

Light and the eyes 1

God created light

Bible verses to read: Genesis 1:1-5

Now copy the sentences filling in the missing words:

Before God created light there was only

d_____.

God said that the light was g_____. He called the light

d_____ and the darkness n_____.

Think:

Why did God call the light good?

Now read from the Bible: 1 John 1:9

Copy and fill in the missing words:

God is l_____ and in Him there is no d_____.

Think and write:

What is the meaning of *light* in this Bible verse?

What is the meaning of *darkness* in this Bible verse?

Draw:

(1) A person living in light

The Bible tells us that living in the light means obeying God.

Draw something that this person might be doing, like sharing or caring.

(2) A person living in darkness

The Bible tells us that living in darkness is *not* following God.

This person might be stealing or fighting.

Read and write this Bible verse from John 1:7

Walk in the _____ as He is in the

_____.

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Eyes are important

When God created light He also created eyes, so that people and animals could see His creation. Imagine trying to live without eyes.

1. What things would be difficult to do?
2. What favourite things couldn't you see?
3. What dangers would there be if you didn't have help from others?

How eyes help us

Think and write:

How do eyes help us to stay alive?

e.g. Eyes help us eat the right food.

How eyes help animals

Think and write:

How do eyes help animals to stay alive? Think about the difference between meat-eaters and plant-eaters.

e.g. A lion needs eyes to spot other animals that it wants to hunt.

Think and write:

Why did God give us two eyes and not one eye?

Eyes are important to Jesus

Jesus touched many eyes and healed many blind people.

Read: Matthew 9:27-29

Fill in the missing word:

Jesus healed the blind men because they bel_ _ _ _ _.

Draw a picture of Jesus healing the blind men.

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Eyes are an amazing part of God's creation

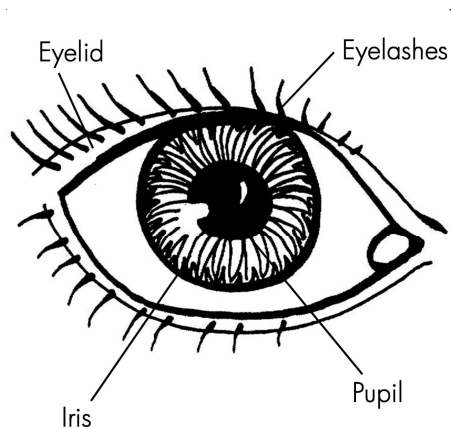
Did you know that inventors have copied ideas from God's creation? The first cameras worked like the eye. They were made of a strong black box. It let light in at only one spot called the *lens*. In the box there was a special black strip called a film. The light coming through the lens made pictures on the film.

Draw:

A picture of your eye, just as you would see it in a mirror. Draw the *pupil* (the black dot in the middle) and label it on the drawing. Draw the *iris* (the round coloured part around the pupil) and label it. You can also draw and label the eye lids and eye lashes.

Find out:

What happens to the pupil when you change from darkness to light?



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The inside of your eye

Draw:

A picture of the eye that shows the inside of the eye. Mark on your drawing *the iris, the pupil, the lens, the retina*.

Our eyes are more perfect than a camera. At the back of the eye is the *retina*. That is like the film. Light gets into the eye through the *lens*. The coloured part of the eye is the *iris*.

What colour are your eyes?

The iris opens and closes to let the right amount of light in.

The *pupil* is the black dot in the middle of your eye. In bright light the pupil is small. This stops too much light getting in. On dim light or darkness the pupil is large because it wants to get as much light for seeing.

Look in a mirror and to see the iris and pupil of your eyes.

Draw:

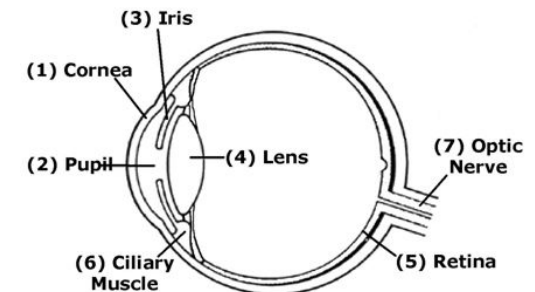
- (1) an eye in bright light
- (2) an eye in dim light

Find out

What are the colours of the eyes of your family?

