Unit focus: Eating and Digestion
Text focus: Information Text

STAGE 4

A Healthy Diet

Humans and other animals get everything they need from the food they eat. As food is digested, the body extracts useful nutrients which it can then use. Food is like the fuel in your car: without it, you wouldn't be able to do anything. Because your body has different needs, it is important to eat a balanced diet. This means eating foods which provide all the different nutrients that your body needs.

Carbohydrate

Carbohydrates are found in foods like potatoes, bread and pasta. Carbohydrate can be broken down and used by the body for energy. Wholegrain foods like wholewheat bread or brown rice release their energy slower. This is good because it will fuel you for longer. The NHS recommends that around a third of our diet is carbohydrate.

Protein

Protein is a very important nutrient. It is like a building material for the body. Protein can be used to grow or repair muscles and bones. It is found in animal products like meat, fish and eggs. Vegetarians get protein from foods like lentils, beans, soya and nuts.

Fat

Small amounts of fat are an important part of a healthy diet. Fat has many uses including providing energy and keeping cells healthy. It also helps the body absorb useful vitamins and minerals. However, not all fats are the same. Unsaturated fats are often called 'healthy fats'. They are found in vegetable oils, nuts and seeds and avocados. Saturated fats on the other hand are found in fatty meat, butter, cheese, biscuit and cakes. These fats can cause health problems and should mainly be eaten as treats.

Vitamins

There are many different types of vitamins and they each have a vital job. For example, vitamin C which is found in citrus fruits and green leafy vegetables, helps the body fight infection and looks after skin, teeth and gums. Vitamin A, from oily fish, eggs and some vegetables, is needed to help with eyesight. Fruits and vegetables

are rich sources of vitamins and that is why we should aim for at least five portions a day. These portions should ideally all be different types. Some people suggest 'eating the rainbow'! If we try to eat lots of different colours of fruit and vegetable, we will be making sure our bodies get lots of different vitamins.

Minerals

Like vitamins, there are many different types of minerals. Calcium is one especially important one because it helps keep our bones strong. Eating dairy products, tofu, sardines, almonds or green leafy vegetables will help you get the calcium you need. Iron is the mineral which helps our red blood cells carry oxygen around the body. It is found in red meat, beans and nuts.

Water

Finally, a healthy diet needs water. It helps with digestion so that the body can use all of the other nutrients and get rid of waste. It transports oxygen and nutrients around the body and it is needed for every single cell. We can get water from our food and drink. However, the cheapest and healthiest way of making sure you have enough water is by drinking, you guessed it, fresh water!

RETRIEVAL FOCUS

1. How much carbohydrate are people advised to eat?
2. Which nutrient helps the body grow and repair?
3. Give one source of unsaturated fat.
4. What is meant by the phrase 'eating a rainbow'?
5. What vitamin helps with vision?

VIPERS QUESTIONS

V What word or phrase could replace 'extracts' in the first paragraph?

I What evidence is there in the text to suggest that people should be careful when eating fatty foods.

V Find and copy a word which means 'important'.

S Looking at the whole text, what important nutrients are provided by nuts?

S Using the information in the text, design a plate of food which would contribute towards a balanced diet.

A Letter From An Allergy Sufferer

Hey Michael!

Thanks so much for inviting me to your birthday party. It sounds amazing. I've never been climbing but I've been desperate to try it so I'd really like to come, even though I think I might be a little bit scared.

In actual fact, there's something other than the climbing which is even more scary for me, so I just wanted to explain it here. I know you've seen at school that I always bring my own lunch, and I always say no when someone offers to share their snack with me or anything like that. I think sometimes people think I'm rude, don't they! There is a reason though. You see, I have quite a serious allergy to peanuts. Well, it actually could be very serious if I didn't take extra care. So, it's not the climbing that worries me the most — it's actually the party food!

Some people think an allergy is just an excuse for when you're fussy or don't like something. Or maybe they think you just get a bit of a tummy ache or a sniffly nose and then feel better later. But my allergy is severe and could be an emergency. You see, there's a protein in some nuts which my body doesn't like. For some reason my body thinks peanuts are the enemy, and I have a reaction whenever they're near. If I eat even the tiniest amount of peanut or even if I breath in peanut dust or touch something which is contaminated, I get really ill. It's called anaphylaxis. My lips start tingling and then my tongue and throat start to swell up. I have trouble breathing and can feel faint. You can imagine that when it first started happening, it was really scary. Nowadays, I carry special medicine called an epipen with me wherever I go. That means, I can hopefully stop the reaction before it gets too bad. Even so, it is not very nice when it happens.

The reason I am telling you all this is that I would like to come to the party but I need to check if it is nut free. I don't mind bringing my own food, but even being near peanuts can make me ill. Please don't think I'm being awkward or picky! My mum is going to call your parents to check with them and explain things. Unfortunately, you can't just take away the bags of peanuts. You have to check all the labels too in case there are any hidden. Trust me – I'm used to it but it can get a bit tedious. My mum will also explain how to use my epipen – just in case.

