

# Year 9 Cooking and Nutrition Knowledge Organiser - Healthy Eating

## The Eatwell Guide Advice

### Fruit and Vegetables

- Should make up over a third of the food we eat each day.
- Aim to eat at least [5 portions](#) of a variety of fruit and veg each day. Choose from fresh, frozen, tinned, dried or juiced.
- Fruit juice and smoothies should be limited to no more than a combined total of 150ml a day.
- Fruit and vegetables are a good source of vitamins, minerals and fibre.

### Starchy Food

- Starchy food should make up just over a third of the food we eat. Choose higher fibre wholegrain varieties, such as wholewheat pasta and brown rice, or simply leave skins on potatoes.
- There are also higher fibre versions of white bread and pasta.
- Starchy foods are a good source of energy and the main source of a range of nutrients in our diet.

### Dairy and Alternatives

- Milk, cheese, yoghurt and fromage frais are good sources of protein and some vitamins, and they're also an important source of calcium, which helps [keep our bones strong](#).
- Try to go for lower fat and lower sugar products where possible, like 1% fat milk, reduced-fat cheese or plain low-fat yoghurt.

### Beans, pulses, fish, eggs, meat and other proteins

- These foods are good sources of protein, vitamins and minerals. Pulses, such as beans, peas and lentils, are good alternatives to meat because they're lower in fat and higher in fibre and protein, too.
- Choose lean cuts of meat and mince, and eat less red and processed meat like bacon, ham and sausages.
- Aim for at least 2 portions of fish every week, 1 of which should be oily, such as salmon or mackerel.

### Oils and Spreads

- Unsaturated fats are healthier fats and include vegetable, rapeseed, olive and sunflower oils.
- Remember all types of fat are high in energy and should be eaten sparingly.

### Hydration

- Water, lower fat milks and lower sugar or sugar-free drinks, including tea and coffee, all count.
- Fruit juice and smoothies also count towards your fluid consumption, but they contain free sugars that can damage teeth, so limit these drinks to a combined total of 150ml a day.

### Foods high in sugar, salt or saturated fat

- Foods including chocolate, cakes, biscuits, sugary soft drinks, butter, ghee and ice cream are not needed in our diet, so should be eaten less often and in smaller amounts.



**The Eatwell Guide** applies to most people regardless of weight, dietary restrictions/ preferences or ethnic origin. However, it doesn't apply to children under 2 because they have different nutritional needs. Between the ages of 2 and 5, children should gradually move to eating the same foods as the rest of the family, in the proportions shown on the Eatwell Guide. Anyone with special dietary requirements or medical needs might want to check with a registered dietician on how to adapt the Eatwell Guide to meet their individual needs.

## The 8 Tips for Healthy Eating

These 8 practical tips cover the basics of healthy eating and can help you make healthier choices.

**2. Eat lots of fruit and veg** - A portion of fresh, canned or frozen fruit and vegetables is 80g. A portion of dried fruit (which should be kept to mealtimes) is 30g.

**1. Base your meals on starchy carbohydrates** - They contain more fibre than white or refined starchy carbohydrates and can help you feel full for longer. Try to include at least 1 starchy food with each main meal. Keep an eye on the fats you add when you're cooking or serving these types of foods because that's what increases the calorie content - for example, oil on chips, butter on bread and creamy sauces on pasta.

**3. Eat more fish** - including a portion of oily fish. Fish is a good source of protein and contains many vitamins and minerals. Aim to eat at least 2 portions of fish a week, including at least 1 portion of oily fish. Oily fish are high in omega-3 fats, which may help prevent heart disease.

**4. Cut down on saturated fat and sugar** - See overleaf for info

**5. Eat less salt** - Eating too much salt can raise your blood pressure. People with high blood pressure are more likely to develop heart disease or have a stroke. Even if you do not add salt to your food, you may still be eating too much. About three-quarters of the salt you eat is already in the food when you buy it, such as breakfast cereals, soups, breads and sauces. Adults and children aged 11 and over should eat no more than 6g of salt (about a teaspoonful) a day. Younger children should have even less.

**6. Get active and be a healthy weight** - As well as eating healthily, regular exercise may help reduce your risk of getting serious health conditions. It's also important for your overall health and wellbeing. Being overweight or obese can lead to health conditions, such as type 2 diabetes, certain cancers, heart disease and stroke. Being underweight could also affect your health.

**7. Don't get thirsty** - You need to drink plenty of fluids to stop you getting dehydrated. The government recommends drinking 6 to 8 glasses every day. This is in addition to the fluid you get from the food you eat.

