Guide Dogs

Learn with Guide Dogs

Eye See

Aims

To learn about sight as one of our senses and explore how the eye functions, leading on to the importance of good eye health.

Outline

- Parts and function of the eye
- Activity – parts and function of the eye
- Vision impairments
- Activity – vision impairments
- Caring for our eyes
- Activity – caring for our eyes

Parts and function of the eye

Our senses tell us about the world through our eyes, ears, nose, tongue, and skin. You may want to explore with the group how they may have used each of these sensory organs today.

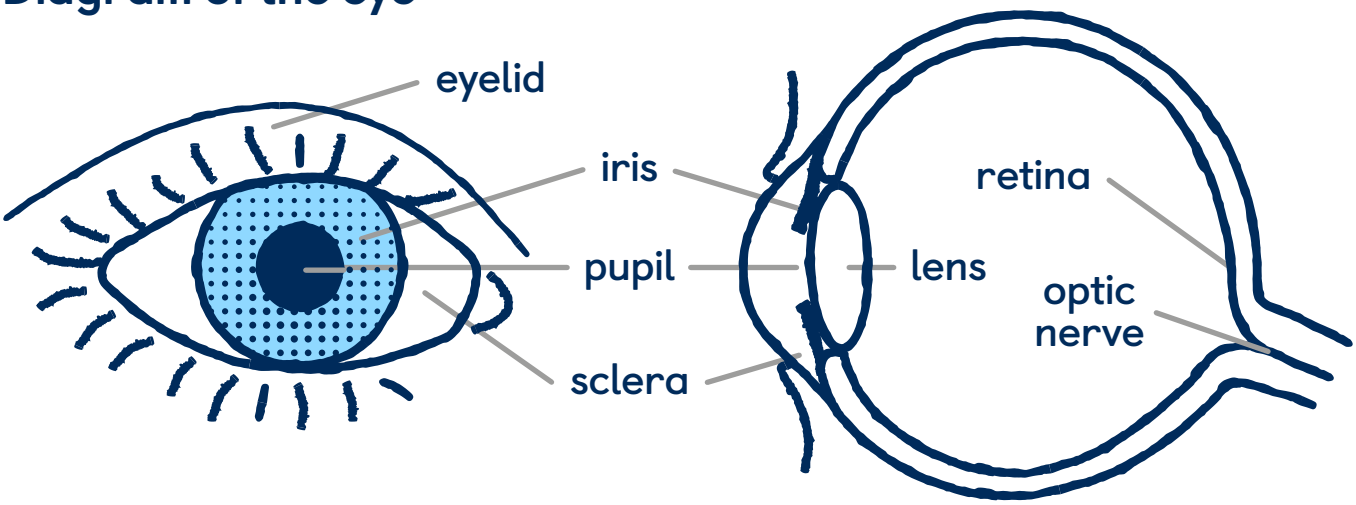
Our eyes are like camera phones, taking and sending picture messages to the brain. They are fluid-filled spheres about the size of a ping pong ball, set into our skull, and protected by eyebrows, eyelashes and eyelids, which block sweat and dirt. Tears keep the eye lubricated and remove anything that gets in our eye.

The average person blinks 15 times per minute, which means our eyes are closed for about 10% of the time we're awake!

The white part of the eye is called the sclera. Light enters through the black opening called the pupil. The coloured circle around the pupil is called the iris and this controls the size of the pupil to let in the right amount of light. When it's dark, the pupil becomes bigger so it can let in more light; when it's bright, this could damage our eyes, so the pupil shrinks.

A lens behind the pupil focuses light onto the retina at the back of the eye. Because the eye is curved, the light is bent so the image on the retina is upside down. Special cells in the retina, called rods and cones, send information about shapes and colours as an electrical signal up to the brain through the optic nerve and the brain sorts out the information, turning the image the right way around.

