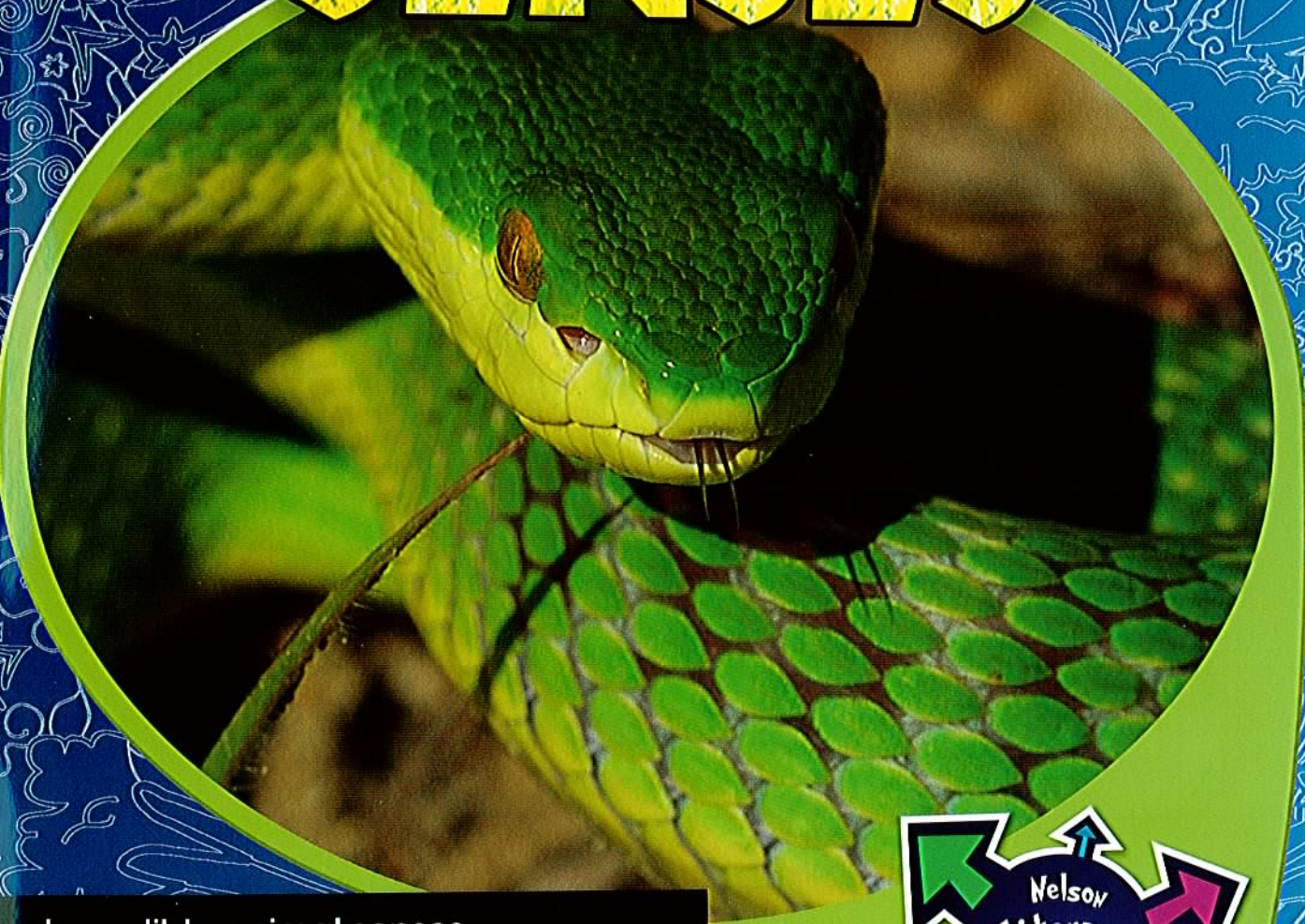
SUPER SURVIVAL SENSES



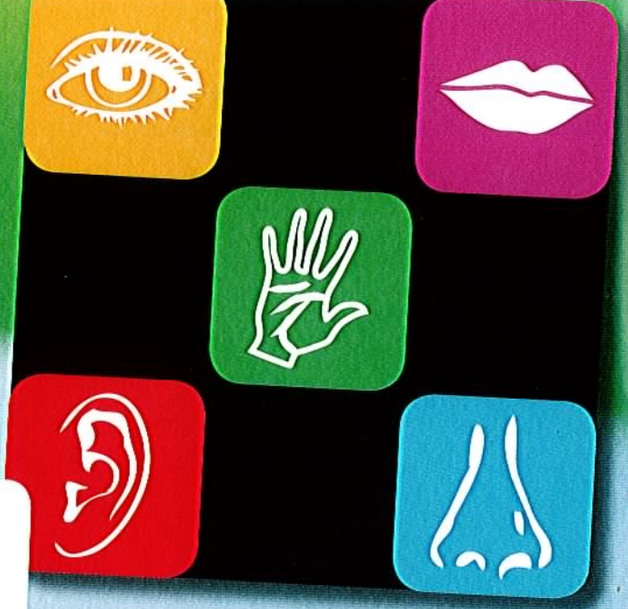
Incredible animal senses
and how they are used for SURVIVAL

Sharon Parsons

Nelson Literacy Directions

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SUPER Survival Senses



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2 How Eyes Work

Find out how eyes and brains work together to help people see things.

TEXT TYPE Explanation

HEALTH FEATURE

Protect Your Eyes

There are many things you can do to care for your eyes. One of these things may be a regular visit to an optometrist.

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3 Amazing Animal Survival Senses

Find out how animals use their senses to help them survive against predators in their environment.

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4 Zebras' Survival Senses

Zebras use their senses, camouflage and speed to help them survive in the African wilderness.