**8. Don't skip breakfast** Some people skip breakfast because they think it'll help them lose weight. But a healthy breakfast high in fibre and low in fat, sugar and salt can form part of a balanced diet, and can help you get the nutrients you need for good health. A wholegrain lower sugar cereal with semi-skimmed milk and fruit sliced over the top is a tasty and healthier breakfast.

# Year 9 Cooking and Nutrition Knowledge Organiser -

## ENERGY

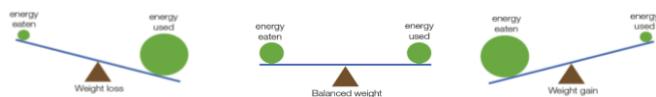
- Different people need different amounts of energy.
- The amount needed to maintain a healthy weight depends on your **basal metabolic rate (BMR)**, which is the minimum amount of energy your body uses to maintain the basic bodily functions like breathing and your heart beat
- Some activities use more energy than others. The more active you are, the more energy your body uses up.
- We all need energy to grow, stay alive, keep warm and be active.
- Energy is measured in units of kilocalories (kcal) or kilojoules (kJ).
- Energy is provided by the carbohydrate (3.75 kcals per gram), protein (4k cals per gram) and fat (9 kcals per gram) in the food and drinks we consume.
- Different food and drinks provide different amounts of energy. You can find this information on food labels when they are present.

## Energy density

- The amount of energy a food contains per gram is known as its **energy density** so we can describe fat as more energy dense than protein or carbohydrate.
- Foods with fewer calories per gram such as fruits, vegetables, low fat soups, lean protein and fibre-rich foods have a relatively low energy density.
- Foods with a high fat and/or low water content such as chocolate, cakes, biscuits, deep fried foods and snacks, butter and oils, have a relatively high energy density

## Energy Balance

As fats are high in calories (Kcals) we need to make sure we are eating the right amounts of them, and /or doing the right amount of exercise to burn excess fat off. Fat can be stored on the body if too much is consumed.



## Healthy Eating

### Fatty Foods

**Fats found in foods are typically saturated or unsaturated fats. Most foods usually contain a mixture of both types. We would normally describe a food as being high in saturated or unsaturated depending on which they are a rich source of.**

- **Saturated fats** – saturated fats are mainly animal foods (e.g. red meat, butter, cream, hard cheese, eggs). \*Too much saturated fats have been linked to high blood cholesterol which causes an increase risk of heart disease, type 2 diabetes and obesity.
- **Unsaturated fats**- are found in animal and plant foods e.g. oily fish, nuts and seeds. \* Unsaturated fats are healthier than saturated fats. They may lower blood cholesterol levels and reduce the risk of heart disease.

### Beans, Pulses, Fish, Eggs, Meat and Other Proteins

- These foods are sources of protein, vitamins and minerals, so it is important to eat some foods from this group. Beans, peas and lentils (which are all types of pulses) are good alternatives to meat because they're naturally very low in fat, and they're high in fibre, protein, vitamins and minerals. Pulses, or legumes as they are sometimes called, are edible seeds that grow in pods and include foods like lentils, chickpeas, beans and peas.
- Other vegetable-based sources of protein include tofu, bean curd and mycoprotein; all of which are widely available in most retailers.
- Aim for at least two portions (2 x 140g) of fish a week, including a portion of oily fish. Most people should be eating more fish, but there are recommended limits for oily fish, crab and some types of white fish.
- Some types of meat are high in fat, particularly saturated fat. So when you're buying meat, remember that the type of cut or meat product you choose, and how you cook it, can make a big difference. To cut down on fat: choose lean cuts of meat and go for leaner mince, cut the fat off of meat and the skin off of chicken, try to grill meat and fish instead of frying and have a boiled or poached egg instead of fried. If you eat more than 90g of red or processed meat per day, try to cut down to no more than 70g per day. The term processed meat includes sausages, bacon, cured meats and reformed meat products.

## Sugar

Cutting down on sugar Regularly consuming foods and drinks high in sugar increases your risk of obesity and tooth decay.

### **Age - Recommended maximum free sugars intake - Sugar cubes**

4-6 years No more than 19g/day 5 cubes  
7-10 years No more than 24g/day 6 cubes  
From 11 years, including adults No more than 30g/day 7 cubes

Many packaged foods and drinks contain surprisingly high amounts of free sugars including some breakfast cereals, yoghurts and fruit juice drinks. Use the food label to help you choose foods lower in sugar. Swap sugary breakfast cereals for plain cereals such as plain porridge, wholewheat biscuit cereals, shredded wholewheat or no added sugar muesli. Cereal bars often contain high levels of **free sugars**\* too, so remember to check the label.