Diagram of the eye



Activity – parts and function of the eye

Print learner handout for all individuals

Magnifying glasses to share

Pencils to draw the eyes

Pair activity

Eye spy!

Ask the group to get into pairs and use a magnifying glass to help them look closely at their partner's eye.

Draw what they see onto the 'Eye Spy' resource sheet and label their picture using the vocabulary list.

You may want to let them explore the pupil changing size through using a torch to alter the amount of light entering the eye. Remember to remind learners that it is dangerous to look directly at the sun.

Guide dogs, like other dogs, might not be able to see red or green colours because they lack a type of cone cell, but they are much better than us at seeing movement and seeing in the dark. Many animals see very differently to us. Get the group to research interesting facts such as how geckos lack eyelids so use their tongue to keep their eyes clean!

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Learner handout

Eye spy

1

Look closely at someone's eye and draw in detail what you can see.

2

Can you label the different eye parts using these words?

eyebrow eyelashes eyelid

tear ducts eyeball

Challenge words:

pupil sclera iris

3

Investigate what happens to the pupil when it's light or dark.

Your drawing here

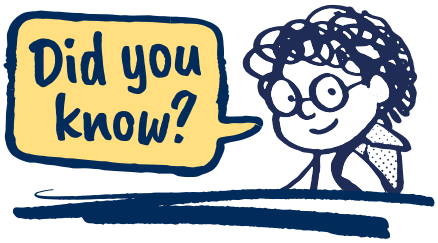
Vision impairments

We all see the world differently.

Some people might not be able to see colours, or some might need glasses to adjust their vision. Sometimes people have a more severe vision impairment that can't be corrected with glasses.

Vision impairments can be caused by lots of different things, like a health condition, family genetics, infections or an accident.

Our video, '**Eye conditions animations**', demonstrates how different vision impairments can affect what people see.



Guide Dogs helps people with sight loss live the life they choose. There are many examples of people with sight loss living incredible lives and achieving great things, both in modern times and through history, from artist Claude Monet to TV personality and author Richard Osman.

Activity – vision impairments

Print group handout

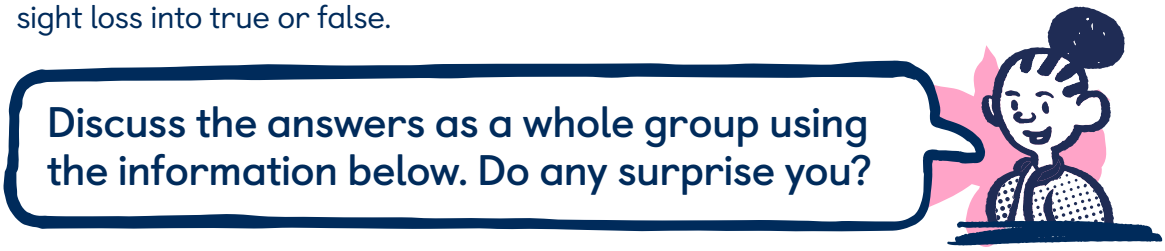
Scissors for cutting the cards

Pair or small group activity

Discuss the answers

Eye see true or false

Learners work in pairs or small groups to read the 'Eye see true or false' cards (page 8) and sort the statements about sight loss into true or false.



Tiredness and stress can affect what people see.

True ✓

Many factors can affect how people see the world around them, including tiredness and stress, which can cause eye muscles to have difficulty focusing.

You must be completely blind to have a guide dog.

False ✗

Most guide dog owners have some remaining vision, but their vision impairment still makes a big impact on their ability to move around or carry out daily activities. A guide dog can help people get out and about safely and confidently.

People with sight loss can play football and go to watch football matches.

True ✓

There are many football fans with sight loss. Some people listen to commentary on the radio and many TV channels have audio description. Football clubs may also have seats for fans with sight loss and audio description through headphones. There are many blind and partially sighted football teams that compete, and blind football is played at the Paralympics. A ball with a bell is used, which means cheering at games is forbidden.

