

# Unidentified Flying Objects

In 1947 a pilot called Kenneth Arnold was flying over Mount Rainier in Washington, USA when he saw some strange crescent-shaped aircraft moving at huge speed.

Arnold described the objects as flying like a saucer would if you skimmed it across the water. Newspaper reports then called them 'flying saucers', and this name has been used to describe many UFOs (Unidentified Flying Objects) ever since.

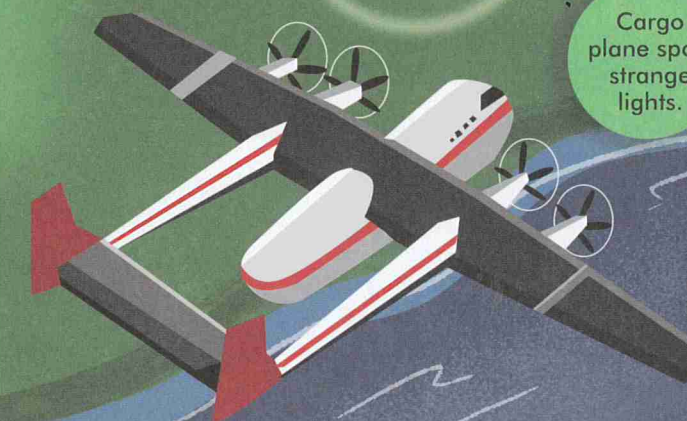


During the 1970s many people reported seeing large triangular aircraft moving slowly and silently across the sky. These mysterious objects were seen mainly across the skies of England and Europe. They did not look like any aircraft ever seen before.



In 1974 people in Llandrillo, Wales were frightened by a massive explosion and rumbling sound. They could also see bright lights moving quickly across the night sky. Army officials soon appeared on the scene and stories spread that a UFO had crashed on a nearby mountain. It was rumoured that its alien passengers had been taken away in secrecy by the army.

In 1978 in New Zealand strange lights were spotted in the skies off the coast of Kaikoura. Air traffic controllers could not identify them as any known aircraft. Many anxious people called the local police as they could see powerful beams of light being projected on to the sea from the craft.



Cargo plane spots strange lights.

These are just a very few of the thousands of stories told about UFOs. What are these objects and where do they come from?

## Unidentified Weird Lights

### Hessdalen Lights

Yellowish, bullet-shaped lights and small red dots were seen in the sky in a remote region of Norway in the 1980s. Investigators flashed a laser beam at one light and it seemed to send answering flashes.



### Sea Lights

For centuries sailors have reported seeing swirling wheels of light below the surface of the sea in the Persian Gulf and Indian Ocean. The wheels sometimes appear to rise spookily above the water.



### Foo Fighters

Mysterious balls of light were seen in the skies by World War Two fighter pilots in the 1940s. These unidentifiable lights would fly near to or alongside their aircraft.



Turn over to read the **case file** notes...



# CASE FILE - UFOs

The evidence so far...

Turn back to read the stories behind the case file...

**WITNESSES**  
Thousands of people all over the world.

## Key Witness

Kenneth Arnold, a pilot, who first described UFOs as 'flying like a saucer'. He became the world's first private UFO investigator. He interviewed many other people who claimed to have seen strange flying objects in the sky.

An FBI officer interviewed Kenneth Arnold and stated: 'It is the personal opinion of the interviewer that he actually saw what he states he saw.'



## Time

Modern sightings began with Kenneth Arnold in 1947. Many of the reports date from the era of humans' first space exploration. Perhaps people had spaceships on the brain!



## Description

Different shapes and forms. After the 'flying saucer' label was used many people said they had seen saucer-shaped UFOs.

## Alien Word ufology

(you-follow-gee) is the study of unidentified flying objects (UFOs).

## Evidence

Many photos and films. These are easy to fake or take from an angle that makes something normal look weird.

The Kaikoura UFOs were captured on film by a journalist on board a cargo plane. You can hear the real fear in the voices of the witnesses on the soundtrack.



