

## 1. Health, safety and hygiene

### Hazards in the kitchen

#### Trip/slip hazards – kitchen

Cupboards/drawers left open, open oven doors, wet floors, handles facing outwards on hobs and worktops, stools not tucked in, bags on the floor, spilt liquids not mopped immediately.

**Food not stored correctly** – raw meat and dairy products not stored in fridge at correct temperature and on correct shelf to prevent cross-contamination, warm food wrapped up and stored in a fridge before cooling for 90 minutes, raw meats left unwrapped.

**Unsanitary work area** – hands not washed before cooking, hair not tied back, work surfaces not sprayed with antibacterial spray before use, cross contamination using incorrect chopping boards/utensils for raw/cooked ingredients (red boards)

**Burns/ Cuts** – not concentrating whilst using knives, not using oven gloves to take hot items out the oven, metal spoons in hot pans; always use a wooden spoon.

**Fires** – items left close to an open flame, toaster left on

**Equipment not used properly** – electric whisk/hand blenders blades/ beaters turned on/off before touching bottom of bowl and not held upright, fingers/hair/ties in reach of beaters.

## KS3 FOOD TECH – KNOWLEDGE ORGANISER 2021-22

### 2. Food safety / temperature danger zone

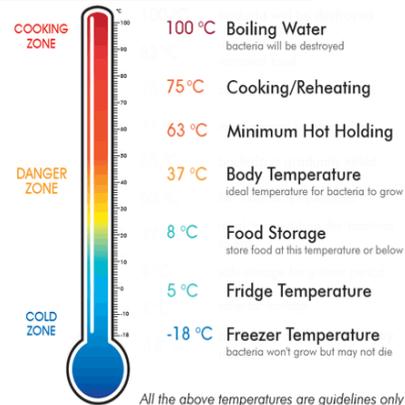
Food poisoning is an illness caused by eating food or drinks contaminated with harmful bacteria. Millions of bacteria can grow on common, everyday foods. Bacteria need 4 things to multiply:

**Time** – a single bacterium can multiply to over two million in just seven hours

**Warmth** – the 'danger zone' temperatures at which bacteria grow best are between 5°C and 63°C

**Food** – like any other living things, germs need food to grow. High-risk foods that bacteria love best include dairy products, meat, poultry, fish and shellfish

**Water** – bacteria need moisture to grow. This includes moisture in 'wet' foods such as juicy meats.



### The Four C's of Food Safety



- **Clean** – wash hands, utensils, & surfaces
- **Contain**- don't cross contaminate. Keep raw foods separate from veg. Use different cutting boards.
- **Cook**- cook to necessary temperature (use a thermometer)
- **Chill**- as soon as possible. Never after two hours in the danger zone.

### The Eatwell Guide

Drink 6-8 glasses a day. Water, lower fat milk, sugar-free drinks, tea & coffee all count.

Maximum of 150ml of fresh fruit/veg smoothies a day

Traffic light labelling system

Fruit & Vegetables

High fat/sugar foods - Eat less often and in small amounts



Starchy Carbohydrates

Oils & spreads - Choose unsaturated oils and only use in small amounts

Dairy and alternatives

Proteins – beans, pulses, fish, meat and alternative proteins

There are 5 key nutrients needed to maintain good health; **MACRONUTRIENTS** (needed in large amounts) - Carbohydrate (energy), Protein (growth & repair) and Fat (warmth, protection of organs & energy) and **MICRONUTRIENTS** (needed in small amounts) - Vitamins and Minerals.

The Eatwell guide shows the different types of foods and drinks we should consume – and in what proportions – to have a healthy, balanced diet and recommends:

- Eat at least 5 portions of fruit and vegetables every day.
- Base meals on starchy carbohydrates such as rice, pasta, potatoes, cereals, choosing wholegrain varieties where possible.
- Have some dairy or dairy alternatives (such as soya); choosing lower fat and lower sugar options.
- Eat beans, pulses, fish, eggs, meat and other proteins (including 2 portions of fish every week, one of which should be oily) choose leaner cuts of meat and poultry, removing all visible fat/skin.
- Choose unsaturated oils and spreads and eat in small amounts.
- Drink 6-8 glasses of fluid per day, ideally water-based drinks.

## Food Labelling

It is a legal requirement in the UK and EU to label food.