So, thanks again for inviting me and I hope you understand why I have to ask these questions.

See you soon at school.

From Katia.

INFERENCE FOCUS

1. How does Katia feel about climbing?
2. Why has Katia's allergy become easier to manage?
3. How does Katia feel about having to check food labels all the time?
4. What evidence is there that Katia's mum is protective of Katia?
5. What evidence is there that Katia is worried what people think about her allergy?

VIPERS QUESTIONS

R	What food can Katia not eat?
V	What is a synonym for 'severe'?
V	Find and copy a word that means 'boring'.
S	Summarise the things Katia has to do to prevent herself having an allergic reaction.
P	What do you think Michael's reply would be?

Unit focus: Eating and Digestion
Text focus: Playscript

STAGE 4

Dinner Time Duty

Brain: Good evening, this is the control room speaking at 5:53PM. We're approaching dinner time here so could all units please be on standby for duty and await further instructions. Sam's had a particularly busy day at school and has been playing football so we're expecting a substantial refuel. Stomach, are you receiving me?

Stomach: Heard and understood Brain. We are ready and eagerly awaiting your command.

Brain: Small Intestine? Large Intestine? Status update please.

Small Intestine: OK captain. Just working through lunch but things are moving along nicely and we're happy to report that Sam ate well this morning, so we're sending lots of nutrients out to the body today.

Large Intestine: I've got yesterday's breakfast heading down towards the rectum shortly and yesterday's lunch and dinner are next in line for processing. We're running pretty much on schedule my end Captain.

Brain: Thank you. We won't be needing you right away so continue as you are doing for now. Right, I'm receiving information from Nose about some very tempting smells, so I'm just going to turn up the dial on Sam's appetite a little now. Mouth, a little injection of saliva please. Let's get everything ready for kick-off.

Mouth: Saliva deployed and we are ready and waiting our assignment.

Brain: OK everyone, this is it. It's show time. Sam's heading to the table now. To your stations all units and listen out for further instructions. Mouth – here comes the first bite.

Mouth: First delivery received Control. Activating teeth and tongue now. It's a big mouthful - taking some serious chewing action. He's clearly hungry, but we'll get it broken down in no time.

Brain: Good. When it's ready, get the tongue to send it to the back of the mouth. Oesophagus, you're up. Get squeezing. We need this down to the stomach for processing sharpish.

Oesophagus: Alright Mouth, ready for handover. Easy now though - let's not rush this. Don't want Sam to choke do we?

Mouth: No chance of that. Giving it a really good chomp. And passing it over

in 3, 2,....

Oesophagus: Bolus of food is in my possession and coming your way Stomach. Estimated time of arrival is ten seconds and counting.

Stomach: At last. I've been rumbling since about 4:30. Lunch was hours ago! Let's get mixing. Got a whole load of gastric juices ready to get to work on that.

Brain: Good to hear. Pancreas – time to get working on those enzymes. We'll be needing them before too long.

Pancreas: You bet!

Brain: OK. Mouthfuls coming thick and fast now so keep moving it through - you know what you have to do. Large intestine, looks like we're going to need space. Any chance of clearing the decks your end?

Large Intestine: Once he's finished eating captain. We don't like to rush things down here.

Brain: Heard and understood. Do what you can. Right, that's dinner complete. Well done team. Still a lot of work to do of course. Keep doing what you're doing. I'm going to help him with his homework so you won't be hearing from me for a bit. It's fractions. Over and out.

VOCABULARY FOCUS

1. Find and copy a word that means large or considerable.
2. What does the phrase 'on schedule' mean?
3. What does 'deployed' mean?
4. What does 'activating' mean?
5. Find and copy a word that the Brain uses to mean 'quickly'.

VIPERS QUESTIONS

R Why does Brain expect that Sam will be hungry?

I What impression do we get of Brain?

S What happens after the food leaves the mouth?

R What role does the pancreas play in digestion?

E At the beginning, the mood is calm and later things get busier. Find and copy the phrase which marks the change in pace.

Teeth

The mouth and teeth are the first part of the digestive system. The job of the teeth is to break the large chunks of food into smaller parts so that they can be swallowed. Humans have two sets of teeth across their lifetime: baby teeth come first and are later replaced by adult teeth which have to last the rest of our lives. There are four types of teeth in the adult mouth and each one plays a different role in chewing our food.

Incisors

Adult humans have eight incisors. They are positioned at the front of the mouth, four at the top and four at the bottom. These teeth are are used for cutting food. They have straight, sharp edges to help with this job.

Canines

Either side of the incisors, on the top and bottom jaw, we have four canine teeth. These pointed teeth help tear food such as meat. Plant-eating animals such as cows do not have canines whilst carnivores such as cats and dogs have prominent canine teeth that they use to rip apart their prey.

