

MD 2008

Messages from Outside

You can tell what is happening around you in five different ways. **Do you know what these are?**

1. You **see**
2. You **hear**
3. You **touch** or feel
4. You **taste**
5. You **smell** things

That is called **using your senses**.

How do you **hearing** **sight** **smell** **touch** **taste**

- ▶ See?
- ▶ Hear?
- ▶ Touch?
- ▶ Taste and Smell?

A diagram of a piece of skin.

Your eyes fit into the **eye sockets** in your **skull**.

They are called **eyeballs** because they are like balls.

The white part of your eyes protects the bits inside your eyeball.

The coloured part is called the **iris**.

Your eyes have a very important black dot in the middle. The dot is called a **pupil** and its job is to let light through to the back of your eye. If that didn't happen you wouldn't be able to see.

Dark or light?

When it's dark your pupils get bigger to let in more light.

When you are in bright light your pupils get smaller to protect your eye.

Dark or light?

This diagram shows how light goes through your pupils to the back of your eye.

Behind your pupil you have a **lens**. The lens bends the light that comes through your pupil. The light is bent in a special way so that it sends an upside down picture of what you are looking at onto the back of your eye.

You don't see things upside down because your **brain** uncovers the upside down messages for you so that you see everything the right way up.

The back of your eye has special nerve endings. They send information about what you can see to your brain along a special nerve called the **optic nerve**. Your brain turns the upside down pictures the right way up again so that you can things as they really are – the right way up!

Do you know why you have eyelashes?

Eyelashes grow out of your **eyelids**. They help to keep dust and dirt out of your eyes.

Tears are made under your top eyelids. Every time you blink, tears wash over your eyes and clean them. When you cry the tears drain into your nose through little **tear ducts** at the inside corners of your eyes. That's why you have to blow your nose a lot when you cry.

Nobody really knows why we cry when we are upset.

Your ears help you to hear.

the outside of your ear

Your ear is a bit like a funnel. The outside of your ear collects sounds and they travel down inside your ear.

Where do the sounds go?

This diagram shows you the different parts of your ear.

the outside of your ear

the part that helps you balance

ear drum

bone

nerve from your ear to your brain

nerve endings and liquids are in here

ear canal

tube from your ear to your nose

The sounds go down a tube called the **ear canal**. Then they come to thick skin called the **ear drum**. The sounds make the **ear drum** vibrate (wobble) like a drum vibrates.

the outside of your ear

the part that helps you balance

ear drum

bone

nerve from your ear to your brain

nerve endings and liquids are in here

ear canal

tube from your ear to your nose

When the ear drum vibrates it makes three tiny bones vibrate too. The bones send the vibrations further inside your ears.

the outside of your ear

the part that helps you balance

ear drum

tiny bones

nerve from your ear to your brain

nerve endings and liquids are in here

ear canal

tube from your ear to your nose

The vibrations finally reach a place where there is liquid and hairy nerve endings. The vibrations make the liquid move about and pull on the hairy nerve endings.

the outside of your ear

the part that helps you balance

ear drum

tiny bones

nerve from your ear to your brain

nerve endings and liquids are in here

ear canal

tube from your ear to your nose

The hairy nerve endings send messages to your brain so that your brain can tell you what sounds you are hearing.

the outside of your ear

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A stirrup on a horse's saddle.

This is the smallest bone in your body. It's about 3mm long and because it looks like the stirrups on a horse's saddle, it's called the **stirrup bone**.

This is what the stirrup bone looks like.

Your brain is very clever.

When you hear sounds around you, your brain can work out where the sound is coming from as well as how loud or soft the different sounds are.

You can tell who is speaking just from the sound of their voice.



How do you know what something you touch feels like?

When you feel that something is hot, cold, rough, smooth, soft, hard or pain free it's because nerve endings in your skin have sent messages to your brain.



You have lots of nerve endings all over your skin. That is why you can feel anything that touches you as well as feel anything that you touch.

When you hurt yourself you feel pain. Pain warns you that something is wrong. It helps keep you safe because you learn what will hurt you and what is safe.



You have nerves deep inside your body as well as in your skin. These nerves tell you when you are ill.

If you have a tummy ache it's because nerves inside you are sending messages to your brain that something is wrong with your tummy.



When you taste something you taste with your tongue. Your tongue has tiny bumps on it called **taste buds**.

Your taste buds have nerve endings in them that can send messages to your brain so it can tell you what the different tastes are like.



Science [Link](#)

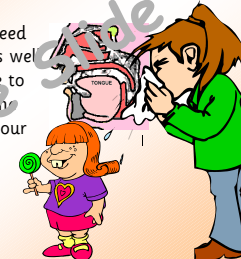
Your taste buds can help you to decide which things are **salty, sweet, sour** or **bitter**. Then you can decide whether you like them or not.

You could try to find out where your tongue can taste different things. Try putting drops of salty water, sugar water, vinegar and strong coffee on your tongue to see where you can taste them the most.



Have you ever noticed that when you have a really bad cold you can hardly taste anything?

That's because we need our **sense of smell** as well as our sense of taste to help us taste all the different flavours in our food.



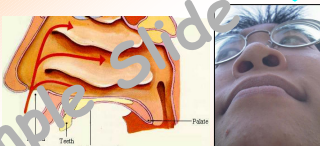
Our **sense of smell** is very important to us. We all know things that smell good to us and things that don't. Our **nose** can help warn us of danger because we can smell things that we know can be dangerous.

When we smell something burning our sense of smell tells us that it is burning and we know that it is dangerous to go anywhere near.

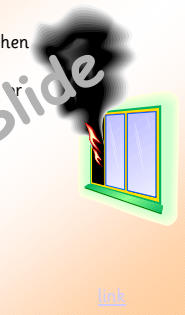


We breathe through our **nostrils** and as we breathe, we breathe in the smells around us.

Any smells in the air you breathe go past tiny hairs inside your nose. These hairs sense the smells and send messages to your brain. Your brain tells you what the smells are like so that you know what they are.



Your brain tells you when something smells good and when something smells bad. It tells you whether a smell is strong or weak and it warns you when there is danger.



Our sense of sight and hearing, Smell and touch and taste Will keep us safe from danger. And help us very much.



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