the bridge and over the onion. Cut into the item by pressing the knife down and pulling it out of the bridge. You might like to think of the knife as a train which goes under the bridge.
Now, take one half at a time and place it flat side down. Make a bridge over the item, and use the knife just like before to cut it into quarters or slices. This method of cutting is safe and can be used for lots of different ingredients, such as potatoes or strawberries. https://www.youtube.com/watch?v=qN0GCLXfHWY

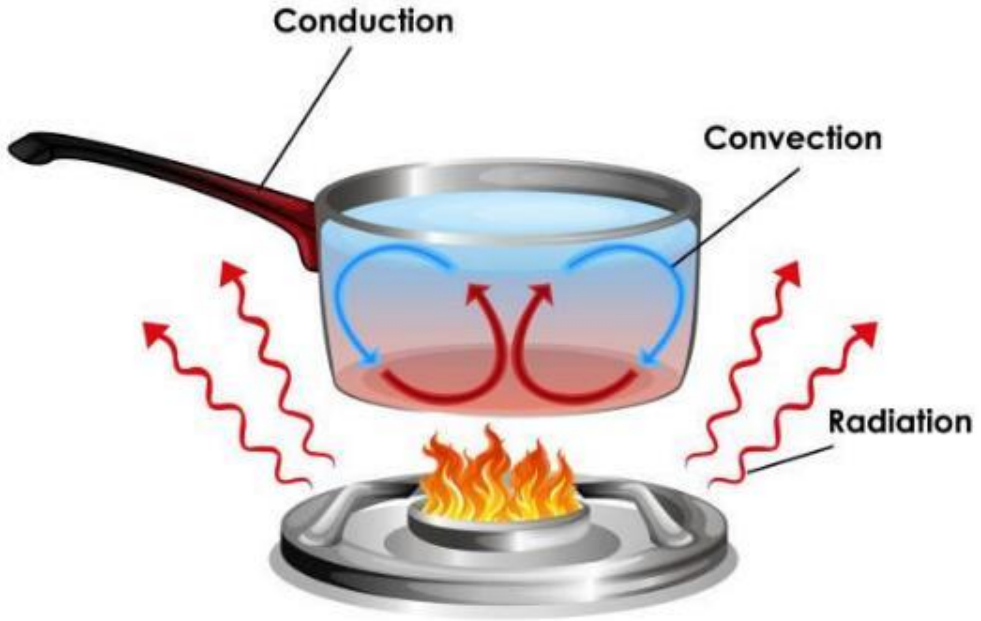
The Claw Grip

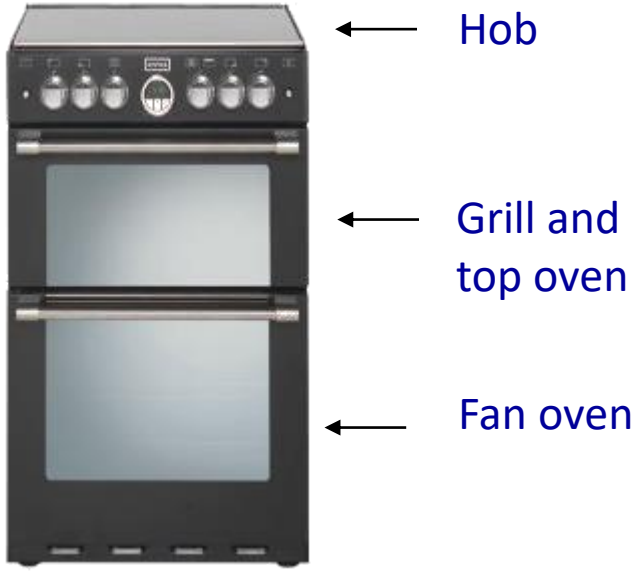
Place the item onto the chopping board.
Make a claw with your hand by partly curling your fingers together. Decide how thick you want the slices before you begin.
Then, pick up the knife with your other hand and check that the blade is facing downwards.
Tilt the knife and slice through the item, using your fingers as a guide.
Slide your fingers back, keeping your grip on the item, and continue slicing carefully.
This method of slicing is safe, and can be used for lots of different ingredients, such as peppers and onions. https://www.youtube.com/watch?v=wVJUD8SSQRA

Cookers and heat transfer

Cooker safety

- Always use oven gloves.
- Never leave food cooking unattended.
- Keep pan handles to the side when the hob is in use.
- Remember trays removed from the oven will remain hot for some time.
- Keep clean – grease and splatters of food can catch fire.
- Keep tea towels and other flammable materials away from heat.
- Always turn off the cooker when not in use.
- Never use water on a grease fire!





