GCSE

Food Preparation and Nutrition

REVISION BOOKLET

Name _____

How to use this booklet

- Year 10:

1. Choose a topic that links to your current lesson tasks.
2. Complete the revision tasks on this topic.
3. Each sheet should provide you with headings and images relating to this topic. You will need to add detail and information relating to these topics.
4. Use the first two sheets of this booklet to help you identify which topics you wish to choose.
5. Once you have completed them save your work into a folder marked Food GCSE – inclusion tasks.
6. You may also print out the sheets and complete them.

- Year 11:

1. Choose a topic that links to your current assessment tasks.
2. Complete the revision tasks that will help you with the current assessment – NEA1, NEA2 or written exam December/June.
3. Each sheet should provide you with headings and images relating to this topic. You will need to add detail and information relating to these topics.
4. Use the first two sheets of this booklet to help you identify which topics you wish to choose.
5. Once you have completed them save your work into a folder marked Food GCSE – inclusion tasks.
6. You may also print out the sheets and complete them.
7. All the sheets in this booklet are linked to your GCSE and will assist in your learning.

Food Preparation and Nutrition REVISION – Contents

SECTION A – CORE KNOWLEDGE	✓	?	✗	SECTION B,C and D – CORE KNOWLEDGE	✓	?	✗

Nutrition
• Macronutrients – Functions and Sources
  • Protein – HBV, LBV, animal/vegetable sources
  • Fat – EFA's, visible and invisible
  • Carbohydrates – sugars/starch
• Micronutrients – Functions and sources
  • Vitamins – A, D, E, K and B group
  • Minerals – Iron, Calcium, Sodium
• Water
• Dietary fibre (Non-starch polysaccharide- NSP)
• Why the body needs nutrients
• Effect of deficiency or excess
				Factors affecting food choice
				• Factors that affect food choices
				• The choices that people make about foods, based on religion, culture or ethical belief, medical reasons or personal choices
				• How to make informed choices about food and drink to achieve a varied and balanced diet
				• Food labelling
				• Sensory perception
				• Tasting panels and preference testing			

Diet and Health • The relationship between diet and health • Dietary needs of different people • Energy balance – BMR, PAL's • Factors that influence energy requirements • Diet related health issues – obesity, cardiovascular, CHD, high blood pressure, diabetes, diverticulitis, osteoporosis, dental and anaemia • Allergies and intolerances				**Technological developments** • Factors affecting food technology • Importance of technology in food production and processing • Effects of food processing and production • Fortifying and modifying foods to support better health			
Healthy Eating • Eatwell guide • 5 a day • The 8 dietary guidelines • A balanced diet • Food labelling • Cutting down on fat, sugar and salt				**Food Manufacturing** • Primary processing • Secondary processing • Affects of processing an nutritional and sensory properties			
Dietary Needs • Babies, Toddlers/pre-school, School-aged, Adolescents, Adults, Older people, Pregnant and lactating women • Nut allergy, Coeliac disease and lactose intolerance • DRV's, EAR's, RNI's • Modifying recipes – lower fat, sugar, salt, increase fibre				**Food** • Food source and supply • Processing and production • Food security • Technological developments for health and food production • Culinary Traditions • Factors influencing food choice			

Food Preparation and Nutrition REVISION – Contents

SECTION 1 – CORE KNOWLEDGE

Food Science

The effect of cooking on food

- Why do we cook food?
- Heat transfer during the cooking process
- Selecting appropriate cooking methods to conserve or modify nutritive value and improve palatability
- The positive use of micro-organisms
- Working characteristics, functional and chemical properties of ingredients
- Sensory properties

Food Safety

- Storing foods correctly
- Date marks and labelling
- Food spoilage
- The role of temperature, pH and moisture in the control of bacteria
- Bacterial cross-contamination
- Preservation
- Food poisoning - signs and symptoms
- Cooking and serving food

Skills Requirements

- Knife skills
- Preparation and techniques
- Cooking methods
- Sauces
- Setting mixtures and Raising agents
- Dough
- Judge and manipulate sensory properties

SECTION 2 - BASIC MIXTURES AND RECIPES

Preparation and cooking techniques

- Planning for cooking a single dish or a number of dishes
- Preparation of ingredients
- Cooking a selection of recipes
- Presenting a selection of recipes
- Working safely

SECTION 3 – COMMODITIES

Bread, cereals, flour, oats, rice, potatoes and pasta

Fruit and vegetables

Dairy foods

Meat, poultry, fish and eggs

Soya, tofu, beans, nuts and seeds

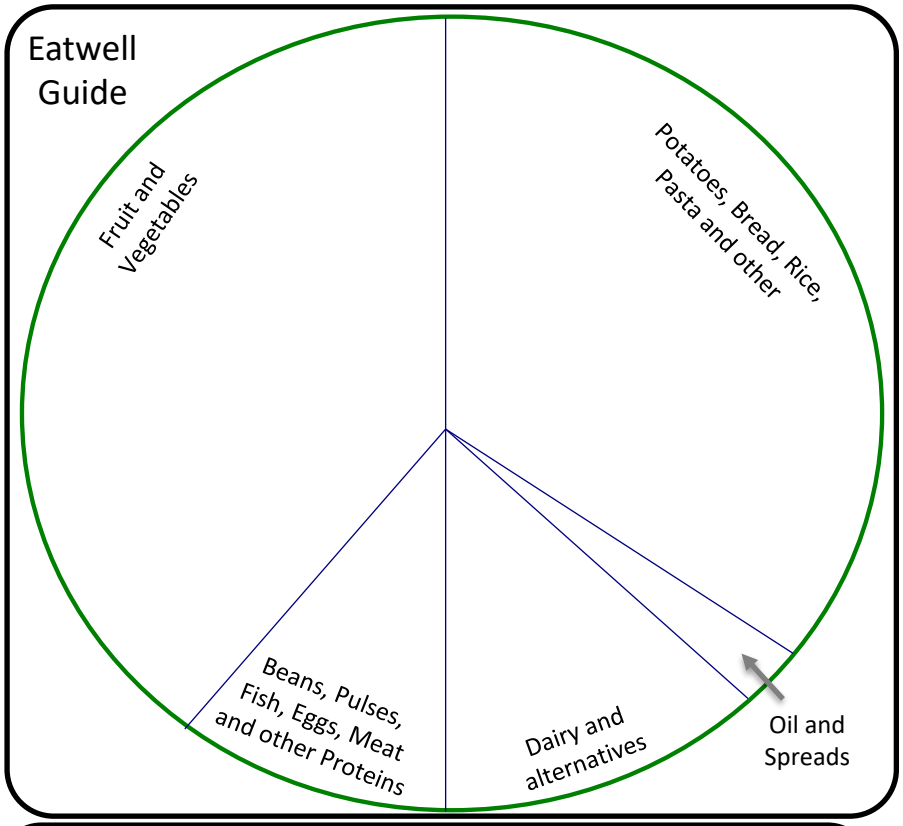
Fats and oils

Sugar and syrup

For each of the above you will need to know:

- The value of the commodity within in the diet
- Features and characteristics of each commodity with reference to their correct storage to avoid food contamination
- The working characteristics of each commodity
- The origins of each commodity

Food Preparation and Nutrition REVISION – Section A – Principles of Nutrition



	Starchy Foods	Fruit & Vegetables	Milk & Dairy Foods	Meat, fish, eggs and other non-dairy proteins	Foods and drinks high in fat & Sugar
Recommendations					
Food					
Adaptions to diet					

Dietary Reference Values

EAR's

RNI's

2,500 kcal

2,000 kcal

Fibre

Water

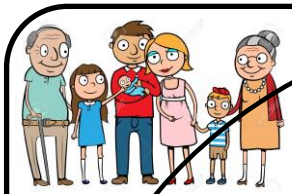
KEY WORDS:

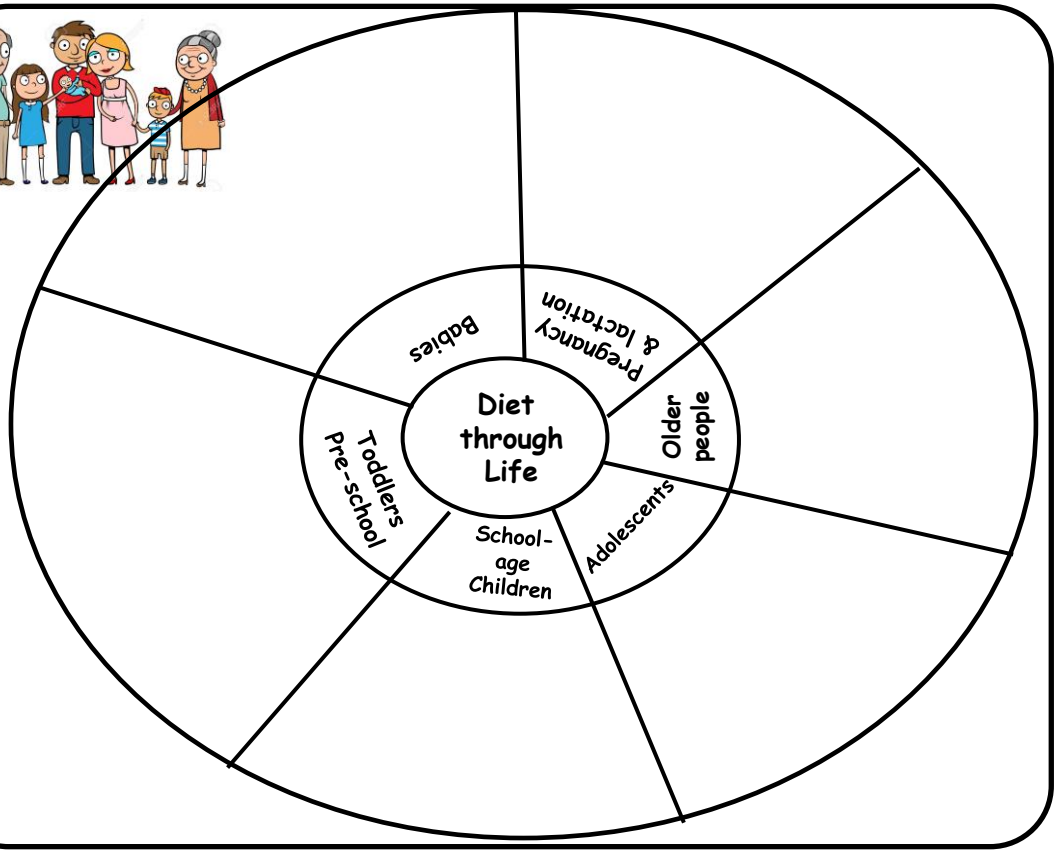
BMR
DRV
Free sugars
Hidden sugars
Fibre
Cholesterol
Saturated fatty acids
Unsaturated fatty acids
Hydrogenation
HBV
LBV
Amino acid