Regularly consuming foods and drinks high in sugar increases your risk of obesity and tooth decay. Sugary foods and drinks are often high in energy (measured in kilojoules or calories), and if consumed too often can contribute to weight gain. They can also cause tooth decay, especially if eaten between meals.

**Free sugars** are any sugars added to foods or drinks, or found naturally in honey, syrups and unsweetened fruit juices and smoothies. This is the type of sugar you should be cutting down on, rather than the sugar found in fruit and milk.



Foods high in fat, sugar and salt sit outside the Eatwell Guide as they are not necessary as part of a varied and balanced diet.

**MEAT COMPOSITION**

Meat muscle is made up of bundles of muscle fibres held together by creamy white connective tissue.

Tendons join the muscle (made up of bundles of muscle fibres, surrounded by connective tissue) to the bones of animals.



Individual muscle fibres are made up of cells which contain the proteins actin and myosin. In live animals, actin and myosin work together to make the muscle contract and relax.

Muscle fibres are very small – and can only be seen under a microscope. The length of muscle fibres varies.

**Fine muscle fibres**

These tend to come from the muscles of young animals, or in older animals from the muscles which do least work. They contain little collagen and are tender even when cooking times short, e.g. grilling.

**Thick muscle fibres**

These tend to be from older animals and also muscles which do the most ‘work’ – such as neck and shin. They have more connective tissue to prevent muscle damage.

This type of meat is tougher and needs long, **slow cooking with moisture** to make it tender, e.g. casserole. Fat is found in meat underneath the skin (subcutaneous fat) and between the muscles (intermuscular fat) and is a creamy-white colour (visible fat)

**SEASONALITY**

Meat British beef, lamb and pork are available all year round. Beef is popular throughout the year. Lamb is seasonal with its flavour developing from spring through to autumn. Pork sales tend to increase in the summer, due to barbecues.

Fruit and Vegetables Foods are usually harvested when they are at their peak and, typically, have the most flavour and nutrients, so eating seasonal fruit and vegetables tends to be tastier, healthier and better for the environment. Eating seasonally can also help you to include a wide variety of fruit and vegetables in your diet.

**Food Provenance**

**RICE**

- For thousands of years, rice has been a staple food source for many Asian countries like China, Japan and India. A grain of rice is a seed from a special kind of grass called oryza sativa. This grass needs lots of rain as it grows, and then dry conditions before it is harvested. Rice is grown in water-logged fields known as ‘rice paddies’ across Asia, but also in a few European countries, like Italy and Spain. Once the rice is harvested, the grains are shaken from the grasses, and their rough brown husks removed.
- A grain of rice is made up of three parts: the endosperm, which is full of starchy carbohydrates that make up the majority of the grain; the germ, which contains lots of antioxidants; and the outer coating, or bran, which is full of fibre and vitamins.
- FOOD SAFETY** Rice is a starchy food, and the bacteria that cause food poisoning absolutely love it (See *How to handle food safely*). Bacteria feed off the starch and with warmth and time will multiply, so the best way of preventing that from happening is to not leave rice hanging around for too long. If you are cooking rice, don't cook it too far in advance and keep it warm before you serve it. If you have leftover rice, always cool it down, then cover it and keep it in the fridge. Use it up within a day. When reheating rice, make sure it's hot all the way through before you eat it so any lingering bacteria that may have grown on it are killed. © Jamie Oliver.

**Lacto-ovo vegetarians** will eat dairy products, eggs and all plant foods but no animal food where the animal was killed to produce it.

**Lacto Vegetarians** eat dairy and plant foods but not eggs.

**Vegans** eat plant foods only and nothing derived from animals

**The Vegetarian Society** is the place to go for everything you want to know about the world of vegetarian food. Our mission is to inspire, inform and enable people to be vegetarian.



**GROWN** - Food is grown in an environment where light, food (soil) and water are available to them so they can grow and photosynthesise. Some farmers use large plastic tunnels to grow crops so that they are protected from the weather. Carrots and strawberries are often grown in polytunnels.

**REARED** - There are many different breeds of animals which are reared, each with their own features/qualities.

**Cattle (beef)** - Cows are reared on dairy farms to produce milk. A dairy cow needs to give birth to a calf in order to produce milk. Most British dairy cows eat grass during the summer and silage (dried grass or maize) in the winter.

