

Food Preparation and Nutrition Knowledge Organiser Year 7

Cooking Methods

Water based

Boiling (conduction & convection)
Food cooked in a boiling liquid (usually water)
A harsh method – not suitable for delicate foods (i.e. Fish)
Foods: Usually starchy foods
+ healthy – no fat/oil needed, Low energy use (if a lid is used)
– water soluble vitamins are lost in water, flavour & appearance not improved.

Simmering (conduction & convection)
Like boiling but lower temperature so more gentle
Foods: soup, curry, pasta sauces
+ Preserved nutrients more than boiling

Poaching (conduction & convection)
Pan of liquid. Below 100°C (80°C)
Foods: Eggs, fish and fruit
+ Gentle method, keeps food tender
– Loses some vitamins in water, & no flavour improvements
BUT, can poach in a sauce to add flavour i.e. fish in milk

Blanching (conduction & convection)
Part cooked in boiling water then placed into cold/iced water to stop cooking
+ Preserves the colour, texture & vitamins, Removes/rinses harsh flavours i.e. onions go milder; Shrivels skins on tomatoes/potatoes – easier to remove
Prepares fruit & veg for freezing – destroys enzyme = stops enzyme action.

Steaming (convection)
Steam from boiling water cooks the food
Foods: Fish, rice, veg
+ No fat, no direct contact with the water means vitamins are retained
– Low in flavour. Delicate foods only due to gentle method, not tough meats

Sous vide (conduction)
Packaged and vacuum sealed, then heated slowly at a specific temperature.
+ Consistent results, good results with texture and flavour retained.
– no browning of foods especially meats & expensive equipment required.

Stewing (stew in hob, casserole in oven) (convection)
Slow cooked in ovenproof pot with a lid, in liquid
Mixture of simmering & steaming
+ Tough & large cuts of meat – tenderised; Nutrients retained; Absorbs juices
– Slow

Braising – same as stewing but meat is seared first – by frying
+ Same advantages as stewing plus juices/moisture is sealed in & edges are caramelises for flavour

COOKING TECHNIQUES HEAT TRANSFER

Dry methods

Baking - (Convection, Conduction & Radiation)
In an oven with no fat added
Foods – cake, potato
+ Improves texture (crisp), taste & appearance (browns)
Healthy – no fat added
– Very specific temperatures & times needed; Dries out food; Energy use (longer time, high temperature)

Roasting (Convection, Conduction & Radiation)
In an oven with fat added
Basting – using own fat
Foods – meat, potatoes
+ Browns; Food stays moist; Crisp & tasty;
Use fat for other foods (i.e. Gravy); can make meat 'rare' inside which can be desirable/
– Unhealthy, slow and energy use.

Grilling (radiation in grill, radiation & conduction for griddle)
Very high temp – from above or below food
BBQ similar but over coals lower for longer
Foods: tender meats, vegetables
+ Cooks quickly at high temp; Makes crisp & golden
Healthy – No fat & fat drains out; Smoky if BBQed
– Hard to evenly cook a food – edges can burn with middle raw; bad for high risk foods
Raw foods being added to BBQ/grill can cause cross contamination; Only for tender cuts of meat

Dry fry (conduction)
In pan, no fat added & natural fat melts
Foods: Fatty meats, nuts, seeds, spices (called toasting)
Starts at low temperature then increase when fat melts
+ No fat; Taste and smell ADDS Flavour
– Time – low start; Small range of food

Fat/Oil Based methods (Frying) (all conduction)

Shallow frying
Little bit of oil in a frying pan
Food: Meat, eggs, fish, pancakes
+ Not as much oil as deep frying; Crispy texture
– Less healthy than water based, solid fats from food melt in

Deep drying
Food submerged into boiling fat
+ Very crispy texture, Quick
– Dangerous – fire risk, and unhealthy

Stir frying
Wok with a little but oil
Healthier than deep frying and shallow frying
Food: Usually noodles, veg and a protein so balanced
Has to be small foods for quick cooking, move around
+ Very quick, retains nutrients
– Needs constant attention, move foods to prevent burning

Sweating to soften
Lightly frying vegetables to remove moisture. No browning.

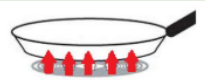
Heat Transfer

Heat Transfer

Heat energy – must be moved or transferred to cook food

Conduction

E.g. Frying pan
Direct heat from a hot surface (i.e. pan, tin – metal as good conductors)
Heat makes the molecules vibrate, vibrations pass on to heat the whole food (from pan to food)



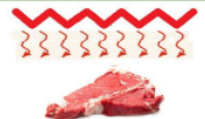
Convection

E.g. Boiling water
Heat transfer through a gas or liquid. When liquid/air is heated – it warms near the surface.
Heat rises and is replaced with cooler liquid which was originally above. This leads to circulation (or convection currents) until all of the liquid is hot. This also occurs in oven with gas/air.
Fan ovens - moves air around = even cooking times, similar temperatures – faster heating, less energy



Radiation

E.g. grills and toasters and microwaves
Through 'waves' or infrared rays – like the sun heating up the earth
No 'direct' contact with a heat source
Food absorbs the heat
Microwaves - 'micro' 'waves' which penetrate the food



Why do we cook food?

To kill pathogenic bacteria : make food safe to eat

To improve the flavour of food

To make food edible and aid digestion

To make food aesthetically appealing

To preserve food

To change the properties of food e.g. egg coagulates to make a fried egg

To add texture and colour to food e.g. caramelising

To improve the shelf life of food

To give a variety of food in the diet

To have hot food in cold weather