Food Preparation and Nutrition REVISION – Section A – Diet and Good Health

Eat Well Guide

Eat less often and in small amounts





Five a Day

1 portion =

Benefits of a healthy diet

Undernutrition:

Overnutrition:

Malnutrition:

Eight dietary Guidelines for Healthy Eating

Base your meals on starchy foods	Eat lots of fruit and vegetables	Eat more fish	Cut down on Saturated Fat
Eat less salt	Drink plenty of water	Do not skip breakfast	Get active and try to maintain an active weight

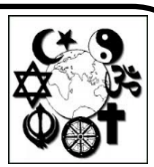
Food Labelling

Food Preparation and Nutrition REVISION – Section B – Diet and Good Health

Vegetarian Types

Cuisines	Traditional Ingredients	Traditional Dishes
British		
Indian		
Italian		
Mexican		
Spanish		
Jamaican		

Religious Beliefs



Buddhists

Hindus

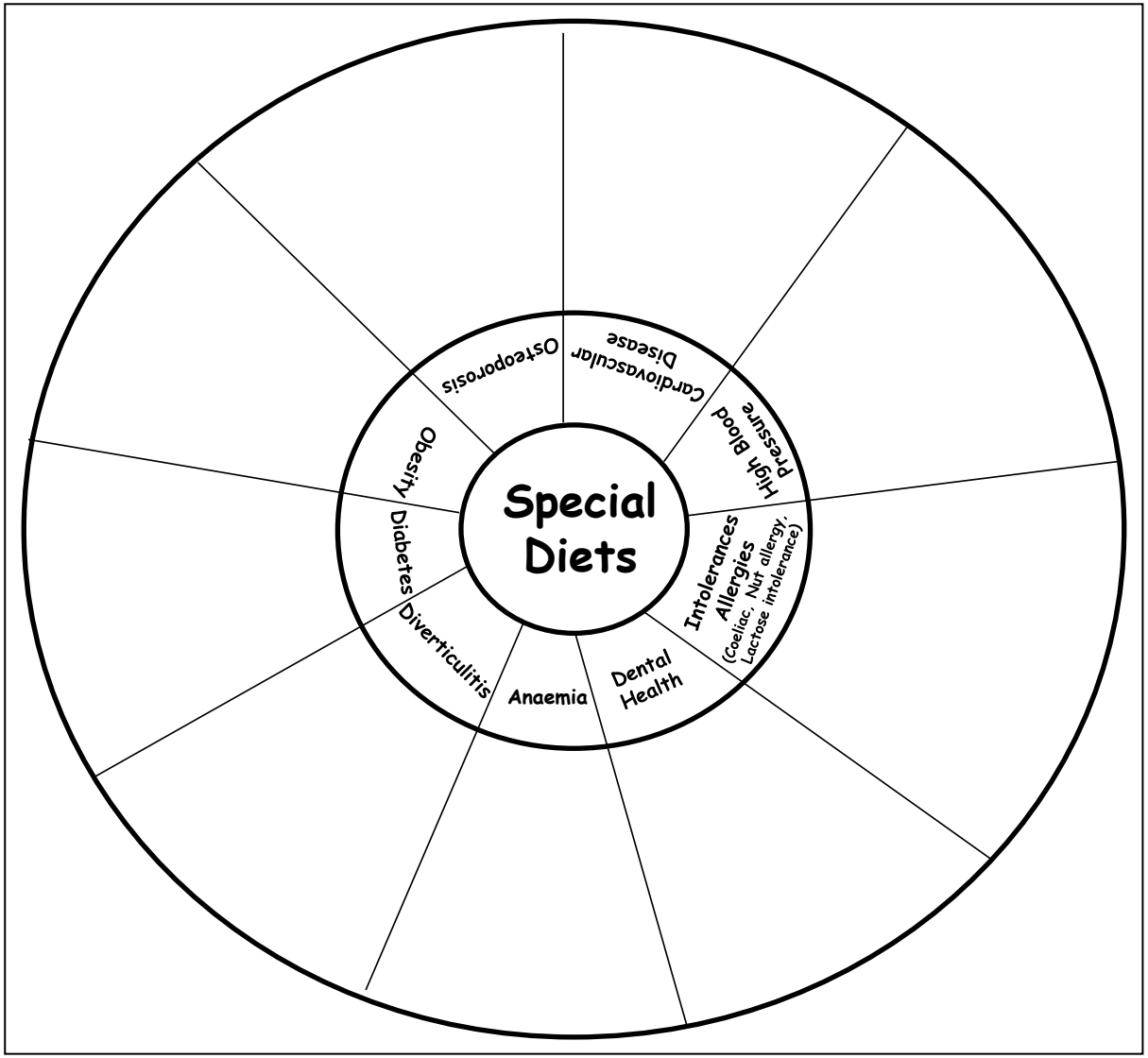
Christians

Jews

Muslims

Rastafarians

Sikhs



KEY WORDS:

Vegan
Lacto Vegetarian
Ovo-lacto vegetarian
Ovo-vegetarian
Coeliac Disease
Diabetes
Obesity
Nut allergy
Lactose intolerance
Coronary Heart Disease (CHD)

Food Preparation and Nutrition REVISION – Section D – The Science of Cooking Food

Heat Transfer

Conduction:

Convection:

Radiation:

Methods of cooking

Dry

- Baking
- Toasting
- Roasting
- Grilling

Frying

- Shallow Frying
- Deep Frying
- Stir Frying

Moist

- Boiling
- Simmering

Moist cont…

- Poaching
- Stewing
- Braising
- Pressure Cooking
- Steaming
- Blanching
- Sous Vide

Reasons for cooking food

Affects of Heating on Food:

Proteins

Fats

Carbohydrates

Water

Effect of changing pH

Effect of oxygen on food

Effect of enzymes on food

Use of microorganisms

Key words

Conduction	Denature	Plasticity
Convection	Coagulate	Gelatinisation
Radiation	Maillard Reaction	Caramelisation
		Dextrinisation

Food Preparation and Nutrition REVISION – Section D – Science of Cooking Food (Raising Agents)

Mechanical Raising Agents



Chemical Raising Agents

Physical Raising Agents

Biological Raising Agents

Emulsions/Emulsifyers

Foams

Food Preparation and Nutrition REVISION – Section C – Food Spoilage

Causes of Food Spoilage

- Microorganisms
- Chemical Reactions
- Enzymes
- Environmental Factors
- Insects and Rodents
- Time

Safe Storage of Food

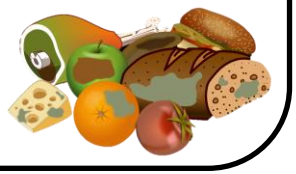
Fridge temperature:

Freezer Temperature:

Sources of Food Contamination

PHYSICAL	CHEMICAL	BIOLOGICAL
		

Signs of Food Spoilage



Food bacteria grow fastest in high risk food. Name five high risk foods.

1)

2)

3)

4)

5)

What are the 4 things that food poisoning bacteria need to grow?

KEY WORDS:

Contamination
Spoilage
Perishable
High-risk foods
Yeast
Mould
Bacteria
Pathogenic

Food Preparation and Nutrition REVISION – Section C – Food Spoilage

Personal Hygiene

Correct Food Safety

How to prevent Cross-contamination

Correct use of Equipment

Prevent Pests

Hazards and how to prevent them from occurring.

Step	Possible Hazards	Hazard Prevention
Buying and receiving food.		
Storing Food		
Preparing and Cooking Food		
Cooling Food		
Hot Holding Food		
Reheating Food		
Serving Food		

Food Preparation and Nutrition REVISION – Section C – Food Spoilage

The main principles of food preservation are:

PRINCIPLE How it works Example of Food

1. Heat

2. Freezing

3. Drying

4. Removing Air

5. Chemicals

6 Irradiation

What is food Preservation?

Functions of a food label

Visual checks on food:

Legally required labelling information

Information	Explanation
Product name	
List of ingredients	
Date Marking	
Preparation and storage instructions	
Manufacturer's name and address	
Place of origin	
Weight or volume	
Allergies	

Legally required labelling information

Date Marks on Packaging

Use by:

Best before:

Food Preparation and Nutrition REVISION – Section B – Food Provenance & Food Waste

Food Provenance

Food Security

Why does understanding food origin help consumers to make food choices?

Food Miles

Carbon Footprint

8 Ways to reduce Food Miles

1. Buy Local
2. Shop at Farmers Markets
3. Grow your own Vegetables
4. Eat Seasonally
5. Pick your own
6. Learn to cook from scratch
7. Walk or cycle to the shop
8. Shop less frequently

Intensive farming

Organic farming

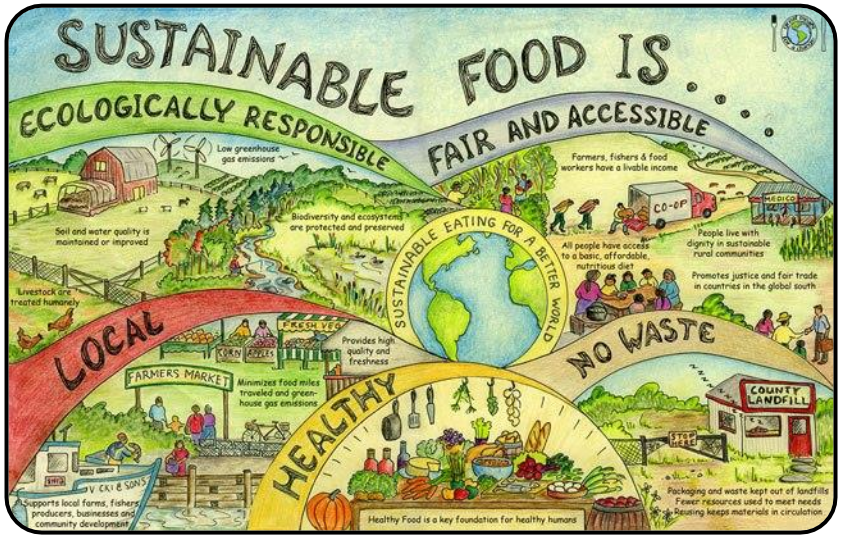
Sustainability

KEY WORDS:

Origin	Food Chain	Carbon Footprint
BSE	Traceability	Traditional Products
Biodegradable		

Food Preparation and Nutrition REVISION – Section B – Food Provenance

Food Sustainability



Three Pillars of Food Security

Principles of Food Sustainability

1.