## Main theories

UFOs are really aircraft, weather balloons, satellites, or a trick of the light.

Over 20 different theories were suggested for the Kaikoura sightings, but it is still not known what those UFOs were doing there or where they had come from.

Arnold was seeing reflections on his aircraft canopy, missiles, snow flurries or birds in flight. Arnold totally disagreed with these suggestions.

Flying triangles were stealth bombers and test planes, but there has never been any official government explanation.

Could the Llandrillo incident have been an earth tremor or hunters with powerful lights? But why did the army appear so quickly on the scene and warn people to stay away?



## Conspiracy Theory

Many UFO hunters think that governments around the world are hiding information about UFOs and their alien passengers.

# CASE FILE - Lights in the Sky

## Hessdalen Lights

Were they caused by something unusual in the rocks of that area? But why did the lights seem to 'answer' the laser beam?

## Sea Lights

Could they be huge numbers of glowing, phosphorescent sea creatures? But why in a wheel shape? Could it be alien craft under the water?

## Foo Fighters

Was it a secret weapon of some sort? But they never harmed the fighter planes.



# CASE FILE - Bigfoot

The evidence so far...

Turn back to read the stories behind the case file...

## Bluff Creek Video

The film taken in 1967 by Roger Patterson shows the creature turning to look at him and walking rapidly into the woods.

Is it just someone in a gorilla suit?

The Disney film company said at the time that it would have been very difficult and expensive to fake this and the movements of the animal.

## Photos

A large number of these exist. Most of them are pretty blurry, but the people who took them were shocked and scared.



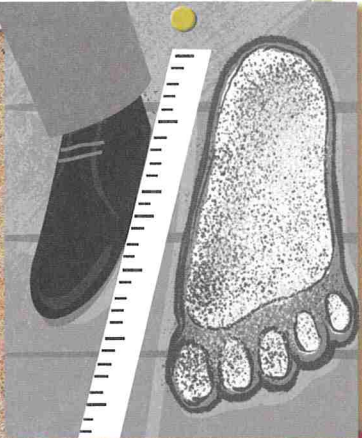
No bones or bodies have ever been found!

## Giant Footsteps

Many Sasquatch footprints have been seen over the years and plaster casts have been taken of some of them.

It is easy to fake these and some people have even admitted to making enormous wooden feet to produce joke prints.

But some Bigfoot tracks are so detailed that 'fingerprints' (or dermatoglyphs) can be seen and these are very hard to fake.



## Witness Statements

There is a long history of sightings. Does this make it more likely that there is some truth in them?

'My first impression was of a huge man, about six feet tall, almost three feet wide... covered from head to foot with dark brown silver-tipped hair.'

William Roe,  
Highway Worker,  
1955.

'I am not entirely sure what I saw that day but I know it was not a bear and it was not a human.'

14-year-old boy  
out hunting,  
1990.

Newspapers and the internet mean that Bigfoot stories can be spread all round the world. Maybe some people might make up a sighting to have their moment of fame?

## Bigfoot Identikit

### Height:

1.8-3 metres (6-10 feet).

### Shoulders:

91 cm (3 feet) wide.

### Fur:

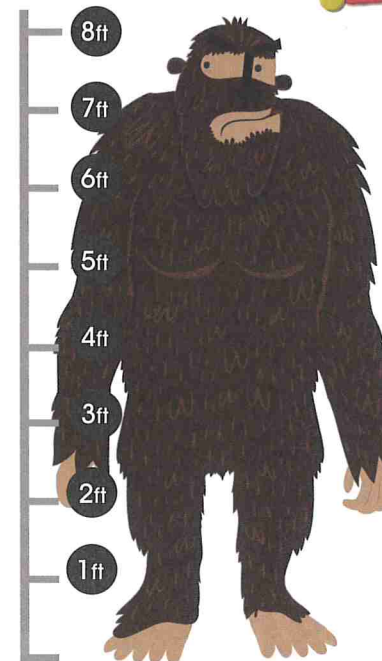
dark brown or reddish brown, none around mouth and eyes.