Premolars

Further back in the mouth, humans have eight premolars. These teeth are wider and flatter than the incisors and canines and have ridges, or 'cusps' on them. These help them to grind food and transport it from the front of the mouth to the back where the molars do the main grinding and crushing.

Molars

The largest teeth in the mouth, molars are flat like premolars and have four cusps for grinding. Humans have up to twelve molars, three each on either side of the upper and lower jaw. The very back four are called wisdom teeth and they are the last to develop. They emerge between the ages of about 18-25.

Caring for teeth

Once you have your adult teeth, it is really important to care for them

so that they stay strong and healthy. You should brush your teeth twice a day, making sure you reach all of your teeth. Because of their ridges, molars and premolars need special attention because food can get stuck in the grooves in between. If trapped food is not removed, bacteria can grow and damage teeth. Certain foods can also damage your teeth. Sugar is the main culprit. Too much sugar, especially sugary drinks, can cause teeth to decay. That is because it encourages more bacteria to grow and results in acids which harm the enamel on your teeth. This enamel is the hard coating that protects the teeth from damage or from hot and cold. That is why sensitive teeth can sometimes be a sign that the enamel is starting to wear away. Regular visits to the dentist are important in looking after your teeth and picking up on any potential issues before they get too serious.

RETRIEVAL FOCUS

1. Complete the table with facts about the four types of teeth:

Name	Number	Description	Job
Incisors			Cutting food
	4	Pointed	
			Transport food to the back of the mouth
Molars			

2. Which animals don't need canines?

3. What is the name of the hard protective coating of teeth?

VIPERS QUESTIONS

V Which word in the section on canines is closest in meaning to noticeable or obvious?

V What does emerge mean?

S Summarise the ways the text advises us to care for our teeth.

I Why are the tips about caring for your teeth especially relevant for when you get your adult teeth?

E What is the overall purpose of this text? Tick one.

- To entertain someone
- To compare human teeth with other animals
- To give general information about teeth
- To help someone who is thinking of becoming a dentist

Weird And Wonderful Digestive Systems

Our digestive systems help us break down our food so it can be used for things like moving, growing and healing. It is a pretty incredible system with a very important job. Other animals need to digest their food too and, whilst there are many similarities, read on to learn about some of the more intriguing digestive systems of the animal kingdom.

1. Adult humans have 32 teeth that break food up into smaller pieces so it can be swallowed. (Children make do with only 20). As you can imagine, many animals show off a far more impressive set of gnashers. So what animal do you think has the most? A ferocious shark or a toothy alligator? Well actually, it's gastropods such as snails and slugs which lead the way. They can have tens of thousands of tiny teeth which scrape and saw at food to help them eat. The umbrella slug, which lives under the sea, takes top spot with as many as 750,000 teeth in its lifetime!

2. After you chew and swallow your food, you often forget about it. However, your stomach is busy carrying on the job of breaking food down so your body can use it. Humans have one stomach compartment whereas cows and deer have four and other species like the platypus have none at all. Birds have an additional organ called a gizzard that is attached to the stomach. It does the job that in humans is done in the mouth: it grinds up food. Some birds even swallow small stones or grit to help with the grinding when food is in the gizzard. It's a great solution to make up for their lack of teeth!

3. To help break down food, the stomach produces enzymes and acids. Yes - your body has acid in it that is almost as powerful as battery acid! It is so strong it dissolves food and also helps kill any nasties that you might accidentally have consumed. There is one species however which needs its

stomach acid to be even stronger. Vultures – which eat rotting carcasses – have acid that is 100 times as strong as humans. They need it to help protect them from the dangerous bacteria that grow on their food. It is so strong it can even dissolve bone.

4. After leaving the stomach, our food moves to the small intestine where the nutrients are absorbed. In humans, the small intestine stretches to an impressive 7m. That's a long way for your food to travel on its journey of digestion. However, that distance is nothing in comparison to the blue whale. Its small intestine is estimated to be around 220m long!

5. The time taken for food to complete its journey through your digestive system varies. Fruit and vegetables are digested more easily and travel more quickly. They take less than a day to be digested. Meat and fish take up to three days. Perhaps unsurprisingly, the sloth is one animal that takes a slower pace when it comes to digestion. Food takes a month to pass through its system!

EXPLAIN FOCUS

1. What does the choice of the word 'intriguing' suggest about the writer's attitude to this topic?
2. Find a copy a phrase where the writer addresses the reader directly.
3. What phrase tells us the writer could have predicted the sloth would have digested food slowly?
4. What examples of informal vocabulary can you find?
5. Why has the writer used an informal tone?

VIPERS QUESTIONS

R	Which animal has the most teeth during its life?
V	In the section 3, find and copy a word that means eaten or drank.
S	How do birds make up for not having teeth to chew food?
V	What does 'varies' tell us about digestion times?
R	How long do humans need to digest meat?