2.

3.

4.

5.

6.

7.

Food Miles

Ways to reduce food miles

- .
- .
- .
- .
- .

Fair Trade

GM Foods

Food Waste

Impact of Food Insecurity

Why is there food insecurity?

Food Preparation and Nutrition REVISION – Section B – Cultures and Cuisines

Influences that shape world cuisine

Geography & Climate	People migrations	Faith & Religion	Economy

What is regional food?

Label the map below with examples of regional food

Annotate the below map with typical foods from around the world

Food Preparation and Nutrition REVISION – Section B – Technological Developments

Primary processing

Secondary processing (like bread)

Other methods:

Chemicals
Vinegar
Salt
Sugar

Processing milk

Pasteurised

Sterilised

UHT

Canning

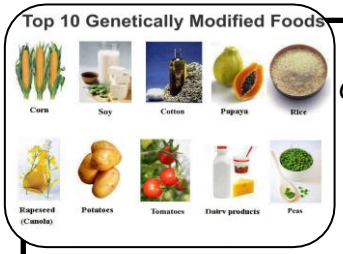
Chilling

Blast chilling and Cook Chill

MAP and Vacuum packaging

Environmental factors

Food Preparation and Nutrition REVISION – Section B – Technological Developments



Genetically Modified Organisms / Genetically Modified Foods

Functional Foods

Probiotics

Prebiotics

Plant - Stanols and sterols

Phytochemicals

Fortification

Additives

E numbers

Biotechnology / Nanotechnology

Unusual Foods

Molecular Gastronomy

KEY WORDS:

Nanotechnology	Genetic modification	Meat analogue
Modified Starch	Nutraceuticals	Plant Sterol
Prebiotics	Probiotics	

Food Preparation and Nutrition REVISION – Section B – Technological Developments

Animal welfare and production

Advantages of fish farming

Disadvantages of fish farming

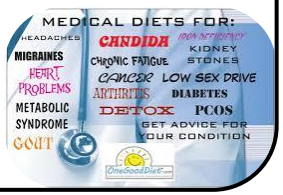
Food Preparation and Nutrition REVISION – Section B – Factors Affecting Food Choice

Availability

Cost

Culture & Religion

Medical Conditions



Seasonal Food

Ethical Food Choices

Food Preparation and Nutrition REVISION – Section B – Factors Affecting Food Choice

Labelling

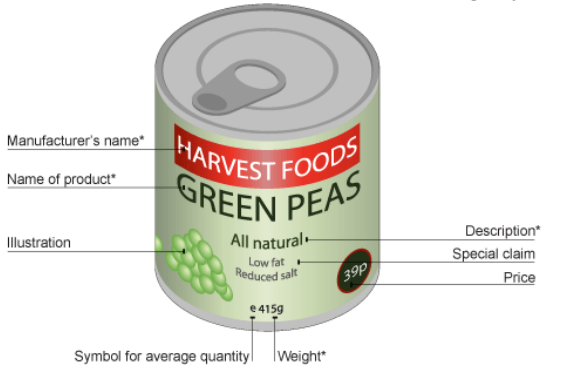
How does labelling affect food choice?

1.
2.
3.
4.
5.
6.
7.
8.

Required by law

1.
2.
3.
4.
5.
6.
7.
8.

* These are a legal requirement



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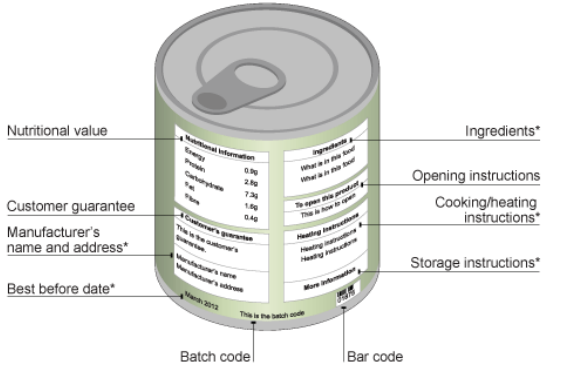
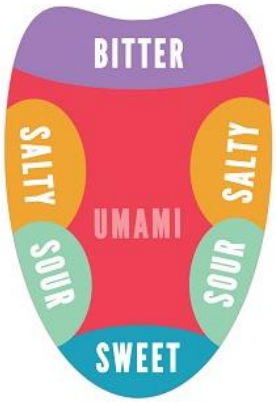


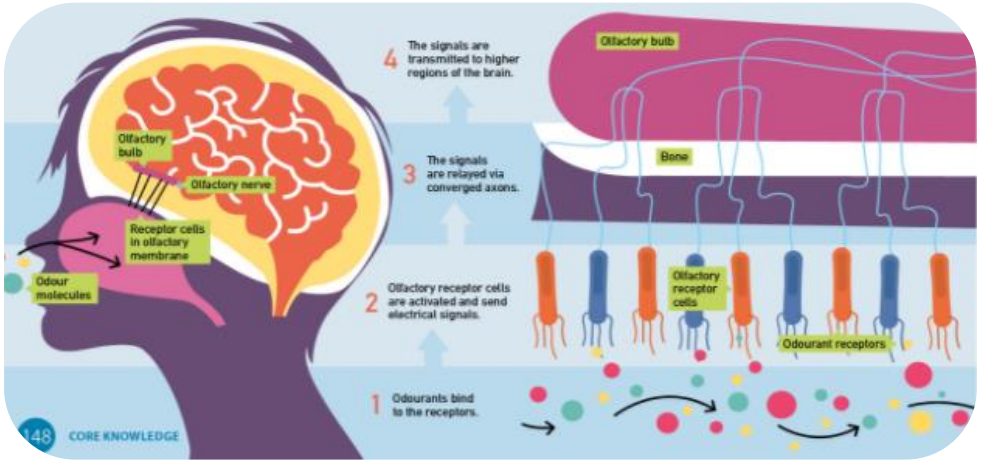
Food Preparation and Nutrition REVISION – Section C – Factors Affecting Food Choice

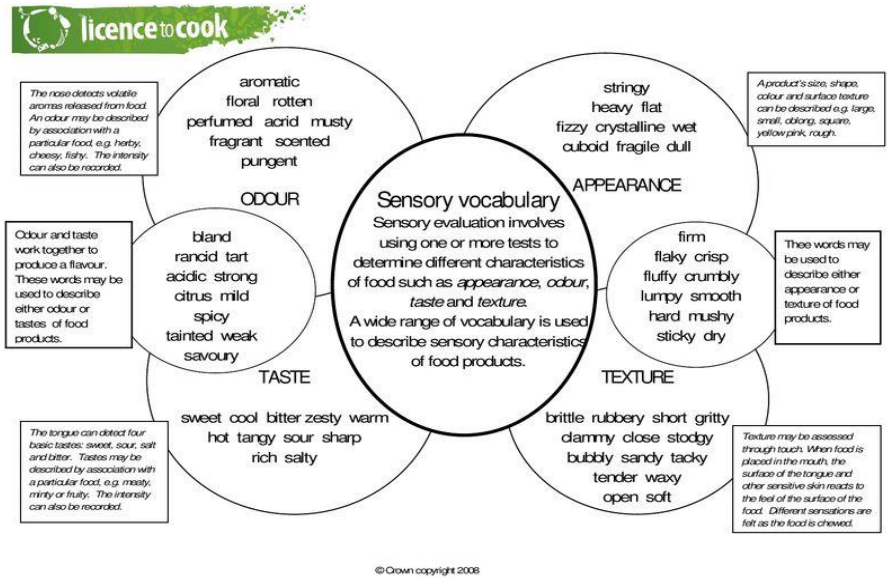
Sensory Perception

Taste



Smell





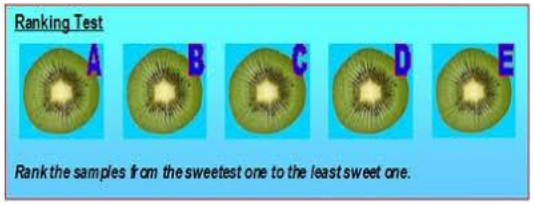
Food Preparation and Nutrition REVISION – Section C – Factors Affecting Food Choice

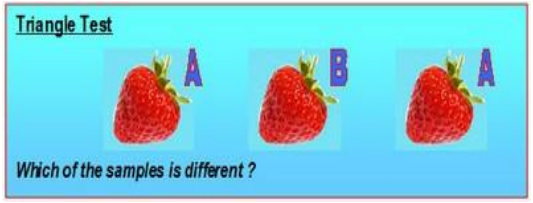
What is sensory Analysis?

How is sensory analysis used?