### Head:

conical, with ears on side.

### Feet:

30-55 cm (1-1.8 feet) long.



Bigfoot is a kind of human. Could it be a 'missing link' between primitive humans and us?

Bigfoot is a bear. But bears don't generally walk on hind legs and their ears are on top of their heads.

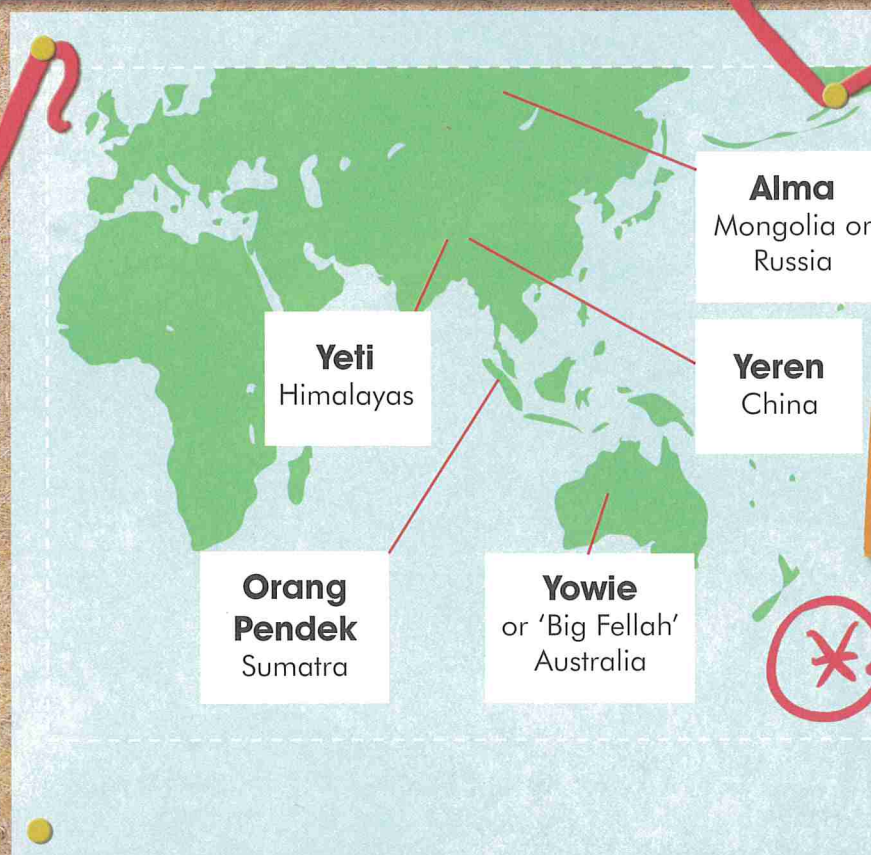
## Main Theories

Bigfoot does not exist!

Bigfoot is related to a type of giant ape called Gigantopithecus that died out 100,000 years ago.

## Location

Mainland Canada and USA, but most often in the vast, deep forests of the Northwest regions. Plenty of hiding places for a mysterious beast.



## Further Investigations

Other forms of ape-men or 'wild men' to find out about.

Camp out in the woods if you dare!



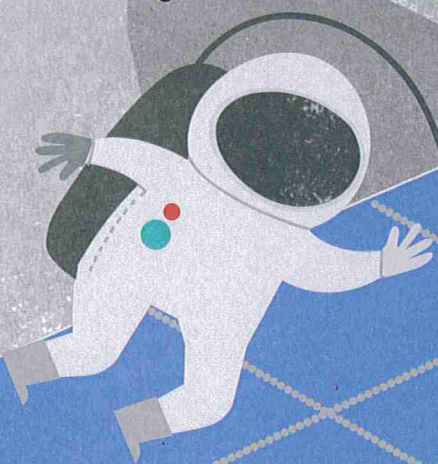
# AT HOME IN SPACE

## INTERNATIONAL SPACE STATION

Working laboratory that  
meets astronauts from  
many different countries.  
It's bigger than a six-  
bedroomed  
house and orbits  
386 km (240 miles)  
above Earth.

