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Opening extract from

The Amazing Human Body Detectives

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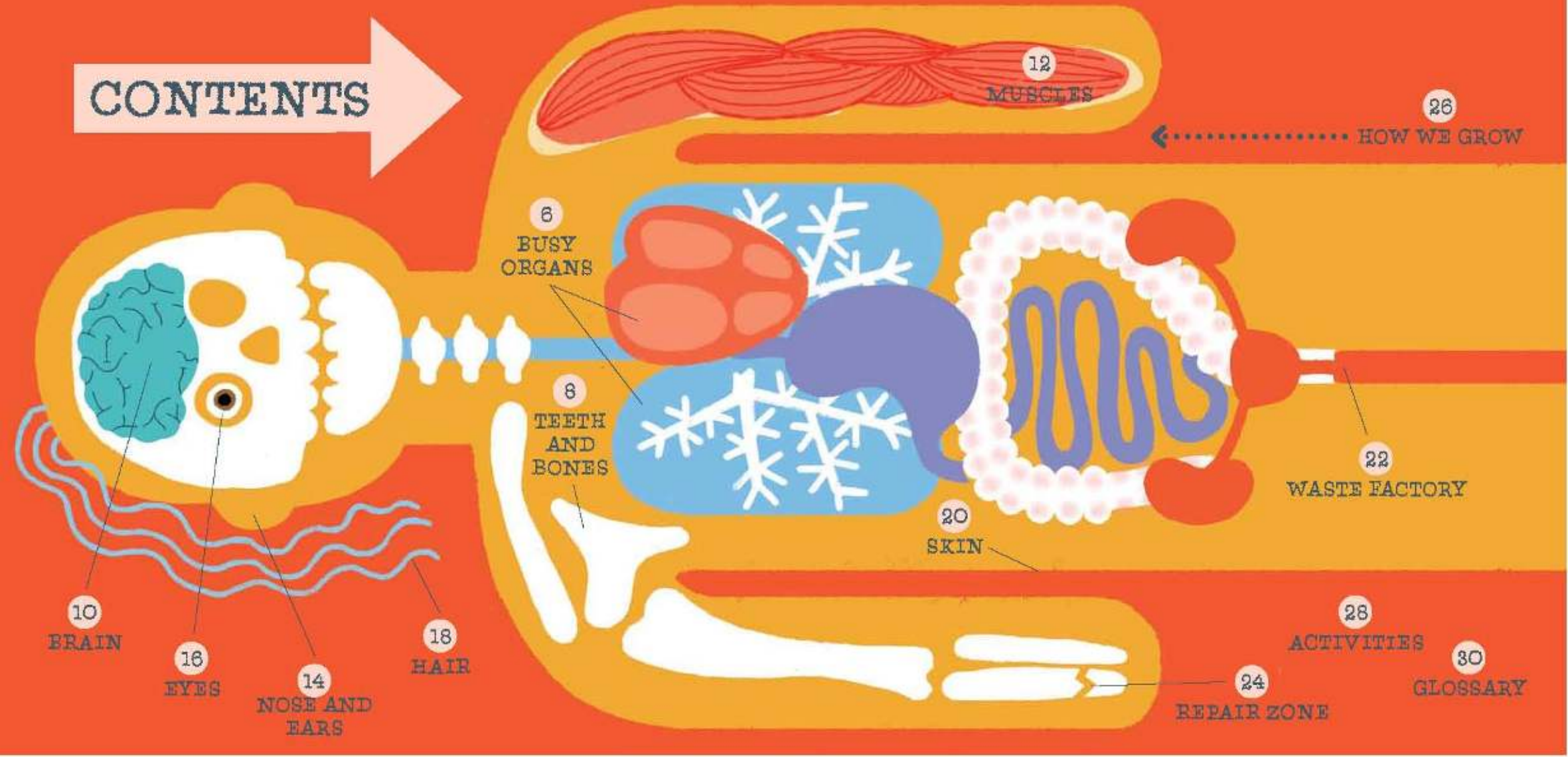

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BUSY ORGANS

Your body is made up of some very important organs that keep you alive by circulating blood, oxygen and waste products to the right places. You would not be able to live without your heart, lungs or kidneys, so they need looking after. You can do this by exercising and eating healthily.