Setting up a sensory analysis tasting session

Types of Test





Rating Test

Profiling Tests

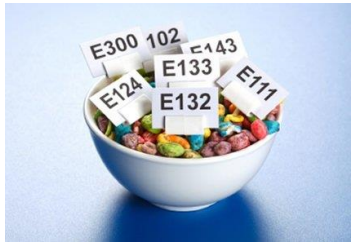
Food Preparation and Nutrition REVISION – Section B – Factors Affecting Food Choice

Convenience foods

Advantages	Disadvantages
✓	✗
✓	✗
✓	✗
✓	✗
✓	✗
✓	✗
✓	
✓	
✓	
✓	

Additives

E numbers



Preservatives

Antioxidants

Colours

Flavour Enhancers

Sweeteners

Anti-caking agents

Emulsifiers, stabilisers, gelling agents and thickeners

REVISION – Section 2 – Basic Mixtures and Recipes – Cake making

Cake	Proportion of Ingredients	Ratio	Raising Agent	Method	Outcome
Rubbed in Cake			**Chemical** **Mechanical**	Fat **rubbed** into the flour using fingertips. Additional ingredients are added Liquid added to **bind** together dry ingredients	
Melted Cake	Mixtures vary in ingredients. Usually a high sugar content	Varies depending on product	**Chemical**	Fat **melted** with the sugar and syrups. Dry ingredients added Liquids **bind** all the ingredients together	
Creamed Cake			**Chemical** **Mechanical**		
Whisked Sponge	50g Caster sugar 50g plain flour 2 eggs	No added fat	**Physical** **Mechanical**		








REVISION – Section 2 – Basic Mixtures and Recipes – Pastry making

Three Basic Rules for Pastry Making

1. Keep pastry cool.
2. Handle pastry lightly
3. Bake pastry at correct oven temperature.

- Cool hands, a cool worktop and water as cold as possible help to produce the best results. Use the fingertips, as they are the coolest part of the hands.
- Lift the flour well out of the bowl to incorporate as much air as possible when rubbing in the fat. Always mix with a round bladed knife.
- Add water gradually, a little at a time, to achieve the correct consistency for each type of pastry.
- Avoid adding more flour after the water. In making pastry try to incorporate as much cold air as possible so that in baking this air expands and produces light pastry.
- In Shortcrust this is done by rubbing in and light handling, and in Rough Puff and Flaky Pastry the air is incorporated by folding and rolling.
- Dust rolling pin with flour and work lightly to prevent sticking. Roll out quickly, always rolling away from you and not from side to side. Turn the pastry, not the rolling pin.
- Avoid stretching the pastry as this causes shrinkage in baking. Roll evenly and do not roll over the ends of the pastry.
- Always bake in a hot oven and for rich pastry a very hot oven.

Shortcrust pastry




Flaky Pastry





Choux Pastry

REVISION – Section C – Sauce making

Sauces are used to add:

- _____
- _____
- _____
- _____

Blended Sauces

Reduction Sauces

Emulsions

Roux Sauce

Roux definition:

Roux consistencies

Coating:

Pouring:

Qualities of a good Roux Sauce

1.
2.
3.
4.

Making a roux sauce (Gelatinisation)

Gravy
Tomato Sauce
Béchamel Sauce
Hollandaise Sauce
Mayonnaise
Salad Dressing

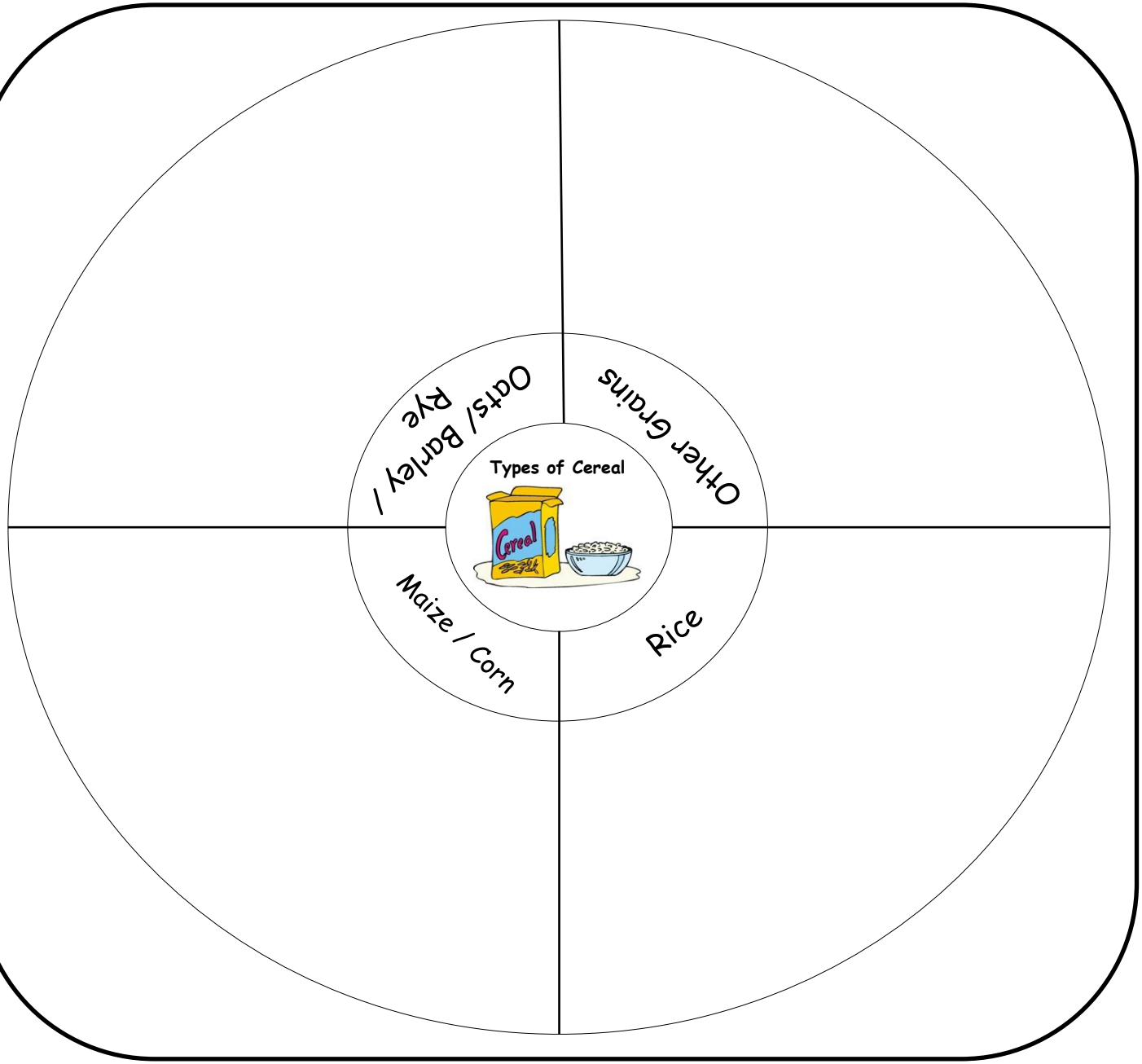
REVISION – Section 3 – Commodities – Cereals & Cereal Products

What are cereals?

Name some Staple Foods for different countries:

Nutritional Value?

Preventing Food Poisoning in Cereals?



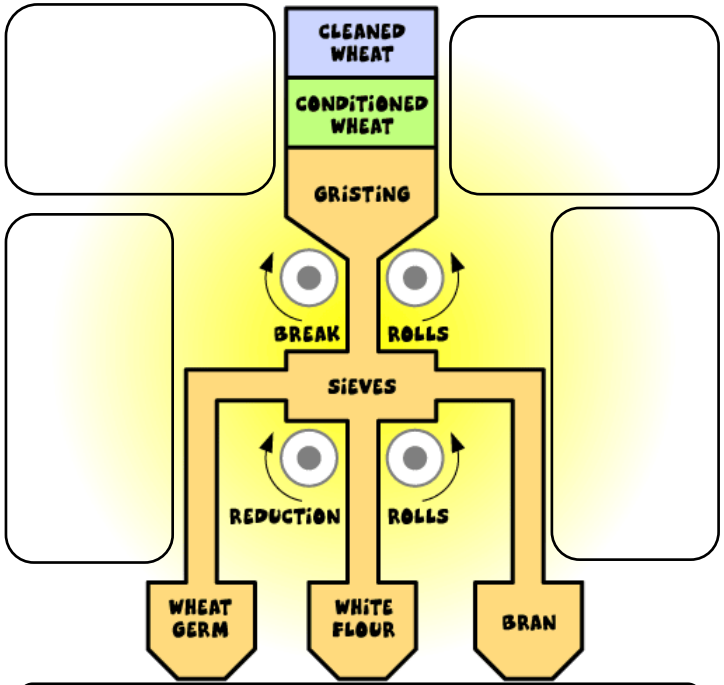
REVISION – Section 3 – Commodities – Cereals and Cereal Products - Wheat

Structure of a wheat grain?

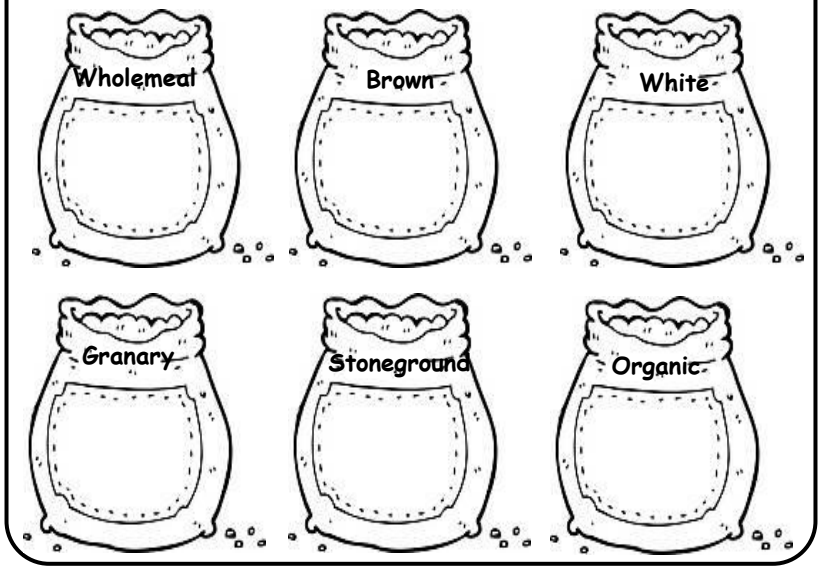
Key Terms

Cereal
Grain
Endosperm
Germ
Staple Food
Wholegrain
Primary Processing
Fortification

Primary Processing of wheat - Milling



Types of flour



Nutritional Value of wheat

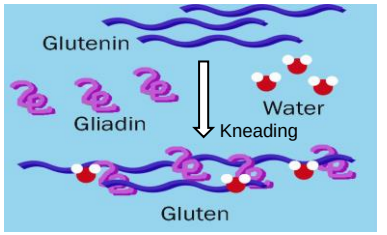
Wholemeal Flour and

Why is protein content in flour important?

