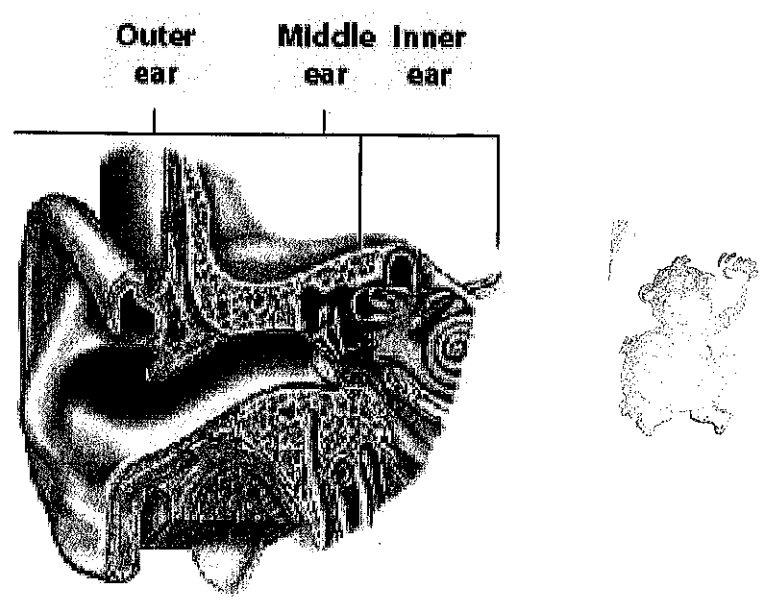


THE EAR



Just think for a minute what it would be like if you couldn't hear. You couldn't listen to music, hear a dog bark, hear the phone ring or hear your friends talking to you. As you can see your ears are important so you need to look after them.

Sound is measured in a measurement called decibels. Sounds over 90 decibels can seriously damage your ears.

How do your ears work? Well first of all there are three parts to your ear: the outer ear, the middle ear and the inner ear. The outer ear is the bit you can see including the ear canal which acts as a funnel to collect the sound waves and send them to your ear drum.

The middle ear is a small space filled with air on the inside of your ear drum. In this part of the ear there are three tiny bones called the hammer, anvil and stirrup. These bones are used to move the sound waves and vibrations to the cochlea. The cochlea is a piece of the ear that looks like a shell.

The inner ear has fluid in it which moves due to the vibrations and moves thousands of tiny hairs on the outside of the cochlea. There are about 17,000 tiny hairs in each ear. These hair cells create an electrical signal which is sent along the auditory nerve to the brain. The brain then works out what you are hearing. It is all very clever.

The liquid in your ear also helps to keep your balance, so your ears are still hearing things even when you are asleep. Ears may be small but they do very important jobs for us so look after them.

How Your Eyes Work

When light rays reflect off an object and enter the eyes through the cornea (the transparent outer covering of the eye), you can then see that object.

The cornea bends, or refracts, the rays that pass through the round hole of the pupil. The iris (the colored portion of the eye that surrounds the pupil) opens and closes, making the pupil bigger or smaller. This regulates the amount of light passing through.

The light rays then pass through the lens, which changes shape so it can further bend the rays and focus them on the retina. The retina, which sits at the back of the eye, is a thin layer of tissue that contains millions of tiny light-sensing nerve cells. These nerve cells are called rods and cones because of their distinct shapes.

Cones are concentrated in the center of the retina, in an area called the macula. When there is bright light, cones provide clear, sharp central vision and detect colors and fine details.

Rods are located outside the macula and extend all the way to the outer edge of the retina. They provide peripheral or side vision. Rods also allow the eyes to detect motion and help us see in dim light and at night.

These cells in the retina convert the light into electrical impulses. The optic nerve sends these impulses to the brain, which produces an image.