Your heart works hard and beats over 100,000 times a day.



Laughing is good for your heart, so get giggling!

Platelets help your blood to clot.

White blood cells help fight infection in the body.

Red blood cells carry oxygen around the body.

BLOOD ZONE



KIDNEY

The job of your kidneys is to filter all the nasties out of your blood into your wee. They work in a similar way to a sieve — like the ones you use when you're baking!

KIDNEY

Your lungs are filled with over 300 million tiny air bags called alveoli. They transfer oxygen to your blood.



Your heart is the same size as your fist.

LUNGS

The heart has four chambers.

HEART

LUNGS

You breathe in 11,000 litres of air every day. That's enough to fill 5,500 bottles!



Your lungs provide oxygen from the air you breathe in. Your heart then pumps blood carrying oxygen all around your body.

Your heart beats, or pulses, around 80-100 times a minute (normally). Try counting to 100 in a minute. Fast, isn't it?

HINT!
If you don't know where to find it, use your magnifying glass to find good pulse spots on the body!

BODY CHALLENGE
Try to find your own pulse and count it...





Can you find the tanks of different blood cells being transported around the body?

Use your magnifying glass to find the blood tanks!

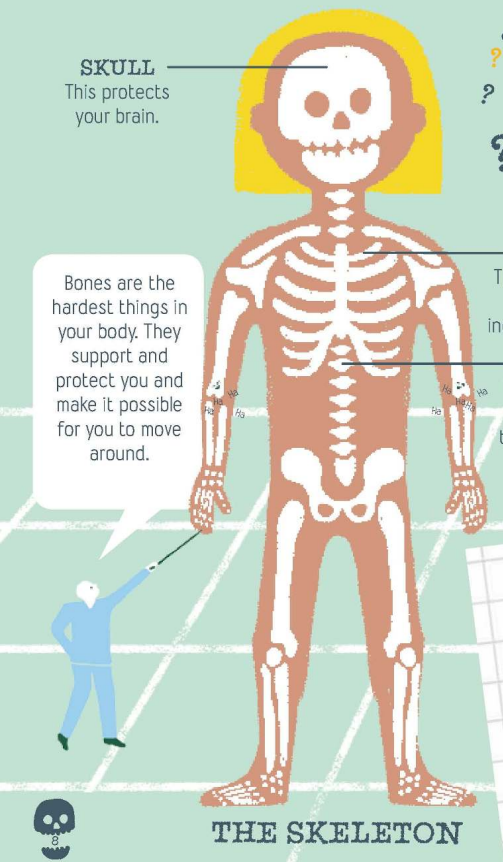


BLOOD HIGHWAY

Your blood travels around your body carrying vital nutrients to different parts.

TEETH AND BONES

Your bones support your body in a connecting framework called the skeleton. Your teeth help you cut and chew the food that you eat, making it easier for you to swallow and digest it.



THE SKELETON

DID YOU KNOW?

Your funny bone isn't a bone at all! It is a nerve that lives in your elbow.

