A wooden cutting board with various fresh ingredients including vegetables, fruits, and seafood. The board is filled with items like a whole coconut, lemons, a cucumber, green onions, dill, a head of garlic, a corn cob, a whole lobster, several shrimp, and pieces of raw fish. There are also wooden spoons and a fork scattered on the board.

# **JAMES FLEMING**

## **NUTRITION**

## **An Introduction to Food and Nutrition**

A 10 part series of activities to introduce the main nutrients that are found in food and the important roles they play in our diet

# Why is food so important?

This is part 1 of a 10 part series where we will explore the importance of food and nutrition. You will learn about the different types of nutrient, such as carbohydrate, protein, fats and vitamins and minerals, but for now, let's keep it simple.

## Why is food and drink so important?

We eat lots of food every day to fuel our bodies. Some food that we eat is good for us and we can eat lots of it, such as fruit, vegetables, pasta and chicken. People often refer to this as 'healthy food'. Eating healthy food is important because...

- It gives us energy to move and exercise
- It gives us energy so our brain can work hard and be focussed at school or work
- It keeps our immune system strong to helps us fight off colds and infection
- It helps us grow strong bones and muscles
- It helps us sleep better at night
- It makes us feel good
- It helps us maintain a healthy weight

Some other food we eat isn't as good for us. Some food can have lots of sugar, salt and fat and if we eat too much of it it can be bad for our bodies. We can refer to this food as 'unhealthy food' or 'food to have in moderation'. It is ok to eat this type of food some of the time, but not every day and only a little bit at a time.

**Activity:** Can you write down a list of 'healthy food' that we can eat a lot of every day, and a list of food that we should have in moderation.

food that is  
healthy



food to eat in  
moderation

**Question:** Why is it important to eat healthy food? Write down 3 reasons why healthy food is important for our bodies.

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# What is in your food?

In the last activity we spoke about the importance of eating 'healthy food' and why food is important for our bodies.

All food contains 'energy' and 'nutrients'. We can get energy from eating any type of food, however we need to think carefully about which food we eat so we get different types of nutrients. Different nutrients help our bodies in different ways.

There are 4 main nutrients we will be looking at in the next few activities:

- **Carbohydrate** – This is a macronutrient and we need to have a large amount of it in our diet. Carbohydrates give us energy for our daily activities.
- **Protein** – This is also a macronutrient and it helps our muscles grow. Again, we need lots of protein in our diet to keep our bodies strong and healthy.
- **Fat** – Despite what you might think, it is important to have fat in our diet because it is another source of energy and it is very important to keep our skin, body cells and brains healthy. We will be looking at different types of fat later in this series. Fat is also a macronutrient.
- **Vitamins and Minerals** – These are important because they help our bodies grow, helps to maintain our immune system to fight off colds and infections, and helps to keep our brains healthy, as well many other functions. Vitamins and Minerals are micronutrients.

No single food contains all the nutrients that we need, so it's really important that we eat a wide variety of foods to make sure we are eating a healthy balanced diet.

**Activity:** Draw a line to match each nutrient to the correct description.

Carbohydrates

Protein

Fat

Vitamins and Minerals

Helps with lots of bodily functions, boosts our immune system, helps us grow  
They are *micronutrients*

Gives us energy to do our daily activities  
It is a *macronutrient*

It is a good source of energy and keeps our brains, skin and body cells healthy  
It is a *macronutrient*

Helps our muscles grow and keeps our bones strong  
It is a *macronutrient*

**Question:** What are the four nutrients we will be exploring in the next few activities? Write them down.

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# Carbohydrates

In this activity we will be looking at carbohydrates, how they help us, different types of carbohydrate and which food you should eat to ensure you get the right carbohydrates for a healthy diet.

## Nutrient Name: Carbohydrate

**Type of nutrient:** macronutrient

**Main role:** Gives us energy for our daily activities

Should make up  $\frac{1}{3}$  of our diet



There are two types of carbohydrates

### Simple Carbohydrates

- Give us a quick release of energy
- Should be eaten in small amounts
- Mostly found in sugary food eg. sugar, jam, honey, fizzy drinks, sweets, fruit juices...