**Pigs (pork)** - originally, pigs were bred to consume waste products, fertilise the land and provide essential meat.

**Sheep (lamb)** - there are over 33 million sheep in the UK and there are 90 different breeds and crosses.

**Poultry (chicken/turkey)** - nearly a billion poultry birds are reared in the UK each year and 95% of these are grown indoors. Chickens are also reared on free-range and organic farms.

**SLAUGHTER** - In the UK, the animals are protected by government legislation to ensure they are treated humanely. Abattoirs are legally required to ensure that the animals have been well treated throughout the process. Humane slaughter is ensured by protecting animals from avoidable excitement, pain or suffering. Staff must be trained and the facilities provide adequate ventilation, light and shelter to protect from adverse weather conditions.

**CAUGHT – FISH** - Most of the fish we eat, we have to catch; we catch fish in the sea, such as crab and haddock as well fish in rivers and lakes, for example salmon and trout. There are specific rules in place which must be followed to limit the number of fish that can be caught; for example, the Responsible Fishing Scheme is in place to raise standards in the fishing trade.

**Game** can be caught in the wild or farmed:

Game is usually classified into two categories:

- small – birds (e.g. pheasant, grouse, partridge, duck), hares, rabbits and squirrel;
- large - venison and wild boar.

Wild game is sometimes shot using lead ammunition. The Food Standards Agency recommends that people who regularly eat lead-shot game reduce their consumption as consuming lead can be harmful. This is especially important for toddlers, children, pregnant women and women trying for a baby. [www.food.gov.uk](http://www.food.gov.uk)



## CUISINE

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- A style of cooking and eating that is found in a particular country or region of the world.

### How cuisines have developed over a period time

- The local geography and climate affects what food can be grown.
- People from different countries go to live in another country and take their traditional cuisine/eating patterns with them, some of which gradually become part of that country's cuisine.

## British and international Cuisine

### **STREET FOOD**

**Street food is ready-to-eat food or drink sold by a hawker, or vendor, in a street or other public place, such as at a market or fair. It is often sold from a portable food booth, food cart, or food truck and meant for immediate consumption**

### Features of a Cuisine

- Particular foods and ingredients that are used (often locally grown).
- Particular (traditional) ways of preparing and cooking foods.
  - Particular (traditional) cooking equipment that is used.
- Particular (traditional) ways of presenting, serving and eating the food.

# CHINESE CUISINE

Common ingredients used in Chinese cuisine include soy and oyster sauce, along with cornstarch this help to creates sauces which are used with chicken or in stir fry dishes. Ginger, spring onions and garlic are also common ingredients in Chinese cuisine.

The wok was designed 5 thousand year ago when wood and other fuel was scarce. The curved bottom of the iron wok allows food to cook quickly, saving precious fuel. The roundness allows food to be scooped and stirred more easily than it can in a saucepan. The wok is used for steaming and deep-fat frying as well as stir frying.

The Chinese proverb says 'the blacker the wok, the better the cook'

Stir frying cooks food quickly, keeping vegetables crunchy and conserving nutrients. The vegetables are cut thinly so the cook quicker.

The Chinese chop with a cleaver on a slice of tree trunk to prepare meat and vegetables.

# MEXICAN CUISINE

Mexican food uses a variety of herbs and spices including chillies both fresh and dried as well as paprika. Garlic is also a common spice used along with cumin and the herb oregano. Chipotle is another spice used in Mexican cooking.

Maize is the main ingredient of the pancake called the tortilla. This can be served in many ways;

- When it is fried crisp and golden on both sides it is called a tostada.
- Tacos are tortillas curled into a shell shape and fired.
- Tortillas which are rolled up with onion and cheese then covered in sauce are called enchiladas.



# INDIAN CUISINE



In northern India and Pakistan food is often cooked in a clay oven called a tandoor, which is charcoal fired. Meat, usually lamb, goat or chicken is marinated in yogurt and spices to make it tender, then cooked quickly in the oven. The tandoor is used to cook a bread made with yeast called nan.

In Southern India the staple food is rice. More liquid curries are served in this area. The heavy rains help produce vegetables like aubergines, okra and peppers. Most Indian food is cooked on top of the cooker. Indian cooks make up their own special blends of spices and don't use ready-made curry powder.

Cooking is usually done using ghee. Ghee is made by heating butter then leaving it to set.

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## Evaluation and Practical Skills

### SENSORY ANALYSIS

There are five senses used when tasting food and drink: sight, smell, taste, hearing and touch. The senses help to develop food preferences (likes and dislikes) and evaluate foods through preference or discrimination tests.