5 The Mosquito's Super Sense of Smell

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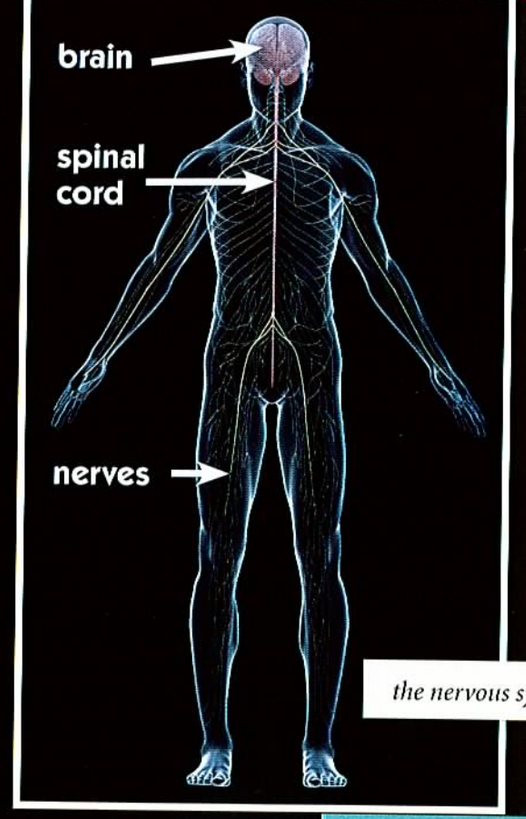
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1 How Many Senses Do We Have?

Make **Sense** of Senses

Humans have five main senses: sight, smell, hearing, taste and touch. The five sense organs are the eyes, nose, ears, tongue and skin.

Nerves send messages from the sense organs along the spinal cord to the brain. It is the brain and the spinal cord that make sense of our senses!



the nervous system

Sense of Sight

The eyes detect, or sense, light bouncing off the things we see. Nerves carry information from the eyes to the brain, which makes sense of what we see.



Sense of Smell

A smell is like a cloud of tiny scent particles floating in the air. The nose detects, or senses, these particles. Nerves carry information from the nose to the brain, which makes sense of what we smell.