## SPACEWALK

A space walk is when an astronaut  
goes outside the space  
station to repair something  
or to carry out an  
experiment. A space walk  
usually lasts between five to  
eight hours depending on  
the job that needs doing.



## STRAPS AND FASTENINGS

Everything, even really heavy objects,  
floats in the space station because  
the force of gravity that normally pulls  
things down to Earth is not  
very strong in space. Straps,  
fastenings and Velcro are essential  
to keep things where you  
can find them.

## VIEW FROM SPACE

The crew can see the sun  
setting and rising 16 times  
a day as the space station  
orbits the Earth once every  
90 minutes. The views are  
spectacular.

## SPACE MEALS

Food is ready to eat  
from specially prepared  
packages. No plates are  
needed. Sometimes a cargo  
vehicle brings in fresh fruit,  
but there's no pizza  
delivery in space!

## DRINKS IN SPACE

Astronauts drink out of  
watertight containers  
with straws to prevent  
any drops escaping.  
Water droplets are very  
dangerous inside the  
space station as they  
can float  
around and  
damage  
equipment.

## CREW CABIN

Each astronaut has  
a tiny cabin that can  
fit just one person.  
Sleeping-bags  
have to be hooked  
to the wall so they  
don't float off.

## CURIOUS WORD

## MICROGRAVITY

means that even heavy things  
seem not to weigh anything and  
people and objects can float  
around. There is only a small  
(‘micro’) amount of gravity in a  
space station that is orbiting, or  
going round, the Earth.

## SPACE POTTY

This is a suction-system toilet  
that works like a vacuum  
cleaner to make sure  
everything gets sucked into  
a waste tank. It is still very  
important to aim well!

## URINE FUNNEL

This yellow  
funnel catches  
pee that is  
then recycled  
into clean  
water.  
Water is very  
precious  
in space.

## EXERCISE

Bones can get very weak  
in space so the crew must  
exercise for at least two  
hours every day to keep  
them strong.





# ANIMALS ON DUTY

## DOG DETECTIVES

Sniffer dogs are trained to find illegal drugs, guns, explosives or blood at crime scenes. Search dogs are used to find missing people and bodies.



## WAR DOGS

have been used in wartime since ancient times. Sergeant Stubby, a Boston Bull Terrier, is famous for having captured a spy during World War One!



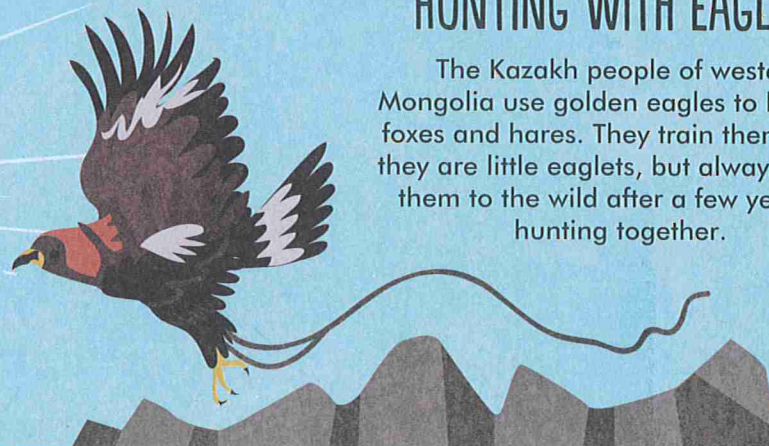
## SIMON THE CAT

Simon was the Captain's cat on HMS Amethyst during World War Two. Even though he was wounded, he kept everyone cheerful during a terrible attack.



## HUNTING WITH EAGLES

The Kazakh people of western Mongolia use golden eagles to hunt for foxes and hares. They train them when they are little eaglets, but always return them to the wild after a few years of hunting together.