### Complex Carbohydrates

- Gives us energy over a longer period of time
- We should eat more of this in our diet
- Found in food such as bread, crackers, rice, pasta, potatoes, cereal, oats, pulses...



**Activity:** What food can you find in your house/ kitchen that would be a source of carbohydrate?



**Question:** What are the two types of carbohydrate? Can you write down at least one difference between them?

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# Protein

In this activity we will be looking at protein, why we should eat it and what food you can eat to get lots of protein in your diet.

## Nutrient Name: Protein

Type of nutrient: *macronutrient*

Main role: to help our bodies grow and repair

You should have 2-3 sources of protein a day



Sources of protein include meat, such as beef, lamb, pork, chicken, and fish. You can have bacon and sausages, but they contain lots of salt and fat, so you shouldn't have them every day.

Dairy products also contain protein such as milk, cheese, and yogurt. Dairy is also a good source of *calcium* which is important for strong bones and teeth.

Eggs, nuts, pulses, beans and grains are also good sources of protein, and are great for people who don't eat meat.

**Activity:** Can you circle all the food that is a good source of **protein**?

Don't get confused – some of the food is a source of carbohydrates, fats or vitamins and minerals instead!



milk



strawberries



bread



nuts



sweets



beef steak



chocolate cake



carrots



roast chicken



olive oil



eggs



pasta

**Question:** How many sources of protein should you have each day?  
Why should we have protein in our diet?

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# Fat

In this activity we will be looking at different types of fat and why we need it in our diet.

## Nutrient Name: Fat

**Type of nutrient:** macronutrient

**Main role:** to give us energy and to keep our brains, skin, and cells healthy

Fat is full of energy so we only need a little bit each day



There are lots of different types of fat, including...

### Unsaturated fat

*monounsaturated / polyunsaturated*

This is 'good' fat

This helps to keep our heart strong and healthy and helps our body cells function.

It can be found in food such as avocado, nuts, eggs, and oily fish such as salmon and tuna

### Saturated fat

This is 'bad' fat

We only need a bit of this fat to help maintain a healthy immune system and body.

It can be found in meat (chicken, pork, beef...), dairy products (milk, yogurt, butter...) and cooking oil

### Trans Fat

This is 'ugly' fat

Trans fat can be found in highly processed food brought from a shop/takeaway, such as cakes, biscuits and ready meals.

Extra ingredients and preservatives are added to these foods to make them last longer, but it can be bad for our bodies if we eat them too much.

**Activity:** All the different food below contains a source of fat, but which type of fat do they contain?

Circle the food containing 'good' unsaturated fat in green

Circle the food containing 'bad' saturated fat in orange

Circle the food containing 'ugly' trans fat in red



chicken



a packet of biscuits



salmon



cooking oil



avocado



nuts



shop bought cake



milk



a shop bought ready meal

**Question:** Why should we have a little bit of fat in our diet? What type of fat is the best for us? Which type of fat should we avoid?

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# Vitamins and Minerals

In this activity we will be looking at vitamins and minerals, why we should eat it and what food you can eat to get lots of them in your diet.

## Nutrient Name: Vitamins & Minerals

Type of nutrient: *micronutrient*

Main role: to help us grow, have a strong immune system and to keep our brain healthy

We should try and eat 5-7 portions of fruit and vegetables a day



There are lots of different vitamins and minerals in food that are used in different ways within our bodies to keep us healthy. They are found in different types of fruit and vegetables so it's important to eat a variety of fresh fruit and vegetables every day. These are some of the important vitamins and minerals that our bodies need...

- Iron – it is important for making red blood cells moving oxygen around the body. It's found in kale, spinach, nuts, meat
- Vitamin C – helps to boost our immune system and fight off colds and infections. It's found in oranges, berries, broccoli and other fruit/veg
- Calcium – it helps to keep our bones, teeth and muscles strong. Good sources of calcium include leafy vegetables and dairy products

Activity: Write a list of as many fruit and vegetables as you can



### Fruit

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### Vegetables

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Question: Can you name one of the important vitamins and minerals our body needs, why we need it, and which food is a good source of it?