Conduction
The transfer of heat from one substance to another by **direct contact.**

Examples of conduction
- Fried egg (hob)
- Fried onions (hob)
- Stir Fry (hob)

Convection
The transfer of heat through a fluid or gas caused by **molecular motion.**

Examples of convection
- Boiled vegetables (hob)
- Boiled pasta (hob)
- Cakes and biscuits (oven)

Radiation
The transfer of energy the form of **electromagnetic waves.**

Examples of radiation
- Bacon (grill)
- Toast (grill)
- Burgers (grill)

Food science

Enzymic browning

Enzymic browning is a chemical process which occurs in fruits and vegetables when cut, grated or bruised.

The **enzyme** Polyphenol Oxidase (PPO) in the fruit reacts with oxygen to produce a brown pigment.

Methods to prevent enzymic browning	How do these methods work?
Cover with liquid	Reduces the contact with oxygen
Add lemon juice	Acidity below PH 4 inhibits PPO
Cook	Cooking destroys PPO
Chill	Temperatures below 7°C inhibit PPO

Shortening

- **Flour** is **coated** in **fat** which **stops gluten forming** when **liquid is added.**
- This results in a **softer, crumbly texture** instead of crispy and chewy.
- A good example of shortening is **pastry** which is **soft and crumbly** opposed to bread crust which is crusty and chewy.

Dextrinisation

Definition

The browning of starch that occurs when **dry heat** is applied.

How it happens

On dry heating the starch in food goes through a chemical reaction and produces dextrin resulting in a change in colour of food to golden brown.

Examples

Toasting bread and baking biscuits and cakes.

Gelatinisation

The process of gelatinisation occurs when starch granules are heated in a liquid, causing them to swell and burst, which results in the liquid thickening.

What happens at 60 °C ?

Starch granules begin to swell as they absorb the liquid.

What happens at 80 °C ?

Starch granules begin to burst open releasing starch molecules into the surrounding liquid.

What happens at 100 °C ?

Gelatinisation occurs and the sauce is fully thickened.

What happens when the sauce cools down?

It becomes a solid gel.

Nutrition

Eatwell guide

The **Eatwell Guide** shows the proportions in which **different groups of foods** are needed in order to have a **well-balanced** and **healthy diet**.

Food groups

Fruits and **vegetables** give us plenty of **fibre**, **vitamins, minerals** , including folate, potassium and vitamins A and C. This group is needed to keep the **gut healthy** and protect us against **diseases (good immune system)**.

Potatoes, bread, rice, pasta and other starchy carbohydrates
Provide the body's **main source of energy**.

Beans, pulses, fish, eggs and meat are sources of **protein, vitamins and minerals. Protein** is needed to **build tissues** and cells in the body for **growth and repair**.

Dairy and alternatives are good sources of **protein** and **vitamins**, and they're also an important source of **calcium**, which helps to keep our **bones strong**.

Oils and spreads are a source of essential fatty acids such as omega-3 – "essential" because the body can't make them itself. **Fat** helps the body absorb vitamins A, D and E.

Foods with added sugar and high in saturated fat are **not needed in our diet**, so should be eaten less often and in smaller amounts. Foods with added sugar and high in saturated fat only have **detrimental** effects on the body and health.

Seasonality

Fruit and vegetables naturally **grow in cycles** and ripen during a certain **season** each year. When they are in season they are harvested.

Today we can buy and eat a wide variety of foods all year. **Technology** and **transport** mean they do not need to be in season.

- Food can be transported around the world on **lorries**, **boats** and even **planes**.
- Farms use **large greenhouses** to control the temperature and create the perfect growing conditions. That is why we can buy berries like **strawberries** and **blueberries** in the winter when they would not naturally grow outside.
- Tropical fruit comes from places with **hot climates** like Asia, Latin America and Africa. Most of our **pineapples** come from Costa Rica. **Mangoes** come to the UK from a number

Benefits of buying local seasonal produce

- Locally produced food is fresher, tastier and more nutritious than food which has travelled a long distance.
- Locally produced food cuts down on carbon emissions caused by transportation.
- Locally produced food supports the local economy and provides jobs.

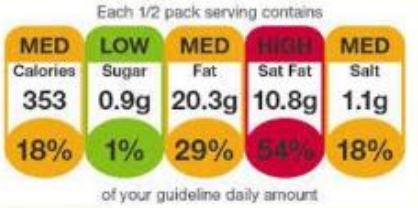
Disadvantages of buying local seasonal produce

- You can only eat fruit and vegetables in season unless they are produced in heated greenhouses.
- Threatens the livelihoods of some of the world's poorest people, who are dependent on exporting.
- Not all fruits can be commercially grown in the UK e.g. pineapples, bananas and mangoes.

Food labelling

What's on a food label?

Traffic light labelling



The traffic light label is colour coded and shows that green is low in a particular nutrient, amber means medium and red is high in a nutrient.

- **Red** means the product is high in a nutrient and you should try to cut down, eat less often or eat smaller amounts.
- **Amber** means medium. If a food contains mostly amber, you can eat it most of the time.
- **Green** means low. The more green lights a label displays, the healthier the food choice is.