## MEDAL WINNERS

The Dickin Medal is a special award for animal bravery in wartime. Since 1943 it has been awarded to 32 pigeons (used as messengers), 29 dogs, three horses and Simon the cat.



## CURIOUS WORD

## DOMESTICATED

is used to describe pets or other animals that are trained to live or work for humans.

## SMELLING SKILLS

Dogs can help scientists find threatened species like bumblebees. They can also sniff out cancer in humans and let people with diabetes know when they need their medicine.



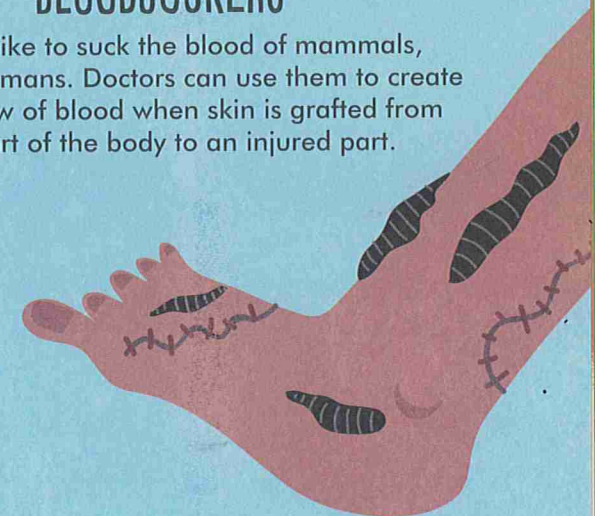
## DOCTOR RAT

In Tanzania in Africa they have trained rats to sniff human spit to see if a person has a nasty illness called tuberculosis. The rats can do it in minutes and this means the person can be helped straightaway.



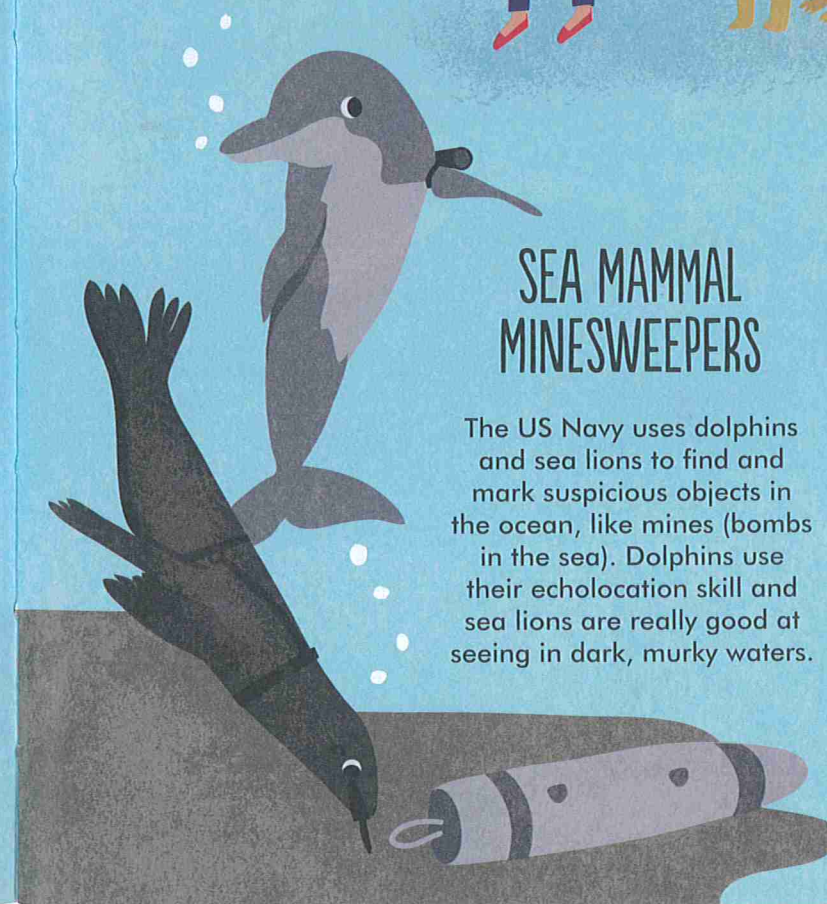
## BLOODSUCKERS

Leeches like to suck the blood of mammals, including humans. Doctors can use them to create a good flow of blood when skin is grafted from one part of the body to an injured part.