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# Tracking what you eat

Now that we have explored the different nutrients and what foods we can get them from, I'd like to challenge you to look at your own diet and see how much of each type of nutrient you are eating in a day.

Remember the 4 types of nutrient we are looking for. Here is a brief reminder, but you can look back at the previous activities if needed.

- **Carbohydrates** – it should make up  $\frac{1}{3}$  of your diet  
simple carbs are found in sugary food, complex carbs are found in things like bread, pasta, potatoes and cereal
- **Protein** – aim for 2/3 sources a day  
found in meat, dairy products, eggs, beans and nuts
- **Fat** – only have a little bit each day  
'good' unsaturated fat is found in nuts, eggs and oily fish, 'bad' saturated fat is found in oil, meat and dairy products, 'ugly' trans fat is found in shop brought/processed food
- **Vitamins and Minerals** – aim for 5-7 portions a day  
found in fruit and vegetables

Some food can contain more than one type of nutrient.

**Activity:** Write down all the food you have in one day, then see if you can work out which food is a source of **carbohydrates**, **protein**, **fat** or **vitamins/ minerals**. Here is an example...

**Breakfast:** A bowl of porridge;

- 50g oats ■
- A handful of nuts ■ ■
- 250 ml semi skimmed milk ■ ■
- 1 banana ■ ■
- A glass of orange juice ■ ■

**Lunch:** A wrap and salad

- A whole grain wrap ■
- Butter ■
- Chicken ■ ■
- Lettuce ■
- Tomato ■
- Cucumber ■
- A glass of water

My food diary

Date:

Breakfast

Lunch

Dinner

Snacks

**Reflection:**

What type of nutrient do you eat most in your diet?

Did you eat the right amount of each nutrient?

Do you need to make any changes to your diet?

# Hydration

It's important to think about the food we eat each day to ensure we get the right nutrients, but it's also important to check how much we are drinking every day.

When we drink enough water, we are 'hydrated'

When we don't drink enough water, we are 'dehydrated'

You can tell if you are dehydrated from the following signs...

- You might get a headache
- You might feel dizzy
- You might feel very tired and have no energy
- You might feel sick



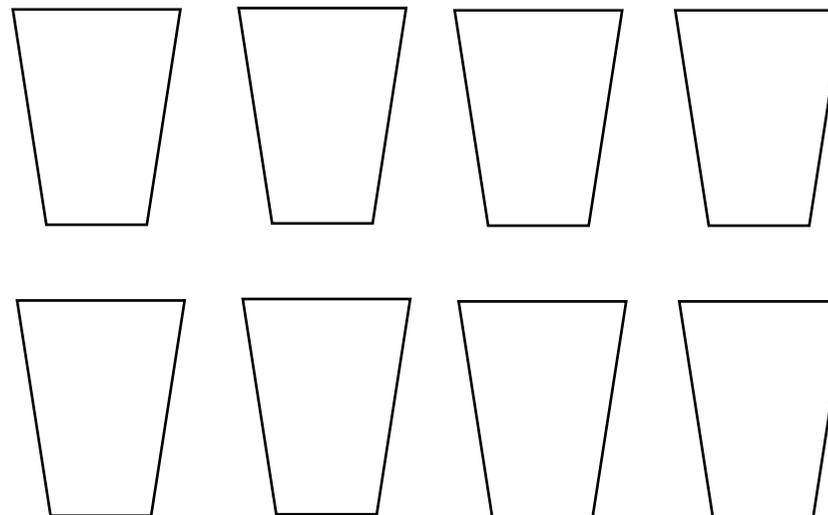
You can also tell if you have had enough to drink by the colour of your urine! When you are hydrated your urine is usually light yellow or clear. If you are dehydrated it might be a dark yellow/ brown colour. It is important to drink enough water to keep your bladder healthy.

Fizzy drinks and fruit juice will make you feel hydrated, however they can contain a lot of sugar, so you should only have them occasionally, not every day.

You should aim to drink at least **2 litres of water each day**. That's about 6-8 glasses.