What colours of the eyes of your friends?

Make a chart or graph to show this information.
How many blue? brown? green? hazel?



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Caring for your eyes

We know how important our eyes are. We should take good care of them. Think about ways in which your eyes could become damaged.

Make:

a safety poster about the care of eyes.

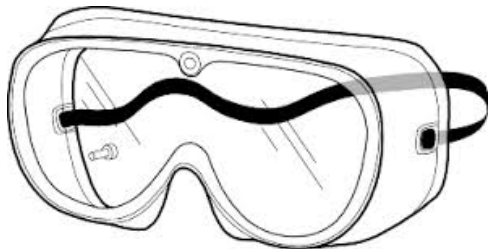
Make a chart divided down the middle. On one side write and draw the ways eyes can become damaged.

e.g. too much bright light or sunlight; watching an eclipse; sharp pointy objects; reading in dim light; spray cans containing chemicals that can harm your eyes; throwing sand or stones.

On the other side of the chart write and draw how you could protect your eyes from damage.

Why do you think God created our eyes with eye lids and eye lashes?

Sometimes workers wear goggles to protect their eyes. What work might they be doing?



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Our eyes are lights

Read from the Bible:

Matthew 6:22-23

These verses tell us that the thoughts and feelings inside us, like love, happiness and hate, show through our eyes. Our eyes help to make an expression on our face.

What other parts of our face do we use to show our feelings?

Answer these questions:

How do our eyes look when we are happy?

How do our eyes look when we are sad?

How do our eyes look when we are angry?

Hint:

You may like to ask someone to make these expressions for you. You may like to draw pictures as part of your answers.

Copy and fill in the missing word:

When we are sad, _____ come from our eyes.

Think about this and write your answer:

When people have done something wrong, like telling a lie, they don't want to look into the eyes of another person. Try to guess why this is so.

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Seeing Jesus, but not through eyes

Have you ever heard someone say, “I see”? But the person is not talking about seeing with their eyes.

What the person really means is “I understand”.

When Jesus tells us about “seeing” in the Bible, He usually means “understanding”. It is possible to know a lot about Jesus and the Bible, but not really understand His love for us. Many people may know Bible stories, but they don’t understand that they can come to know Jesus as a person if they ask Him to forgive them for their sin and invite Him to become a friend.

We may see a picture of Jesus, but to really “see” Jesus we must get to *know* Him as a person and a friend. Jesus helps us to understand more about Him from the Bible.

The Parables

Jesus often told stories called parables. These were stories with hidden meanings. Many people listened to the stories but did not understand the hidden meaning. They did not “see” the meaning. They did not understand.

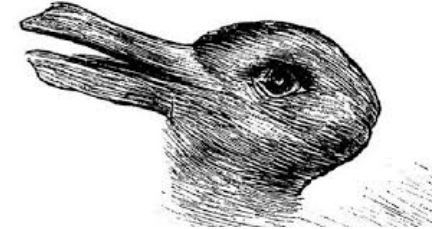
A project

Find a parable from the Bible. Write the story in your own words. Then explain the hidden meaning.

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Optical illusions

Look at this optical illusion:



This is a picture that can be seen two ways. Can you see a rabbit or a duck? Try to see both.

Perhaps you didn’t see the rabbit at first, or perhaps you didn’t see the duck at first.

If the artist wanted us to see a rabbit and we could only see a duck, then we wouldn’t be getting the right meaning.

Sometimes people don’t get the right meaning from the Bible. They have to ask Jesus for special ‘eyes to see’ the meaning of the words of the Bible.

To “see” Jesus, we must get to **know** Him. Jesus helps us to understand his word.

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Seeing Jesus



Try to find the face of Jesus in this photograph. It is a photograph of melting snow. A photographer who did not believe that God existed, saw the face of Jesus in the photograph he had taken. He no longer doubted who Jesus really was!

To find the face, look at the larger black parts.

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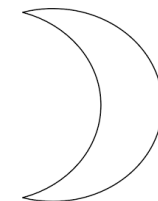
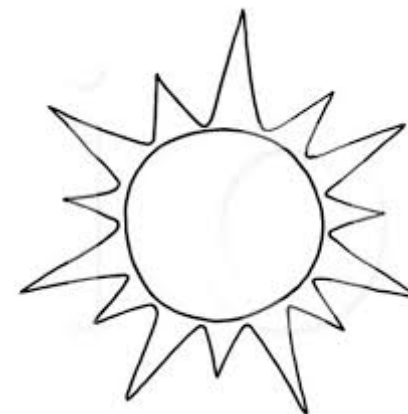
Light and Colour

It is light that lets you see things.
In the dark you cannot see at all.