Sense of Hearing

The ears detect vibrations in the air from things we hear. Nerves carry information from the ears to the brain, which makes sense of what we hear.





Sense of Taste

The tongue and mouth detect tiny particles that are sweet, sour, salty, bitter or savoury. Nerves carry information from the tongue to the brain, which decides whether something tastes good or bad. Our sense of smell also affects what we taste.

Sense of Touch

Different nerves in the skin detect when the body is in pain, or being touched. Nerves carry information to the brain, which makes sense of what we feel.



Are There More Senses?

The body has other senses, too. One of those senses is called thermoception. It is the sense that senses temperature.

For teacher inspection Only

2 How Eyes Work

Eyes Protect You

Eyes are like "windows to the world".

Light bounces off objects and enters the eyes. Light triggers nerves to send messages to the brain. The brain then decodes these messages into a picture inside the brain.

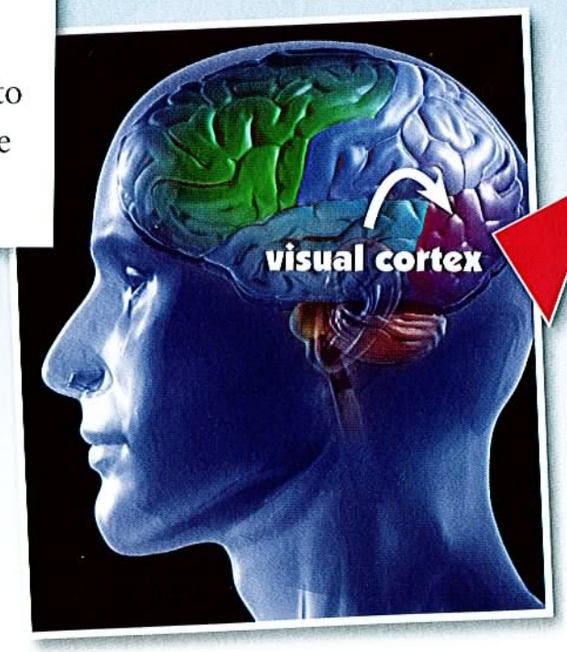
For example, if we look at a car speeding towards us, the brain "warns" us in a flash. This process happens very quickly, so a person can see what is in front of them instantly.

Understanding the sense of sight helps to explain why it is important for everyone to look after their eyes.

TEXT TYPE
Explanation

START

Follow the "light pathway" from the eye to the brain.



Life Science

Why Do We Blink?

People blink about once every six seconds. This helps keep the eye moist. Blinking also stops irritating particles from entering the eyes.

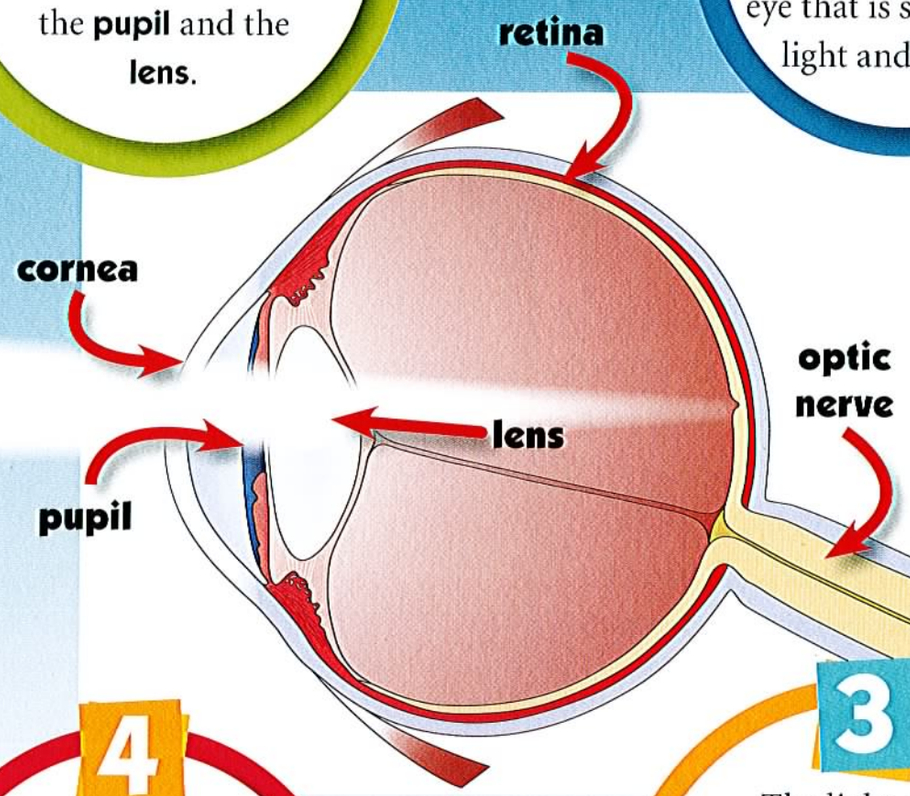
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1