**Activity:** We should aim to have 6-8 glasses of water every day (2 litres) A glass of water is based on a 250 ml glass.

See if you can drink that much today, and each time you have a glass of water cross out or colour in one of the cups below



## Reflection

Did you find it hard to drink that much?

Did you drink more than expected?

Did you notice a difference in the colour of your urine today?

**Question:** How can you tell if you are dehydrated? Write down 3 signs

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# How much sugar is in your drink?

In the last activity we spoke about being *hydrated* and *dehydrated*. We learnt that you have to drink 2 litres (6-8 glasses) of water every day.

*But what about other drinks?*

A lot of drinks contain added sugar, and sometimes we might not be aware of it. Having too much sugar in our diet is bad for us as it can lead to things like tooth decay, an increase in weight, or other health issues like heart disease or diabetes.

There are recommended limits of how much sugar you should have in a day, which varies depending on your age. We should try not to go over these limits to ensure we keep our bodies healthy. A cube of sugar is about 2.8g.

- Ages 4 to 6 – around 19g of sugar = 5 cubes 
- Ages 7 to 10 – around 24g of sugar = 6 cubes 
- Ages 11 and over – around 30g of sugar = 7 cubes 

Added sugar can be found in other food, as well as drinks.



There's 25g of sugar in a 45g Dairy Milk chocolate bar



There's nearly 30g of sugar in a tube of fruit pastilles

There's 4.2g of sugar in a just one Oreo biscuit



Some fruit can contain a lot of sugar, so while it is good for us as it contains vitamins and minerals, we shouldn't have too much in one day.

**Activity:** Here are some popular drinks. Can you guess how much sugar is in each drink?



A can of Coca Cola (355ml)



Orange flavoured fruit shoot (200ml)



A carton of Ribena (250ml)



Chocolate flavour Friji milkshake



A can of Red Bull (250ml)

44g of sugar = 15.7 cubes



35g of sugar = 12.5 cubes



26g of sugar = 9.2 cubes



11.5g of sugar = 4.1 cubes



1.6g of sugar = 1/2 a cube



**Question:** Think about how old you are and work out your sugar limit. Why should we not have too much added sugar in our diet?

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## Making a meal

This is the last part to this series where we have been exploring nutrition and the roles of carbohydrates, protein, fat and vitamin and minerals in our diet. What have you learnt?

- Can you remember how each of the nutrients helps our body to stay healthy?
- Can you remember some of the food which is a good source for each of the nutrients?
- Can you remember how much of each nutrient should be in our diet?

To explore how much of each nutrient, we should have we can use the 'Eat Well Guide', which shows us how much of each nutrient we should have in each day. We should aim for our diet to consist of  $\frac{1}{3}$  carbohydrate,  $\frac{1}{3}$  vitamins and minerals, just under  $\frac{1}{3}$  of protein (meat and dairy) and a little bit of fat.



It means that in each meal you should try and get your plate to look like this. You should have  $\frac{1}{2}$  a plate of fruit/vegetables to make sure you get your vitamins and minerals,  $\frac{1}{4}$  of a plate of protein (meat/cheese) and  $\frac{1}{4}$  of a plate of carbohydrates (pasta/potato/rice/bread). You will get your required fat in each meal from the protein you have and from any oil you use to cook your food.