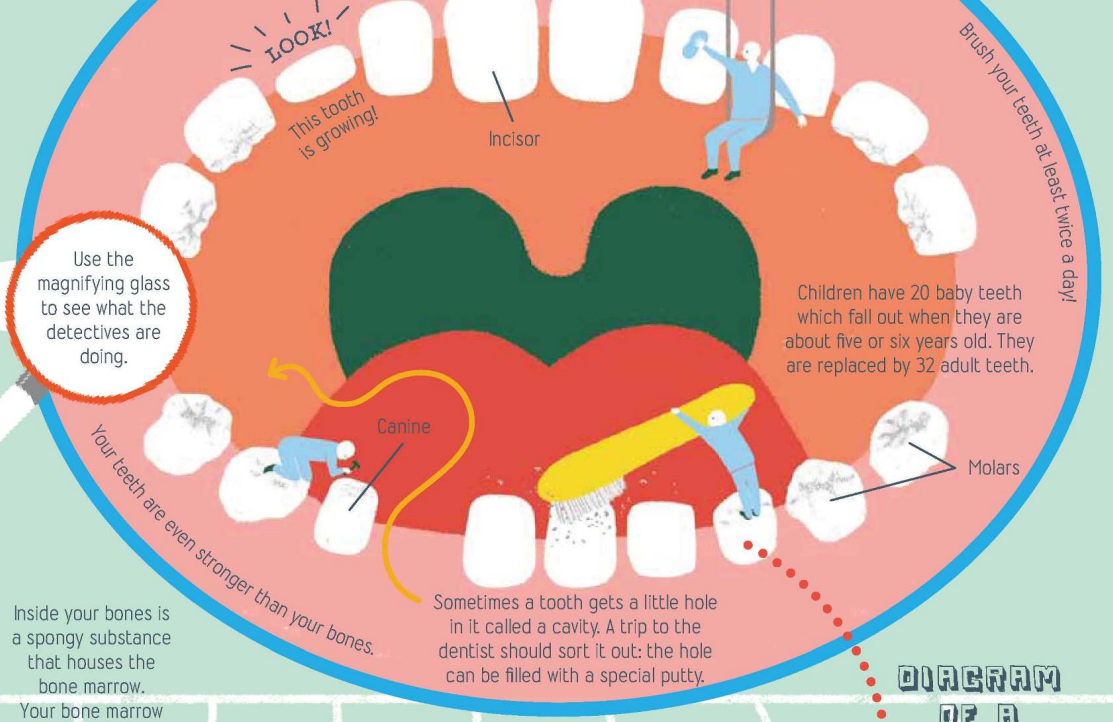
FUNNY BONES!

Can you find the laughing bones?

Brushing your teeth helps to keep them healthy by removing bits of food that are hiding on the surface and between each tooth.



Use the magnifying glass to see what the detectives are doing.



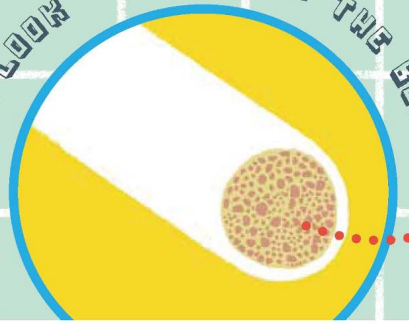
CALLING MINI SCIENTISTS

Drop a penny into a glass of fizzy drink and watch it change over a day or so. You can see that the drink removes a layer from the penny. Now, just think how important it is to brush your teeth at night after you have had a fizzy drink!



Inside your bones is a spongy substance that houses the bone marrow. Your bone marrow produces billions of red and white blood cells a day!

A CLOSER LOOK INSIDE THE BONE

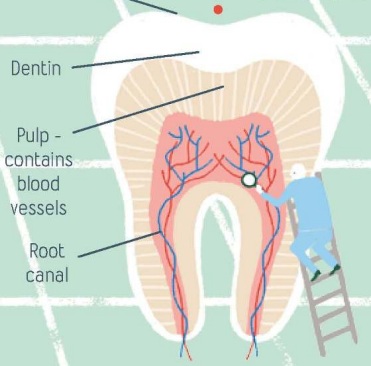


BODY CHALLENGE

Look in a mirror, open your mouth wide and use your magnifying glass to have a good look inside. What can you see? Can you see the surface of your teeth? Is it smooth or bumpy?