Gluten Free Flour

Functional Properties of Wheat Flour

Gluten Formation



The effect of Heat

Dextrinisation

Gelatinisation

REVISION – Section 3 – Commodities – Cereals and Cereal Products - Bread

Nutritional Value of bread

bread making process Words – put in order and add meaning

Prove

Knead

Shaping

Knocking back

Problems in Bread Making

Types of bread:

Bread raising agent:

Ingredients used to make bread

Yeast

Strong bread flour

Warm Water

Salt

Sugar

Fat

Ascorbic acid

Science of Making Bread

1. Sifting Flour
2. Adding warm liquid
3. Mixing and Kneading dough
4. Proving Dough
5. Knocking back proved dough
6. Baking

REVISION – Section 3 – Commodities – Cereals and Cereal Products - Pasta

What is Pasta

Nutritional Value of Pasta

Pasta Shapes – Match the name to the pasta

Macaroni
Raviolli
Spaghetti
Penne
Fusilli
Tagliatelle
Rigatoni
Conchiglle
Cannelloni
Farfalle

Making Pasta

Forming a dough			
Kneading and rolling (laminating)			
Shaping			
Drying			

How can the colour and flavour of pasta be changed?

How should pasta be cooked?

How should pasta be stored?

Give examples of which sauces work best with specific pasta varieties?

REVISION – Section 3 – Commodities – Fruit & Vegetables

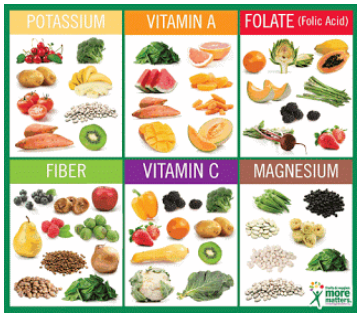
Fruit Type	Examples
Stone	
Hard	
Soft	
Citrus	
Tropical	
Dried	
Nuts	

Vegetable Type	Examples
Root	
Tuber	
Bulb	
Flower Head	
Leaves	
Pods & seeds	
Vegetable fruits	
Stems & shoots	
Mushrooms & fungi	
Sea Vegetable	

Shade in the vegetables that grow below the ground brown, above the ground green and in the sea blue.

Importance of fruit and veg in the diet.

Nutritional Content



How to include fruit and vegetables in the diet

REVISION – Section 3 – Commodities – Fruit & Vegetables

The seasons of fruit and vegetables

Processing Fruits and Vegetables

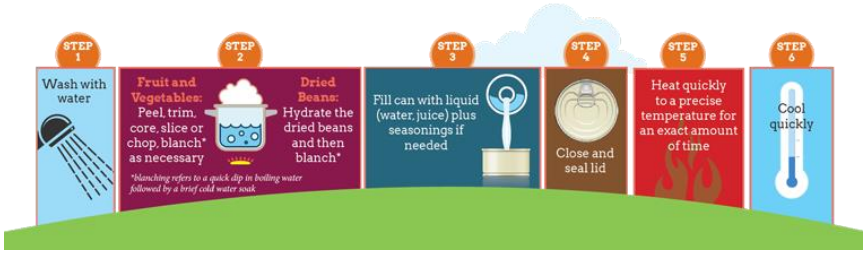
Drying

Pre-prepared fresh

UHT juiced

Freezing

Canning & Bottling



Choosing fruits and Vegetables

Storing Fruits and Vegetables

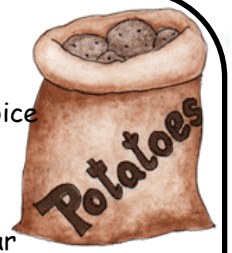
Why fruits and vegetables are cooked

Cooking Fruits and Vegetables

Rules to remember when cooking fruits and vegetables

REVISION – Section 3 – Commodities – Fruit & Vegetables

Potatoes



There are many different varieties of potatoes grown in the UK, e.g King Edwards, Maris Piper. Sweet potatoes are also a popular choice as an alternative to traditional potatoes.

The part of the potato plant we eat is called the _____. Potato tubers can come in a variety of colours, although we are most familiar with white and red.

The variety of potato used when preparing meals and dishes can result in very different textures and outcomes.

Cooking Method	Suitable variety

Nutritive Value

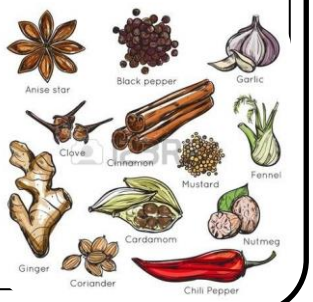
Changes during Cooking

Storage

Herbs and Spices

Herbs

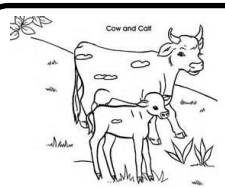
Spices



REVISION – Section 3 – Commodities – Milk and Dairy Foods

Nutritional Content of milk

Primary Processing of Milk



Dairy cows need to have given birth to calves before they can start producing milk.

Storage of Milk

Secondary Processing of Milk

Pasteurised Milk	Homogenised Milk	Sterilised Milk	Ultra Heat Treated Milk (UHT)

Processed Milks

Evaporated Milk	Condensed Milk	Dried Milk

Types of milk (Put in high/med/low)

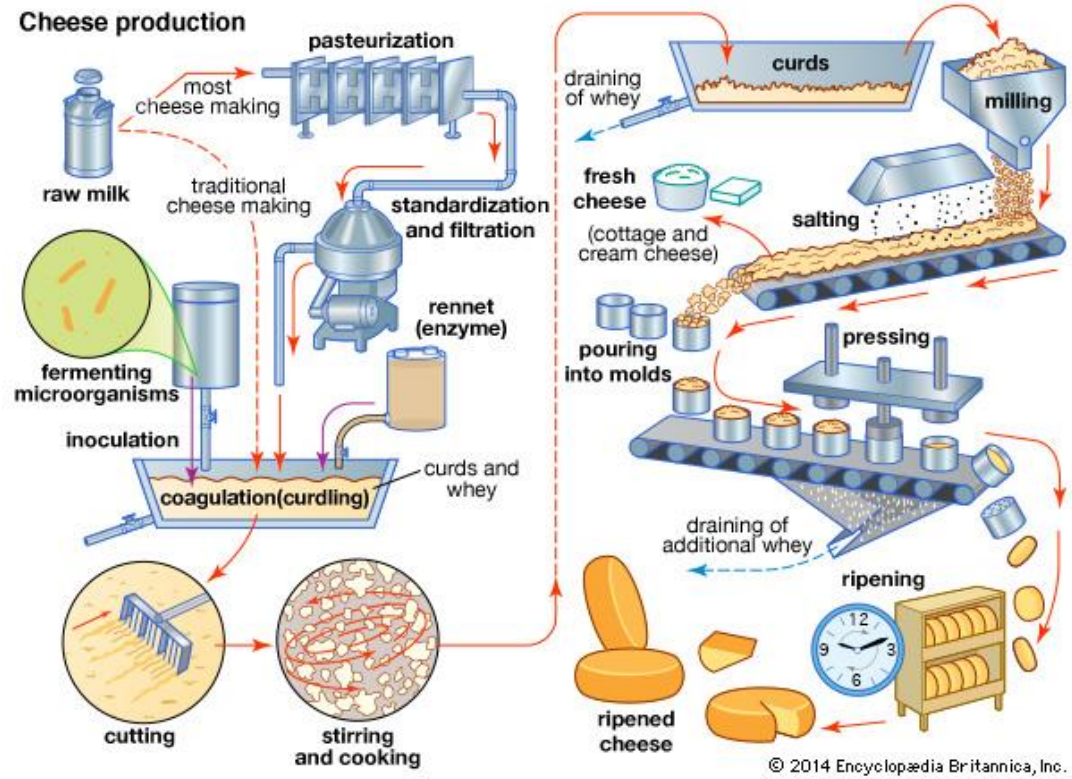
Milk Type	Fat % per 100g
Channel Island milk	
Whole milk	
Semi-skimmed milk	
1% Milk	
Skimmed milk	
Filtered milk	

Lactose Intolerance & Milk Alternatives

REVISION – Section 3 – Commodities – Cheese

Nutritional Value of cheese

How Cheese is made



Types of Cheese

Categories	Examples
Fresh	
Soft	
Semi-hard	
Hard	
Blue	
Processed	

Uses of Cheese

Effect of heat on cheese

How to store cheese

REVISION – Section 3 – Commodities – Yogurt & Cream

Yogurt

Nutritional Value of Yogurt

How is yogurt made?

Some yoghurts are processed to give extra health benefits

Live Yoghurt

Probiotic Yogurts

Bio Yogurts

Uses of Yogurt

Cream

Nutritional Value of Cream

How is cream produced?

What are the differences in these creams below?

Clotted Cream

Whipping Cream

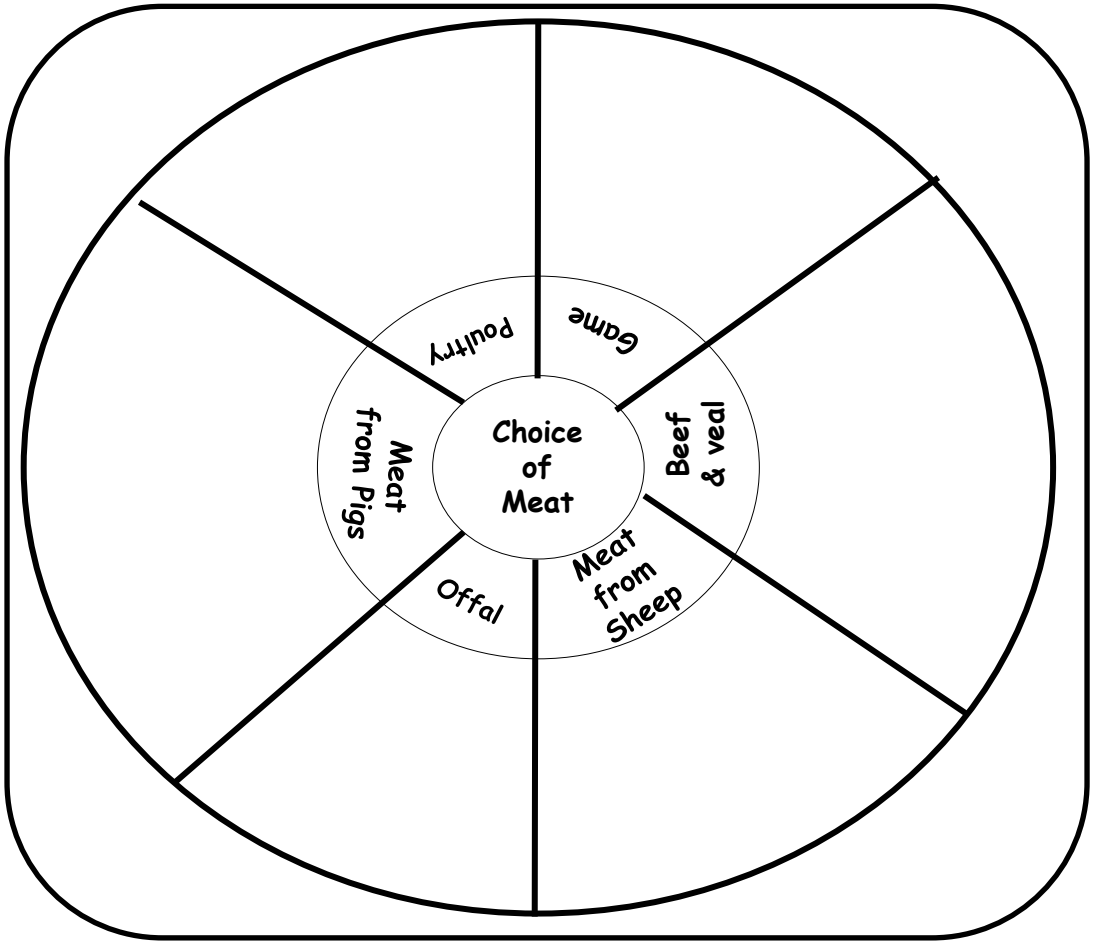
Soured Cream

Long Life Cream

Crème Fraiche

Uses of Cream

REVISION – Section 3 – Commodities – Meat & Poultry



Nutritional value of meat and poultry

PROTEIN:

FAT:

MINERALS:

VITAMINS:

Reducing fat in meat

Ways of cooking meat:

Animal Welfare

RSPCA ASSURED

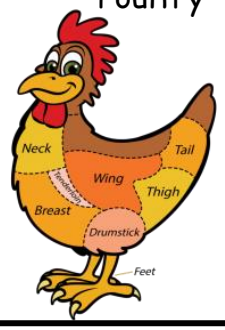
ASSURED FOOD STANDARDS

REVISION – Section 3 – Commodities – Meat & Poultry

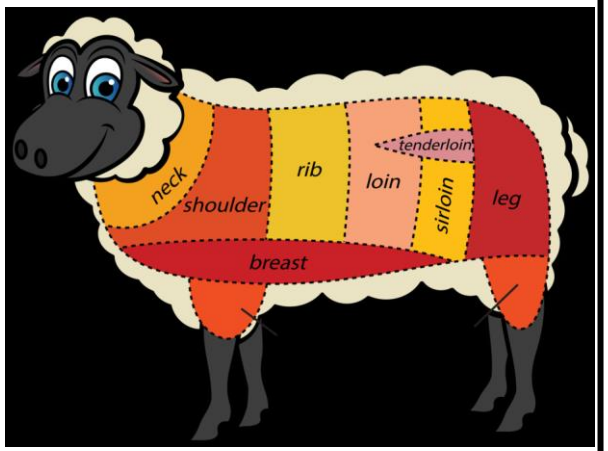
Choosing Meat and Poultry

List cuts of meat that are – fast, medium, or slow cooking in each box

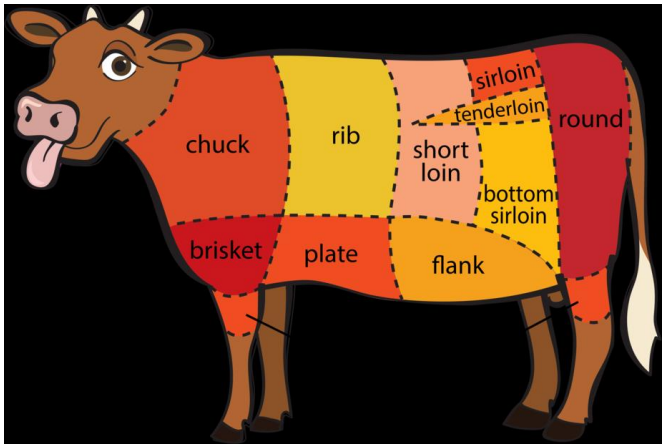
Poultry



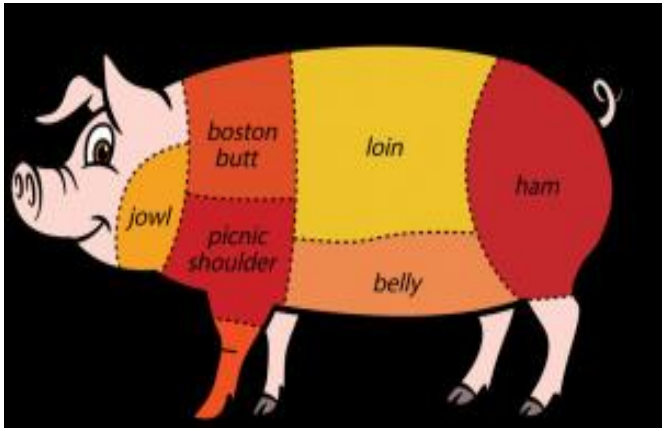
Lamb



Beef

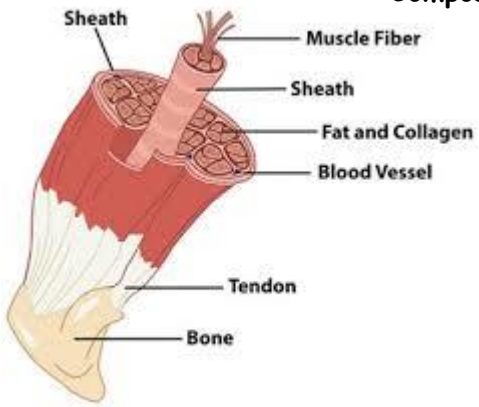


Pork (Bacon / Gammon / Ham)



REVISION – Section 3 – Commodities – Meat & Poultry

Composition of meat



Preparing meat before cooking

Tenderising

Boning

Tying

Batting

Effect of cooking on Meat

Why is meat Cooked?

- .
- .
- .
- .
- .

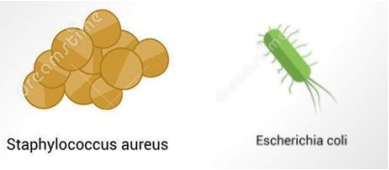
Chemical changes that occur during cooking

- .
- .
- .
- .
- .

Meat Products

REVISION – Section 3 – Commodities – Meat & Poultry

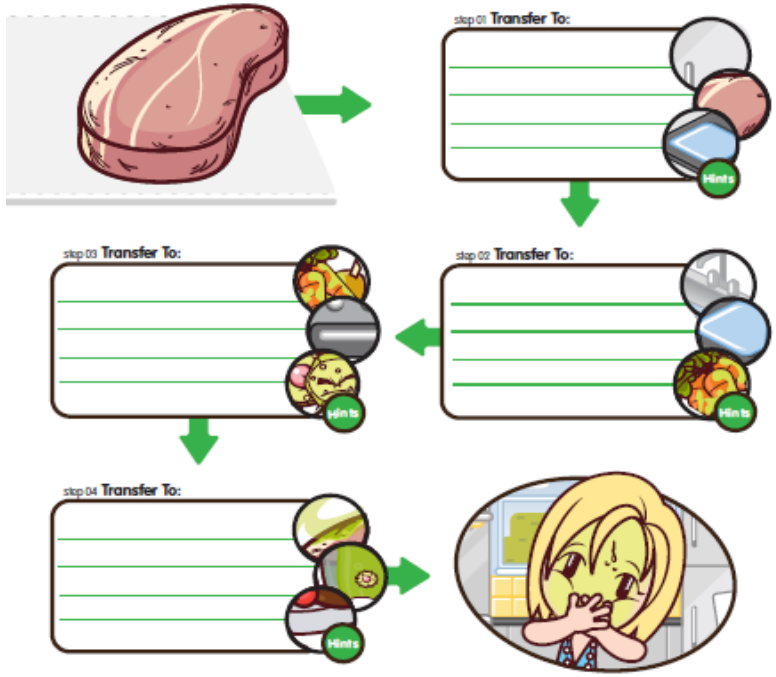
Common bacteria found in meat



How can these be prevented?

Buying meat

Cross- Contamination



Storing meat

Preparing meat

Cooking meat

Food Poisoning

REVISION – Section 3 – Commodities – Fish

Classification of fish

Fish are classified in two ways:

1. **According to their origin**
   - **Freshwater fish**, e.g. salmon, trout
   - **Seawater fish**, which are further divided into:
     - **Pelagic** fish (which swim near the surface), e.g. herring, pilchard, mackerel.
     - **Demersal** fish (which swim near the bottom), e.g. plaice, cod, hake
2. **Their fat content and type**

Oily Fish

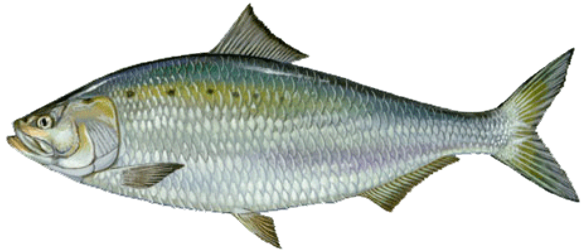
White Fish

Shellfish

Choice of fish

Sustainability of fishing

Quality and Freshness when buying fish

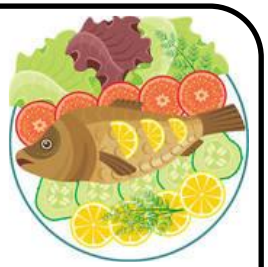


Buying fresh fish

Storing and preparing fresh fish

REVISION – Section 3 – Commodities – Fish

Cooking Fish



Preparation before cooking:

Marinating

Coating

Methods of cooking

Grilling

Shallow Frying

Deep Frying

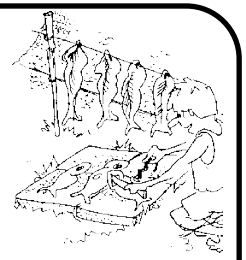
Steaming

Poaching

Baking

Microwaving

Preserving Fish



Processing Fish

fish fingers

Composition of Fish

Nutritional Value of Fish

Protein	**Fat**
Vitamins	Minerals

REVISION – Section 3 – Commodities – Eggs

Nutritional Content and Structure

Uses of eggs in cooking:

Barn Eggs

Caged Eggs

Free Range Eggs

Organic Eggs

Coagulation explained:

Methods of cooking

Baking

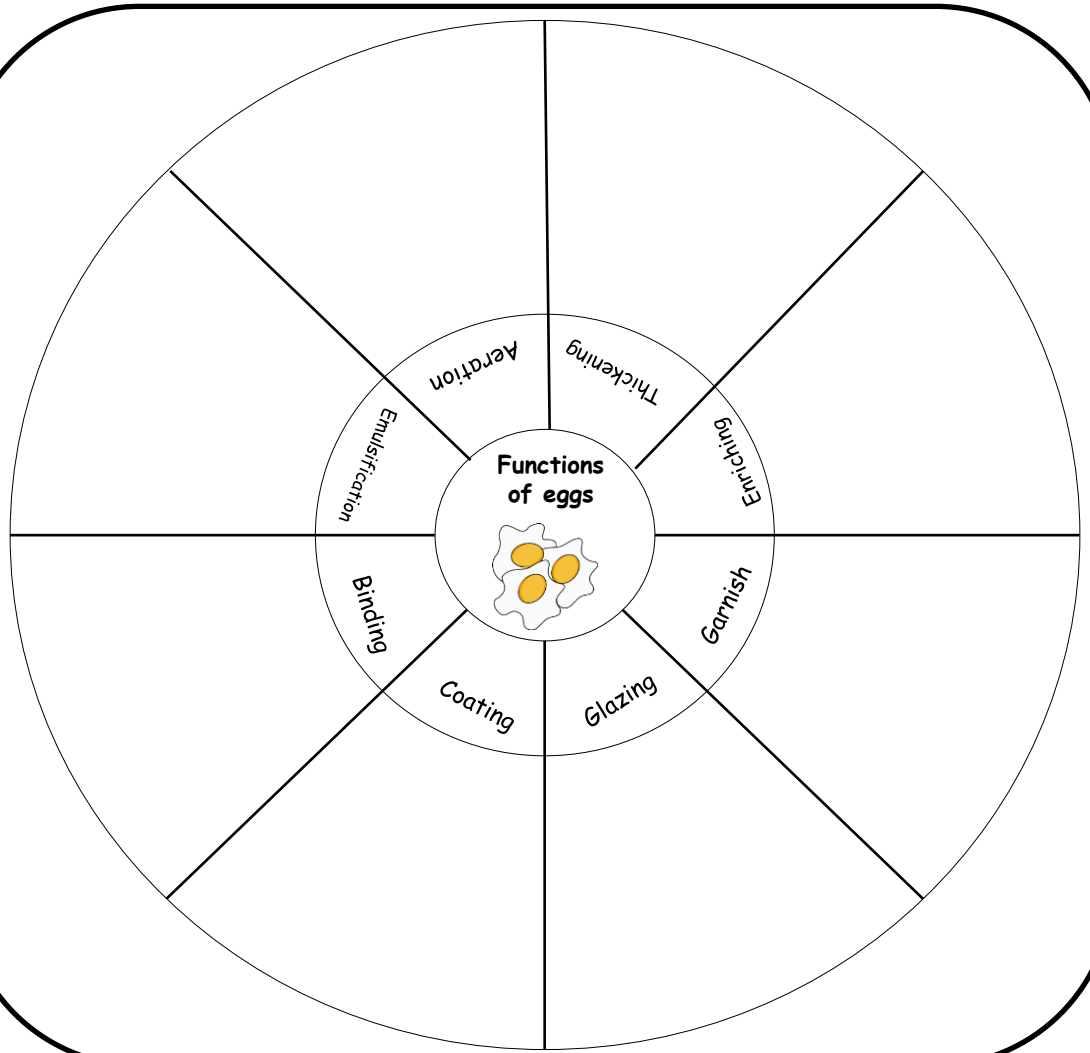
Frying

Boiling

Poaching

Scrambling

REVISION – Section 3 – Commodities – Eggs



Changes during preparation and cooking

Storage

1.

2.

3.

4.

5.

Processed Eggs

Egg Allergy

REVISION – Section 3– Commodities– Pulses and Beans

What are beans, nuts and seeds?

Nutritional value of pulses

Most popular pulses are:.

Peas

Lentils

Baked Beans

Chick Peas

Using pulses in the diet

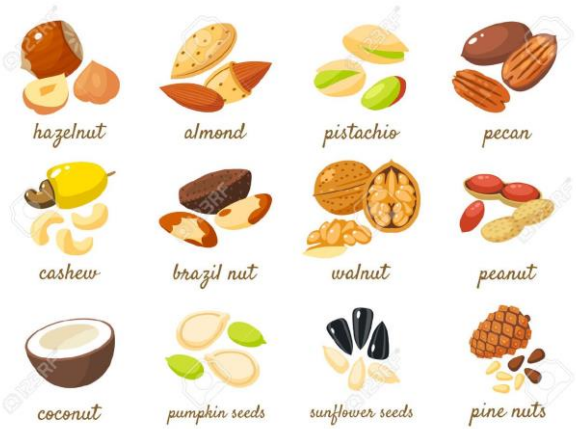
Dishes that use beans:

Why are pulses good for vegetarians:

Types of beans:

REVISION – Section 3– Commodities– Nuts & Seeds

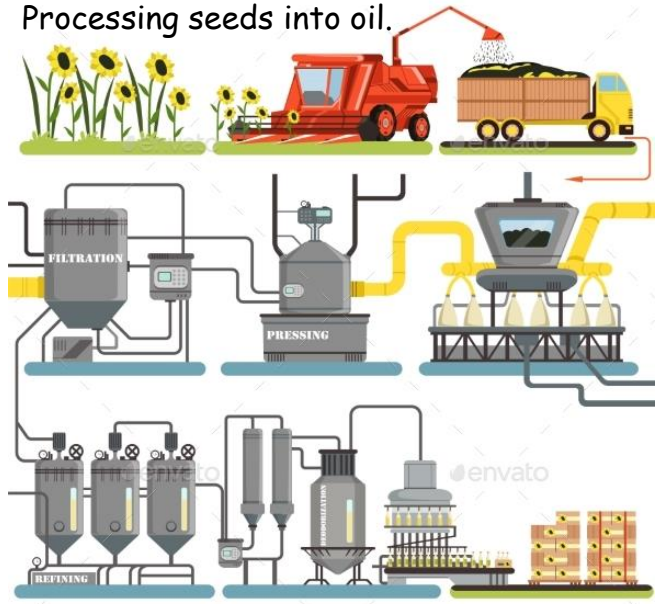
Using nuts in the diet.



Nutritional Value of Seeds

Uses of seeds in the diet

Processing seeds into oil.



Nutritional Value of Nuts

Nut Allergy

REVISION – Section 3– Commodities– Alternative Protein Foods

What are alternative protein foods?

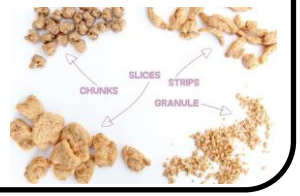
Soya

Nutritional Value

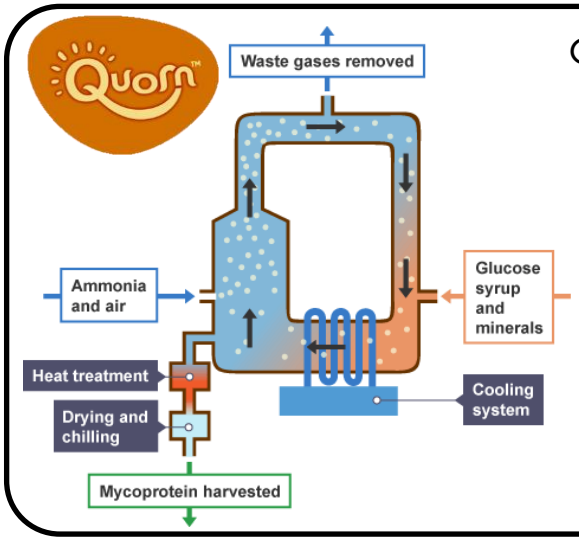
Products made from soya

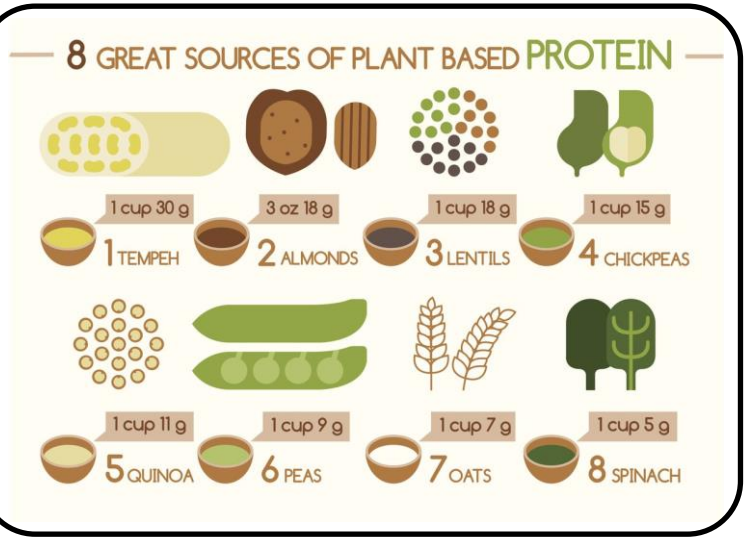
Tofu.