When an eye is open, light comes in through the eye's **cornea** and then goes through the **pupil** and the **lens**.

2

The light then hits the **retina**, an area at the back of the eye that is sensitive to light and colour.



3

The light stops at the retina. Behind the retina, electrical messages are sent along the **optic nerve** to a part of the brain called the **visual cortex**.

4

The **visual cortex** takes these messages and builds a "picture" of what the eyes are sensing, instantly!

HEALTH FEATURE
Protect Your Eyes

Simple ways to protect your eyes are described below.

The Sun: Never look directly at the Sun, even for a moment.

Sunglasses: Wear sunglasses that block out the Sun's ultraviolet-A and ultraviolet-B rays.

Bright lights: Use good light when you're reading, writing or working on the computer. This stops your eyes from getting tired.

Sharp objects: Walk, don't run, when holding sharp objects, such as scissors, pens, pencils and rulers. Hold them down and away from your body.



Keep your eyes protected from the sun with sunglasses.



An optometrist tests a boy's eyesight.

OPTICS AND OPTICAL

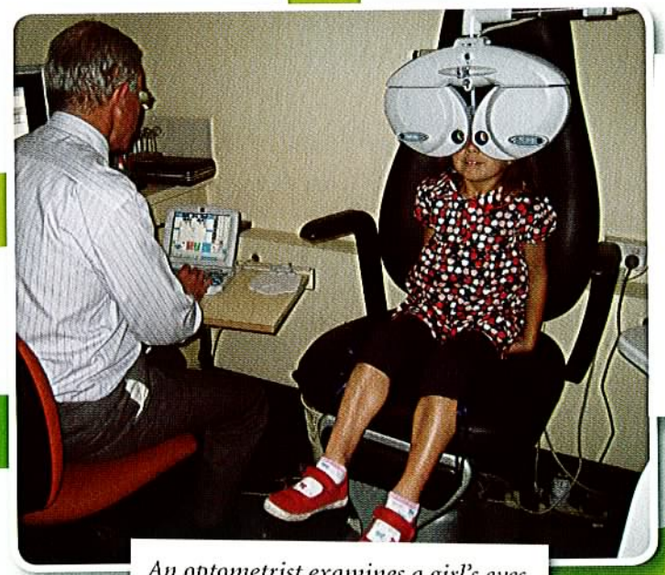
Optics: the study of light and the way it behaves.

Optical: anything to do with light.

Eye Care

Eyes at school: Can you clearly see the words in your books and at the front of the classroom? If not, tell your parents, teacher or school nurse. You may need to visit an optometrist.

Eyes in sports: Wear eye guards when playing games like baseball and cricket to avoid injury. You could wear goggles when swimming in pools.



An optometrist examines a girl's eyes.

OPTOMETRISTS AND OPHTHALMOLOGISTS

Optometrist: someone who tests people's eyes. The tests show if the person's eyes are healthy or if glasses or contact lenses are needed.

Ophthalmologist: an eye doctor.

Life Science

Eye Muscles

The eyes are surrounded by muscles that move them up, down and sideways. The brain controls the eye muscles.



a medical model of the eye

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