Activity – vision impairments continued

All people with sight loss need to wear dark glasses.

False X

Some people may benefit from wearing dark glasses as it helps reduce glare from the sun or bright lights, but this benefit is not for all vision impairments. What everyone sees is unique and different vision impairments are affected by light differently.

Sight loss only affects older people.

False X

Sight loss can affect people of all ages, though as we get older, we are more likely to experience it. Every day, around four children in the UK are registered blind or partially sighted.

People with sight loss have super hearing.

False X

It's a myth that people with sight loss have better hearing, smell, touch or taste. However, people with sight loss may often be more aware of their senses due to a need to rely on them more heavily than those with full sight.

Dr Patricia Bath (1942–2019) was an American doctor who specialised in eye conditions. Not only was she a champion for people who couldn't afford eye care, but she also invented a laser device to remove cataracts, where the lenses in our eyes become cloudy. A fantastic hero of science to research, learners could create a presentation answering, 'Who is Patricia Bath?'

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Group handout

Eye see true or false

Tiredness and stress can affect what people see.

✓ **True or false?** ✗

All people with sight loss need to wear dark glasses.

✓ **True or false?** ✗

You must be completely blind to have a guide dog.

✓ **True or false?** ✗

Sight loss only affects old people.

✓ **True or false?** ✗

People with sight loss can play football and go to watch football matches.

✓ **True or false?** ✗

People with sight loss have super hearing.

✓ **True or false?** ✗

Caring for our eyes

Looking after our sight is important and there are four simple things to remember to help keep your eyes and vision healthy.

Get tested

Sight tests are free for everyone under 16 years old. It's important to have our eyes checked by an optometrist every two years. If a problem is caught early, it might stop something serious developing.

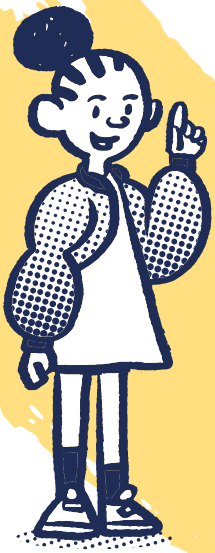
Remember to tell someone if what you see changes.

Eat a rainbow

Young people's eyes need nutrients to grow healthily so eat right to take care of your sight. Load up on a rainbow of coloured fruit and vegetables and remember that foods like chicken, eggs, fish, and whole grains are packed with eye-friendly stuff too!

Protect, protect, protect

From the sun, germs and anything that could injure your eyes. Try to stay out of the sun when it's strong and use sunglasses with UV protection. Make sure hands are washed before going near your eyes and if you're doing an activity that needs eye protection – wear it!



Get active

Spending two hours or more a day outdoors can help keep your eyes healthy. It also encourages you to be more active and take breaks from looking at screens. Remember the 20-20 rule: look up from a screen at least every 20 minutes to relax your eyes for 20 seconds.

Activity – caring for our eyes

Print learner handout for all individuals

Pens and pencils

Scissors to cut out glasses

Eye health focus frames

Learners can use our 'Eye health glasses' resource sheet to communicate to others how to care for our eyes.

You may want to provide them with p9 – the 'caring for our eyes' information. Each young person should have a glasses template on which they can fill the frames with eye health information through adding drawings, such as pictures of fruit and vegetables, and writing statements This can spill out over the frames if needed. Once they have finished, they can cut out and assemble their glasses to wear.

Investigate how much light is blocked by different sunglasses by shining a torch through the lens and measuring what comes through – this can be through children subjectively assigning a simple rating for how much light gets through or by using a datalogger. Go a step further on a sunny day and test how much dangerous UV light passes through by using colour-changing UV beads with the sunglasses placed on top.

Guide Dogs

Learner handout

Eye health glasses

Decorate these glasses frames to spread the word about different ways to look after your eyes. Cut out and stick together to wear your message!