DIAGRAM OF A TOOTH



BRAIN

The brain is your body's central command station — like a computer it stores and processes information. It helps you to talk, to work out the answers to maths questions and, most importantly it tells the rest of your body what to do.

FRONTAL LOBE

This is the hub of the brain where you think and make decisions.

LEARNING HEAD

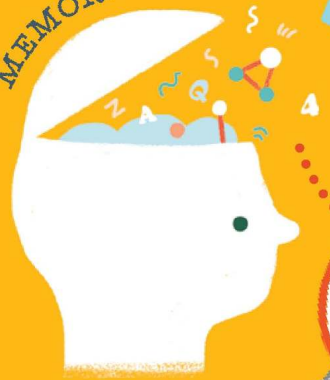
Here is where your brain processes numbers, letters and maps.

AMAZING NERVES!

If you stepped on a pin, nerves in your skin would detect the pain and send signals to your brain at lightening speed telling you to remove the pin.



MEMORIES



Your brain is like a library that stores all your experiences and knowledge.



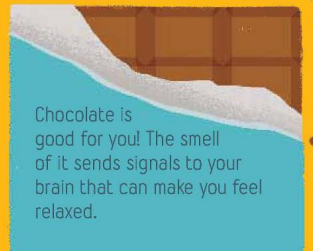
Use your magnifying glass to see what is happening in the brain.



EYE SPY



This part of your brain makes sense of what you see, including recognizing different colours and shapes.



Chocolate is good for you! The smell of it sends signals to your brain that can make you feel relaxed.

DREAMS!

When you fall asleep your body is resting but your brain doesn't switch off. The parts linked to imagination and creativity remain active.



BALANCE!

This part of your brain keeps you upright and helps you co-ordinate your movements!

MUSCLES

Muscles are not just about strength. You need them to move every part of your body from your toes to your face. Muscles work by transferring energy into movement. We usually think of muscles as the ones we can see in our arms and legs. In fact, they are everywhere in your body, from your eyes to your internal organs.

Without muscles, we couldn't move at all!



Try moving very slowly and you may be able to feel different muscles doing their job. Think about every part of your body that needs muscles to move.

MIGHTY MUSCLE FACT FILE

SMALL BUT MIGHTY
the strongest muscles are the ones surrounding your eyes.

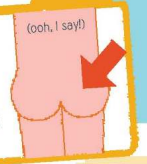
BUSIEST MUSCLE
is somewhere on this page... Can you find it?

LONGEST MUSCLE
runs from the outside of the hip down to the inside of the knee.

SMALLEST MUSCLE
is in your ear.



LARGEST MUSCLE
is actually in your bottom!



The ones in your arms are called skeletal muscles. They help you to move and you control them with your brain.

Muscles are a lot like elastic. They are made of fibres that stretch and relax to help you move.

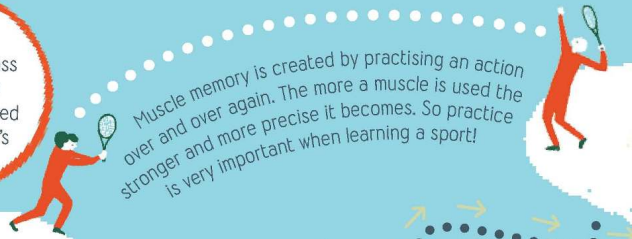


SKELETAL MUSCLES

Use your magnifying glass to see which sports are stored in this person's memory.



Muscle memory is created by practising an action over and over again. The more a muscle is used the stronger and more precise it becomes. So practice is very important when learning a sport!



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So, it's easier to smile!

Can you guess how many face muscles it takes to smile?

Can you guess how many face muscles it takes to frown?



BUSIEST MUSCLE AWARD GOES TO...



THE HEART!

Cardiac muscles (the ones in your heart) are called twitch muscles because they work without you knowing.

Smooth muscles are found around organs such as your bladder, stomach and airways. They help organs to do their jobs, which often require movement.