Food labelling is important as it :

- Educates the consumer
- Helps the consumer to make informed choices.
- Helps the consumer to store and cook food safely therefore preventing food spoilage and poisoning.
- Allows the consumer to compare like-for-like foods and make a healthier choice.

The traffic light system on food packaging helps us to make healthier choices.

**GREEN** - food is low in fat, saturated fat, sugars or salt.= Healthy option.

**AMBER** – food contains a medium amount of fat, saturated fat, sugars or salt. Eat in moderation.

**RED** – food contains HIGH amounts of fat, saturated fat, sugar or salt. Beware!

Each serving (150g) contains

Energy	Fat	Saturates	Sugars	Salt
1046kJ 250kcal	3.0g	1.3g	34g	0.9g
	LOW	LOW	HIGH	MED
	13%	4%	7%	38%

of an adult's reference intake  
Typical values (as sold) per 100g: 697kJ/ 167kcal

**Use by date** – High risk, perishable foods ; meat, milk, fish, cheese. Consumers risk food poisoning if eaten after this date.

**Best before date** - pre-packaged food; rice, pasta, tinned foods. Consumers can eat after the date but they may not be at their best quality in terms of taste and texture.

## THE FLAVOUR STAR

There are 5 basic tastes that the tongue can detect; **Sweet, sour, spicy, bitter and umami** (salty/savoury).

We use our sense of taste and smell to create flavour.

The way food looks - **SIGHT**(colour, texture, presentation, amount on the plate), **TASTES** on our tongues, aroma – **SMELLS**– **TOUCH** and **SOUNDS** (crispy, crunchy)  
Influences whether or not we try it or eat it.

### Foods

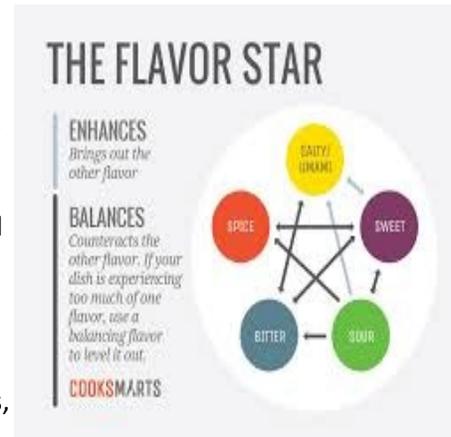
**Bitter** – coffee, dark chocolate, green leafy vegetables sprouts/cabbage.)

**Sweet** – strawberries, non-citric fruits, sugary foods, honey.

**Sour** – kiwi, lemon, lime, vinegar, yoghurt.

**Spicy** – turmeric, garlic, chillies, horseradish, pepper.

**Umami** – bread, meat, fish, mushrooms, Marmite, soy sauce.



**Balance** e.g. sweet and sour sauce, salted caramel.

**Enhance** e.g. adding salt and pepper, spices.

## Food Provenance

Food provenance is where our food 'originates' from before it reaches the food industry; manufacturers, retailers (supermarkets), restaurants and our plates!

It is important to know where food comes from so that we know it is;

- Safe to eat (free from disease)
- To know it is of high quality ( red tractor scheme)
- Been stored/cooked correctly
- Animal and people welfare ( Fairtrade/RSPCA assurance scheme) has been observed.

Food is sourced by 4 methods:

- Caught (fish/wild animals)
- Reared (sheep/cattle/pigs/poultry/duck)
- Grown ( crops – fruit/veg/herbs/ cereals)
- Foraged or gathered (edible fungi/berries/seaweed)

## Seasonality

Seasonality is eating food at the time of year when it is harvested and considered to be at its best in terms of freshness, highest nutritional value, flavour, texture and colour.

- Fruits and vegetables naturally grow and ripen during certain times of the year. When food is ripe it's full of nutrients and has more flavour, so 'eating seasonally' means you're eating food when it's naturally at its best in terms of flavour, nutrients, colour and texture. **In the UK we are unable to produce/grow all foods all year due to the climate (weather) and soil conditions ( too wet/too cold). To overcome this some crops are grown in green houses under artificial light and heat sources.**

Some foods, such as mangoes, pineapples, bananas and oranges need a tropical climate (warmer and drier) so cannot be produced in the UK at all and need to be imported from abroad.

