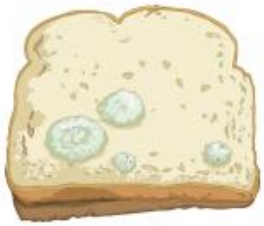
Food Spoilage Knowledge Organiser

Signs of Food Spoilage:

- discoloration
- visible mould
- changes in texture
- unpleasant odour
- changes in flavour
- 'blown' cans and jar lids



'Best Before' Date

- Long shelf life, such as tinned foods.
- Given as a warning about quality.
- If consumed after the date, it is usually safe but lower quality.
- Eggs are the exception, with a risk of salmonella.

High-Risk Foods – short shelf life

- cooked meats, fish and poultry
- dairy products
- gravies, stocks and sauces
- shellfish
- cooked rice

Ambient Foods – can be safely stored at room temperature

- tinned vegetables
- crisps
- cereal
- dried pasta
- sugar

'Use By' Date

- short shelf life
- high-risk foods
- Given as a safety warning.
- If consumed after the date, there is risk of food poisoning.

Storing Food Safely - Temperature

Method	Explanation	Example
heat	Heating kills most microorganisms – stops enzyme activity.	Pasteurised milk, all cooked foods, canned foods.
freezing	Microorganisms become inactive in very cold temperatures.	Frozen meats, fish, ready meals.
drying	Microorganisms need air to reproduce.	Noodle pots, coffee, dried milk, gravy granules.
removing air (oxygen)	Most microorganisms need oxygen to reproduce.	Food in cans and jars, sandwiches, crisps and vacuum-packed meats and fish.
chemicals	Changing the pH level of the food to create a hostile environment for the microorganism.	Pickles, salted meats, smoked fish, chutneys, jam.

Storing Food Safely - Temperature

cooking/reheating	75°C/: kills bacteria
the danger zone	5-63°C: bacteria grow quickly. 37°C: optimum temperature for bacteria growth.
chilling	0-5°C: slows down bacteria growth and extends shelf life of food.
freezing	-18°C: stops bacteria growing (until defrosted) and extends shelf life of foods and preserves nutrients.

Storing Ambient Foods

freeze drying	Removes moisture, e.g. dried coffee.
canning	Food is sealed in cans and heated to kill of microorganisms.
vacuum pack	Air is sucked out.
chemicals	For example, pickling – adding vinegar to make environment too acidic for microorganisms to grow.

Causes of Food Spoilage

microorganisms	Bacteria, yeast, moulds, fungi.
enzymes	Speed up the process of decay.
insects and rodents	Leaves behind bacteria, urine and faeces.
chemical reactions	Reaction between food, oxygen and moisture.
environmental factors	Warmth, pH, oxygen and moisture.
time	Speed of spoilage, hygiene, correct storage and temperature.

Food Poisoning Knowledge Organiser

Cross Contamination

Bacteria do not have wings or legs, therefore it needs a 'vehicle' to move from one surface to another. They usually use a human, insect or animal. For example, using a knife to cut raw chicken and then, without washing it, to cut a cheese sandwich.

Sources of Pathogenic Bacteria

- human beings – poor hygiene
- raw meat and poultry
- all animal protein foods – high risk foods
- pests – rats, mice, cockroaches, flies
- dust, dirty bins and waste food
- contaminated water

HACCP

(Hazard Analysis Critical Control Point)

A system for recognising and assessing food hazards and controlling the hazards to keep food safe.

Critical Control Point

Identify the hazard which must be controlled in order to remove or reduce it to a safe level.

Sources of Food Contamination

Physical: A foreign object has dropped into the food, e.g. hair, jewellery, finger nail, machinery components.

Chemical: Cleaning products & pesticides causing liver damage, internal burns & nerve damage.

Biological: Bacteria, viruses, moulds & fungi which cause food poisoning.

Preparing Food Safely

personal hygiene	Wash hands, wear a hair net, wear a clean apron, remove jewellery, cover cuts.
separate raw and cooked foods	Use correct chopping boards for raw meat and vegetables.
washing raw vegetables	Remove soil.
equipment	Use clean equipment – use anti-bacterial spray on surfaces.
defrosting	Defrost fully at the bottom of the fridge away from other food.

Food Poisoning Knowledge Organiser

Food Poisoning

Pathogenic Bacterium	Found in	Typical Symptoms	Onset Time
Campylobacter	Raw poultry, meat, milk, sewage.	Abdominal pain, diarrhoea, nausea, fever.	48-60 hours
Salmonella	Intestines of humans & animals. Raw Poultry & meat, eggs, milk.	Abdominal pain, diarrhoea, nausea, vomiting.	12-36 hours
Staphylococcus A	Humans – skin, hair, nose, mouth, throat, cuts, spots.	Abdominal pain/cramps, vomiting, chills.	1-6 hours
E.coli 0157	Human & animal sewage, water, raw meat, muddy vegetables.	Abdominal pain, fever, diarrhoea, vomiting, kidney damage/failure.	12-24 hours
Listeria	Soft cheese, spate, shellfish.	Fever, muscles aches, diarrhoea. Pregnant women are at higher risk of infection – can lead to miscarriage.	70 days

Serving Food Safely

serve hot food straight away	Or keep above 63°C for no longer than two hours.
serving cold food & storage	Cool down within 90 minutes before refrigerating.
cover food	Prevent flies and pests contaminating it.
avoid food waste	Avoid overfilling the waste bins.