The Sun gives us daylight.
The Moon gives us moonlight.
Fire gives us light.
Electricity gives light.
God made these things to give us light.

The Sun sends out rays of light. It shines on the Earth.
But the Sun shines only on one side of the Earth at a time. Half the Earth has daytime while half the Earth has night time.

The moon is like a giant mirror.
It bounces sunlight on to the earth.



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What makes shadows?

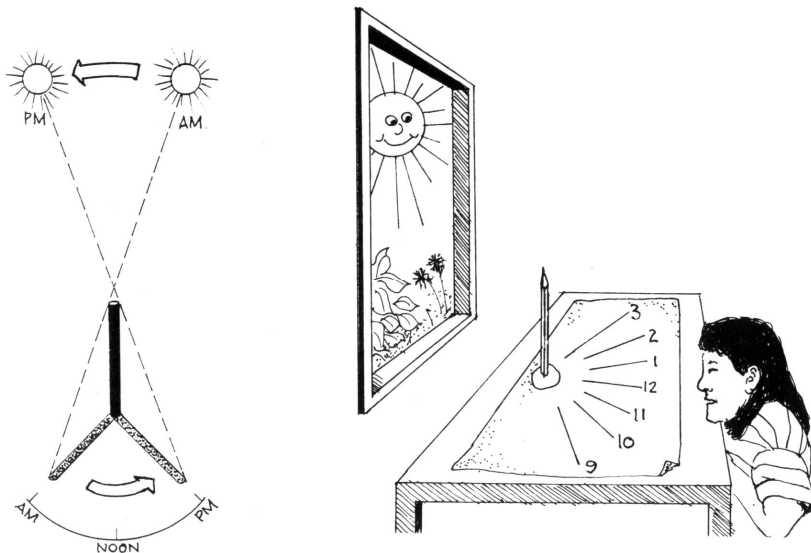
Shadows are made when something blocks the light shining on it.

A sun dial

In the olden days, people did not have clocks like the ones we have today. They measured time by the sun. They could tell the time by the length of the shadow made by a shadow stick (also called a Sun dial).

To make a sun dial:

1. Cut a circle from stiff cardboard to make a dial.
2. Push a sharp pencil or skewer through the middle of it.
3. Push the pencil into the ground.
4. Mark on the dial where the pencil's shadow falls each hour.



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What is white light?



You can make a rainbow colour spinner. When you spin it you will see white light.

White isn't a colour, but different colours together make white. Light passes through some materials, like glass or water. The light rays bend when they pass through a glass prism or water droplets in the sky.

The different colors that make up white light become separated. This makes a rainbow.

Draw a rainbow showing the seven colours in the right order. Red, Orange, Yellow, Green, Blue, Indigo, and Violet. (Red is at the top edge of the rainbow and violet at the bottom.)

What is white light?

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Colour mixing

What happens when you mix colours together?

If you mix colours together you will make other colours.

What happens when you mix:

Blue and yellow?

Yellow and red?

Red and blue?

Red, blue and yellow?

Red, blue and yellow cannot be made by colour mixing.

They are called Primary colours.

How do you make brown?

What are your favourite colours?

Black and white are not colours. They are tones.

What happens when you mix black and white?



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Light Facts

What is light?

Light is a form of energy which our sense of sight can detect. It is made of electro-magnetic radiation and travels in a straight path.

What is the speed of light?

The speed of light is the speed at which light travels. It is about 300,000 kilometres per second. Nothing travels faster than light.

Why are there different colours of light?

There are different colours of light because they are light waves which have different wavelengths. Red light has the longest wavelength while violet light has the shortest wavelength.

What is reflection?

The bouncing back of light waves when they hit an object with a very smooth and shiny surface, like a mirror, is called reflection.

What is refraction?

The bending of light as it passes from one transparent substance to another, like air to water, is called refraction.

Write these questions and answer give short answers, (no more than twelve words per answer)