Advantages	Disadvantages
At best quality – fresher, nutrients, colour, texture and taste.	
Plentiful, therefore cheaper ( more economical)	
More widely available.	
Supports the local economy, providing jobs and income.	
To reconnect with nature's cycle and the passing of time.	
Reduces <b>Food miles</b> ( food doesn't need to travel so far or be imported therefore less air pollution and lower <b>carbon footprint</b> (measure of the contribution of food production to the emission of greenhouse gases) which has a negative effect on the environment and health.	Not all food available all year round therefore diets and food choice may need to change. Importing increases food miles and carbon footprint.

## Food Preservation

Preserving food extends the shelf life by preventing bacteria to multiply

. There are many different methods of preserving:

- Adding sugar ( jam, jellies, sauces and chutney making)
- Adding vinegar (pickling)
- Smoking (meats and fish byprocess of flavoring, browning, cooking, or preserving food by exposing it to smoke from burning or smoldering material, most often wood)
- Curing (by the addition of salt with the aim of drawing moisture out of the food to prevent bacterial growth.
- Freezing( storing foods below -18° and -24°c to make bacteria 'sleep' It does NOT kill the bacteria!

## Key vocabulary

**Food miles** – distance travelled from its origin to our plates, food retailers/restaurants/shops.

**Carbon foot print** – measure of contribution of carbon emissions.

**Food provenance** – Place of origin of food – where grown, reared, caught or foraged and harvested.

**Food preservation** – means of extending the shelf life of ingredients.

**TVP** – Textured vegetable protein, meat alternative made from soya beans.

**Tofu** - firm white block (meat alternative) made from soya curd.

**Micronutrient** – chemical substances naturally occurring in foods that we need **small** amounts of.

**Macronutrient** - chemical substance naturally occurring in foods which we need **large** quantities of.

**Antioxidant** – vitamins that help protect the body from developing heart disease and some types of cancer.

**Seasonality** – time of year food is naturally at its best in terms of nutrients, quality, freshness, taste, colour

## Reasons for food choice

There are many factors that affect what we choose to eat:

- ❖ Medical conditions/allergies
- ❖ Cost
- ❖ Time (to buy, prepare & cook)
- ❖ Time of day (availability to cook, restricted through lack of resources e.g. school lunch box.)
- ❖ Food preferences (likes and dislikes, choose to follow a specific diets – vegan/vegetarian)
- ❖ Culture/traditions.
- ❖ Ethical/moral/religious beliefs prevent eating some food groups.
- ❖ Physical activity levels (athletes need more energy)
- ❖ Availability/seasonality
- ❖ Celebrations – weddings/birthdays/ bbq etc.
- ❖ Attitudes towards healthy lifestyle/nutrition.
- ❖ Lifestyle – prefer indoors gaming or outside walking , prefer cooking or eating out.
- ❖ Peer pressure
- ❖ Enticements – adverts, special offers.

## What to consider...

- **Vegetarian** – do not eat meat, but generally eat dairy products.
- **Vegan** – plant based diet, no products from animals.
- **Coeliac**- gluten intolerant of any food containing gluten e.g. wheat, oat, barley, rye, flour, bread, cakes, pastries and biscuits.
- **Lactose/dairy intolerant** – milk and milk products.
- **Low fat/sodium/sugar diets** – avoid foods high in these.
- **Nut allergy**- anaphylaxis is an extreme reaction to eating/contact with nuts e.g. peanut.
- **Religious considerations**- e.g. Judaism, Islam, Rastafarian do not eat pork, Buddhism avoid meat and dairy products whilst Hinduism do not eat beef.

## Farm to fork - 4 stages

### Farm to fork

The food chain usually starts within the agricultural sector, e.g. a farm.



Consumers buy food and drink in shops and cafes.



Most food is processed within the manufacturing sector.



It is then distributed through wholesale and transport systems.



## Food processing

Before reaching our plates, various things (processing) are needed to prepare it to make it safe, appetising, palatable and ready to transport to the shops ready for use by the consumer.

**Primary processing** is when foods are processed straight after harvest or slaughter to get them ready to be eaten or used in other products:

- wheat milled into flour.
- crops sorted, washed, trimmed and packaged.
- meat/poultry/fish – blood drained, internal organs, heads, feet and skins removed, cut into joints.
- Milk – heat treated, pasteurised or skimmed.

**Secondary processing** is when primary processed foods are either used on their own or mixed with other foods and turned into another food products such as:

- wheat flour into bread or pasta.
- Milk into cheese or yoghurt
- Fruit into jam/Vegetables into chutney