Our tongues are covered with *taste buds*, which are designed to sense chemicals in the mouth. Most taste buds are located in the top outer edges of the tongue, but there are also receptors at the back of the tongue as well as on the walls of the mouth and at the back of the throat. As we chew food, molecules mix with saliva, enter *taste pores* and interact with *gustatory hairs*, also known as *taste receptors*. This triggers nerve impulses that are transmitted to the brain.

**The Olfactory system** This is the sensory system used for olfaction, or the sense of smell. As we breathe in, the *olfactory receptor cells* are stimulated by odours and the *olfactory membrane* sends neural messages up the *olfactory nerve* to the brain.

**Intensity** Foods may be described by association, eg meaty, minty or fruity. The intensity (low, medium or high) can also be recorded, e.g. garlicky or salty.

### PRACTICAL SKILLS

**Organisation and Timing** – Working towards being able to produce multiple dishes in an organised way by following a time plan

**Use of Hygiene and Equipment** – Being able to use hygiene and safety principles to store, prepare, cook and reheat food

**Use of Equipment** – Being able to select and use appropriate equipment with precision and accuracy.

**Use of ingredients** – work towards using a wide variety of ingredients, considering their function, nutritional and chemical properties

**Quality of outcome** – working towards demonstrating a wide and demanding range of technical skills. Using finishing techniques and garnishing to make the dish attractive

### COOKING METHODS

**Boiling** – cooking food in water at 100°C

**Braising** – searing meat in hot fat, then cooking it slowly in a covered dish with liquid

**Poaching** – cooking food in a shallow pan of water or wine

**Simmering** – cooking food in a liquid just below boiling point so it bubbles gently

**Steaming** – cooking food in the steam rising from a pan of boiling water beneath

**Stewing** – cooking food by simmering gently in a covered pot either in the oven, on the hob or in a slow-cooker

**Sautéing** – frying food in a little oil in order to soften the food and develop the flavour

**Shallow frying** (pan frying) – frying the food in a shallow frying pan in a little oil

**Stir frying** - frying the food for a short time in a wok, using very little oil

**Roasting** – cooking food in some oil or fat in a hot oven

**Baking** – cooking food in a hot oven

**Grilling** – cooking foods by intense heat on a metal grid or grill rack

**Dry-frying** – frying foods that already contain oil



#### APPEARANCE

The size, shape, colour, temperature and surface texture all play an important part in helping to determine the first reaction to a food.

Moist  
Firm Juicy Dry Solid  
Crumbly  
Sticky  
Smooth  
Flaky  
caramelised  
Bubbling  
Heavy  
Opaque  
Clear  
Thick  
Coarse  
Icy  
steaming



**SMELL (ODOUR)** and taste work together to produce flavour. This is the reason why people with a blocked nose find it difficult to determine the flavours of foods. Smell can trigger memories and either encourage or discourage someone from eating a food.

Aromatic  
Tart Pungent  
Bland  
Spicy  
Savoury  
Weak  
Citrus  
Strong  
Mild  
Smokey  
Fragrant  
Zesty  
Sweet  
Earthy  
Fresh  
Meaty



**TASTE** - We can detect five basic tastes:

- Bitter
- Salt
- Sour
- Umami
- Sweet

Sweet  
Savoury  
Zesty  
Tangy  
Sour  
Mild  
Bland  
Umami  
Strong  
Rich  
Spicy  
Hot  
Bitter  
Salty  
Tart  
Smokey  
Piquant  
floury



**SOUND** - Prepared, cooked, served and eaten all help to influence our preferences. The sounds also influence our understanding of whether they are fresh or ripe, e.g. a crisp, crunchy apple.

Crackle  
Crunch  
Sizzle  
Pop  
Brittle  
Crisp



**TEXTURE** - food is felt by the fingertips, tongue, teeth and palate. When food is placed in the mouth, the surface of the tongue and other sensitive skin reacts to its surface texture. This sensation is known as mouthfeel.

Brittle  
Coarse  
Solid  
Bubbly  
Chewy  
Close  
Granular  
Moist  
Tacky  
Soft  
Tender  
Open  
Greasy  
Goey  
Waxy

### Sensory Evaluation – star analysis

#### Instructions

1. Choose 8 sensory attributes that describe the characteristics of the product, e.g. crunchy, spicy or smooth.
2. Ask pupils to taste the sample. They can decide on the intensity of each attribute, using a scale from 0 to 10 (the higher the number the greater the intensity).
3. Fill in the results for up to 10 panellists in this sheet.
4. The average score for each attribute will automatically be calculated and plotted on the star chart/diagram.