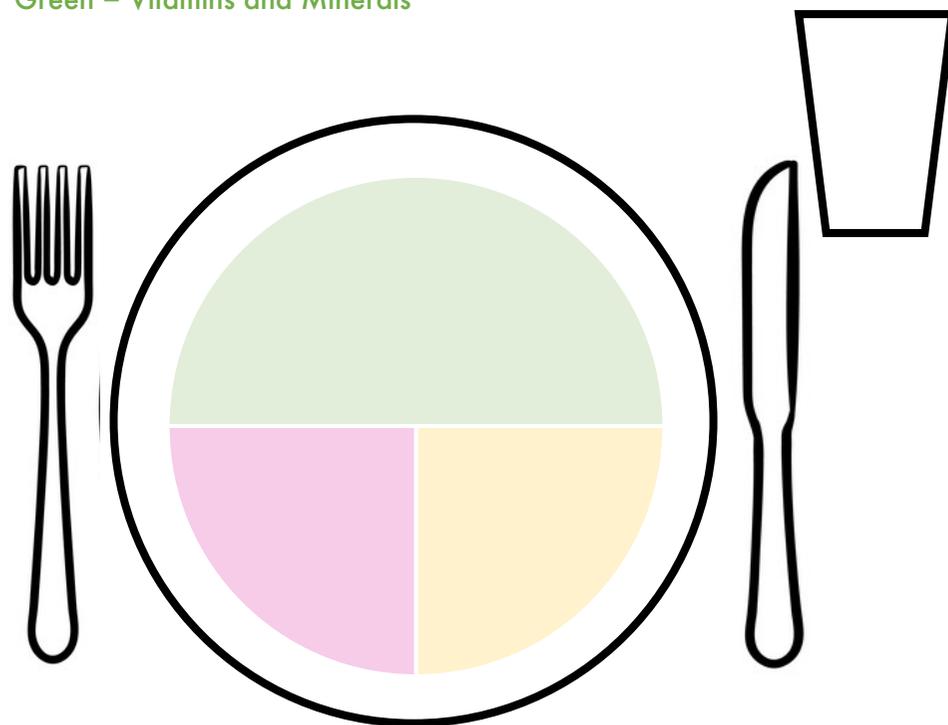
**Activity:** Using everything you have learnt about the different types of nutrients, can you make a healthy meal? What drink would you have?

Write or draw what food you would have in each of the sections.

Yellow = Carbohydrates

Pink = Protein → your fat will be included in this section of your plate

Green = Vitamins and Minerals



**Reflection:**

Does your plate/ meal normally look like this?

Do you think you are eating the right food to ensure you have a healthy diet?

Are you going to make any changes to your diet following these 10 activities?

# Answers to activities

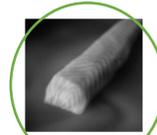
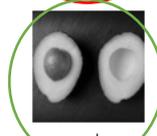
Part 2:  
What is in  
your food?

**Activity:** Draw a line to match each nutrient to the correct description.

Carbohydrates	Helps with lots of bodily functions, boosts our immune system, helps us grow They are <i>micronutrients</i>
Protein	Gives us energy to do our daily activities It is a <i>macronutrient</i>
Fat	It is a good source of energy and keeps our brains, skin and body cells healthy It is a <i>macronutrient</i>
Vitamins and Minerals	Helps our muscles grow and keeps our bones strong It is a <i>macronutrient</i>

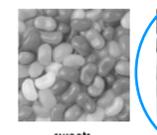
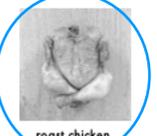
Part 5:  
Fat

**Activity:** All the different food below contains a source of fat, but which type of fat do they contain?  
Circle the food containing 'good' saturated fat in green  
Circle the food containing 'bad' unsaturated fat in orange  
Circle the food containing 'ugly' trans fat in red

 chicken	 a packet of biscuits	 salmon
 cooking oil	 avocado	 nuts
 shop bought cake	 milk	 a shop bought ready meal

Part 4:  
Protein

**Activity:** Can you circle all the food that is a good source of protein?  
Don't get confused - some of the food is a source of carbohydrates, fats or vitamins and minerals instead!

 milk	 strawberries	 bread	 nuts
 sweets	 beef steak	 chocolate cake	 carrots
 roast chicken	 olive oil	 eggs	 pasta

Part 9:  
How much  
sugar is in  
your drink?

**Activity:** Here are some popular drinks. Can you guess how much sugar is in each drink?

	44g of sugar = 15.7 cubes
	35g of sugar = 12.5 cubes
	26g of sugar = 9.2 cubes
	11.5g of sugar = 4.1 cubes
	1.6g of sugar = 1/2 a cube

This document was created by James Fleming MSc, SENr to help children and adults understand the basic role that nutrition plays in our diet and the importance of healthy eating. For more information about nutrition refer to 'The Eat Well Guide'.

May 2020