Textured Vegetable Protein



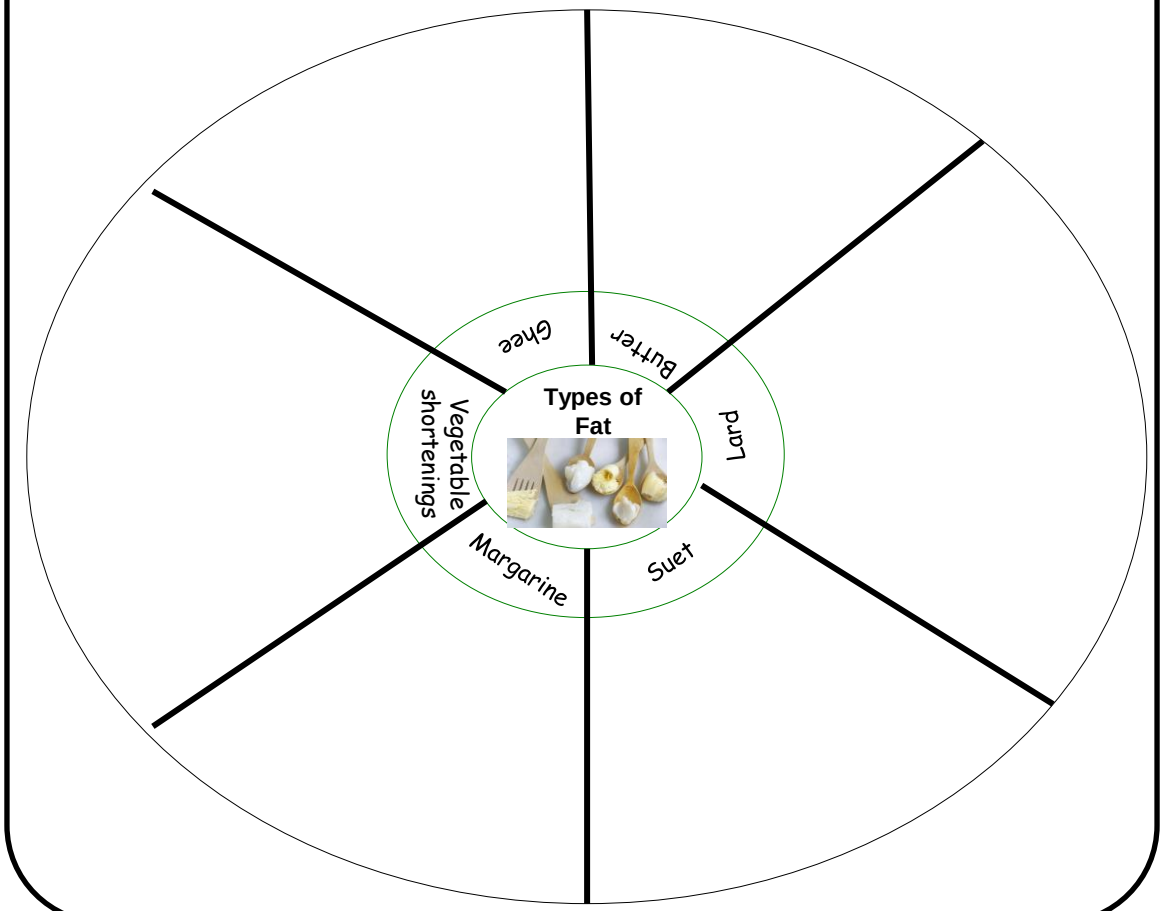
Quorn.

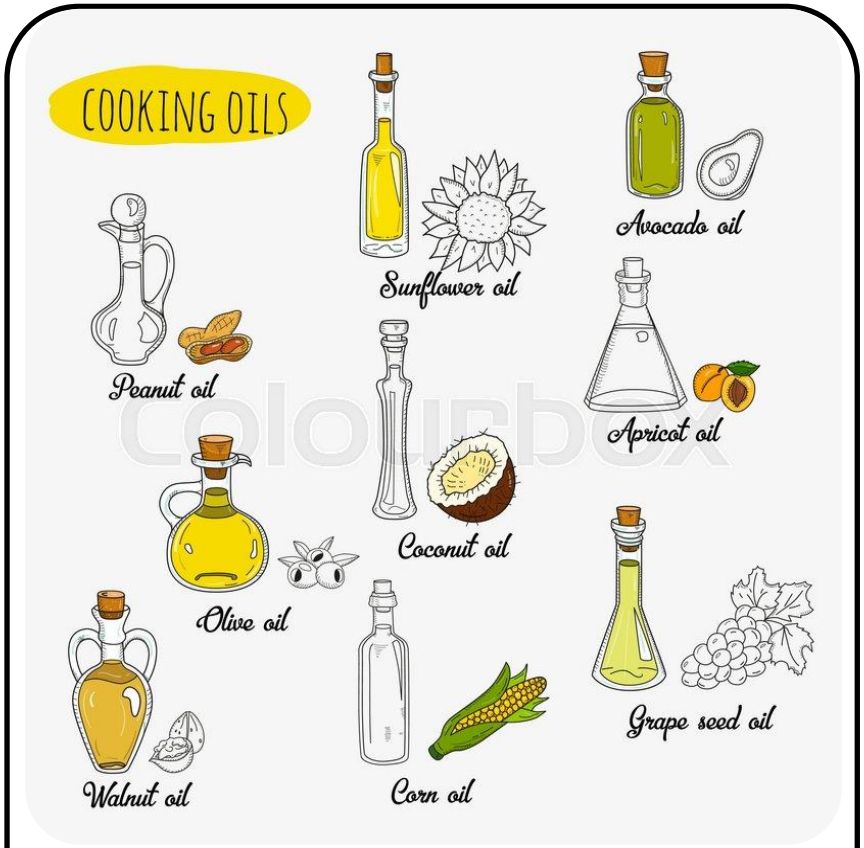




REVISION – Section 3– Commodities– Butter, Oil & Margarine

Fats and Oils





What would you use the different oils for:

REVISION – Section 3– Commodities– Butter, Oil & Margarine

Examples of fats and oils

Saturated Fat

Unsaturated Fats and Oils

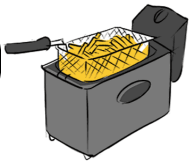
Hydrogenation of fats

Tips for reducing fat in the diet

REVISION – Section 3– Commodities– Butter, Oil & Margarine

Functions of Fats and Oils

Shortening



Adds colour and shine

Cooking medium

Extends Shelf-life

Prevents lumps

Emulsions

Adds flavour

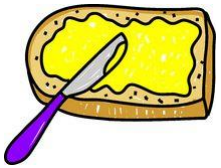
Improves texture

Properties of Fats and Oils

Effect of heat on fats and oils

Rancidity

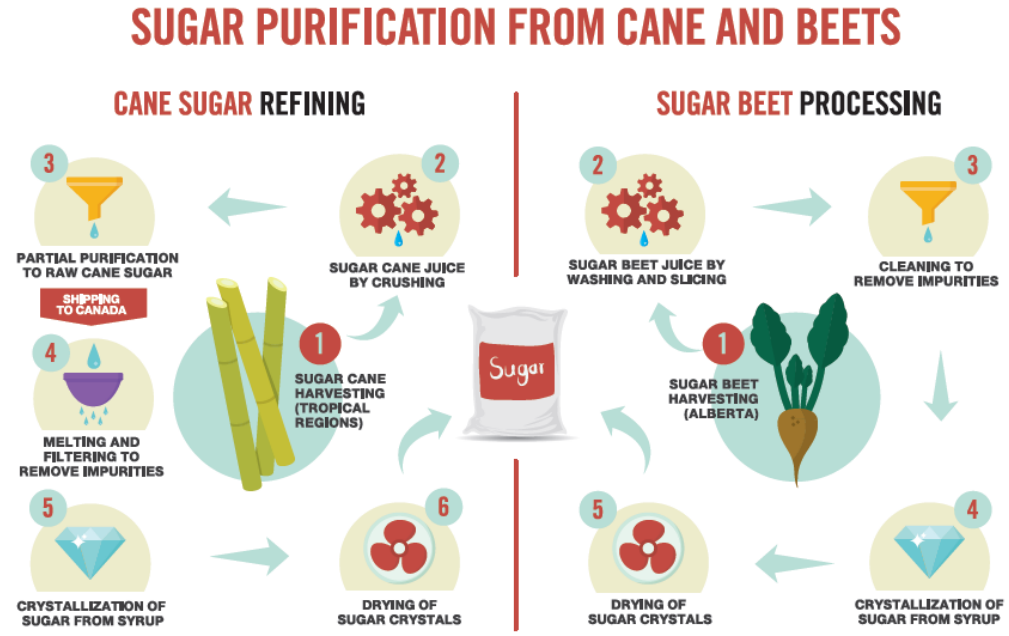
Plasticity



Aeration

REVISION – Section 3 – Commodities – Sugar & Sweeteners

Sugar



Types of sugar

- White sugar
- Brown Sugar
- Syrups

Honey

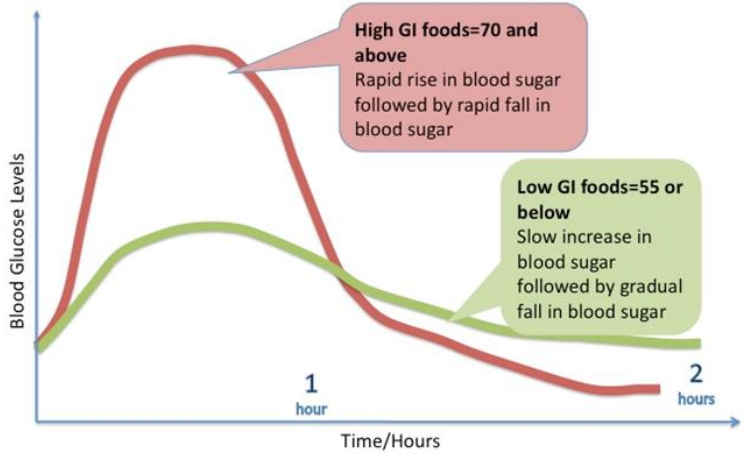
Artificial Sweeteners

Acesulfame potassium	Saccharin	Sorbitol	Tagatose (pre-sweet)
Aspartame	Sucralose	Stevia-based	Xylitol

REVISION – Section 3 – Commodities – Sugar & Sweeteners

Uses of sugar in recipes:

High GI vs Low GI Foods

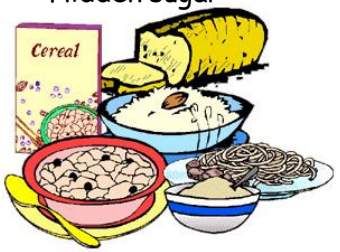


Reducing Sugar Intake

Nutritional Value of Sugar

Empty Calories

Hidden sugar



Nutritional labelling

Sugar Free

Reduced Sugar

No added sugar

Low Sugar

REVISION – Section 3 – Commodities – Sugar & Sweeteners

Function of sugar

Adding Sweetness

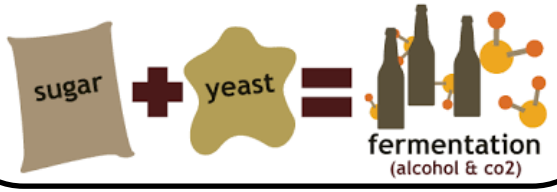
Adding Texture

Adding Colour

As a raising agent

For preservation

Fermentation



Coagulation

Foaming

Enzymic Browning