## SEA MAMMAL MINESWEEPERS

The US Navy uses dolphins and sea lions to find and mark suspicious objects in the ocean, like mines (bombs in the sea). Dolphins use their echolocation skill and sea lions are really good at seeing in dark, murky waters.



## BEST-FRIEND DOGS

Guide dogs are trained to help blind people at home and when they are out and about. Hearing dogs will nudge or put a paw on a deaf person to alert them to noises like the telephone, doorbell or an alarm.





# LEVER CAMOUFLAGE

## PRETEND TO BE DEAD

oakleaf butterfly looks just like a dead leaf when it folds wings. Even the veins underneath look like those on a leaf. No wonder its other name is dead-leaf butterfly!



## INVISIBLE TOAD

and toads in the rainforest have to be able to hide from y predators. The Asian horned toad can blend in with its surroundings on a bed of rotting leaves.



## HIDDEN FAWN

Newborn baby deer have markings on their coats to look like sunlight coming through the leaves in a forest. They keep very still so predators cannot see them.



## CAMOUFLAGE

Most wild creatures are difficult to see because their shape or colour helps them blend into where they live. Camouflage can help animals to hide from predators or to hunt for prey.

## FAKE WASP

The wasp beetle pretends to be a wasp with its black and yellow warning stripes. It is handy for protection to look fiercer than you are.



## SPOTTY SHARK

The spotted wobbegong is a type of carpet shark that is flat and patterned pale yellow or greenish brown with spots. This is superb camouflage for lurking on all types of seabed. It will give you a nasty bite if you step on it!

## CURIOUS WORD

### MIMICRY

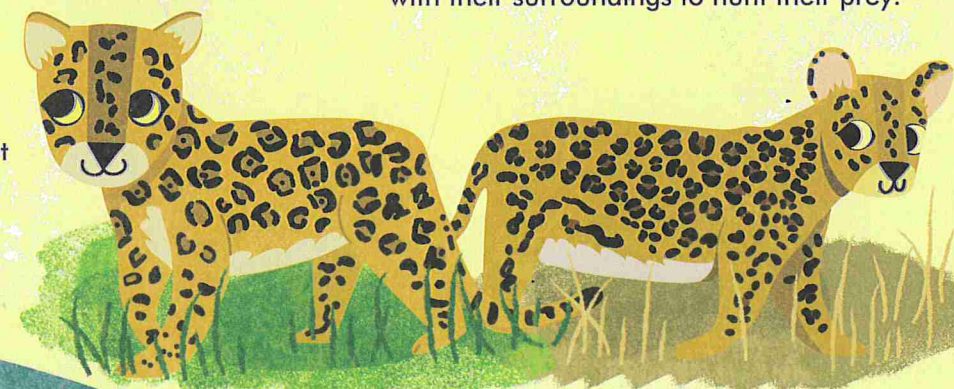
is when a creature pretends to be something else to protect itself or to find prey.

## SHIMMERING STRIPES

When zebras stand together they are a confusing mass of black and white patterns that make it difficult for a lion to nab one! In the shimmering heat haze of Africa the zebra's stripes blur.



Ocelot



Jaguar

Leopard

## COLOUR-CHANGE CUTTLEFISH

These are masters of disguise and can change their colour and even the texture of their skin to match different types of seabed. They can even disguise themselves as clumps of floating seaweed!



## ARCTIC FUR

The beautiful arctic fox is dark in the summer and white in the winter snows. Its thick fur even covers the soles of its feet.



Tiger

## INVISIBLE CATS

Tigers, jaguars, ocelots and leopards are all members of the cat family with beautiful camouflage markings. They can blend in with their surroundings to hunt their prey.



# GENTLE GIANTS UNDER THE SEA

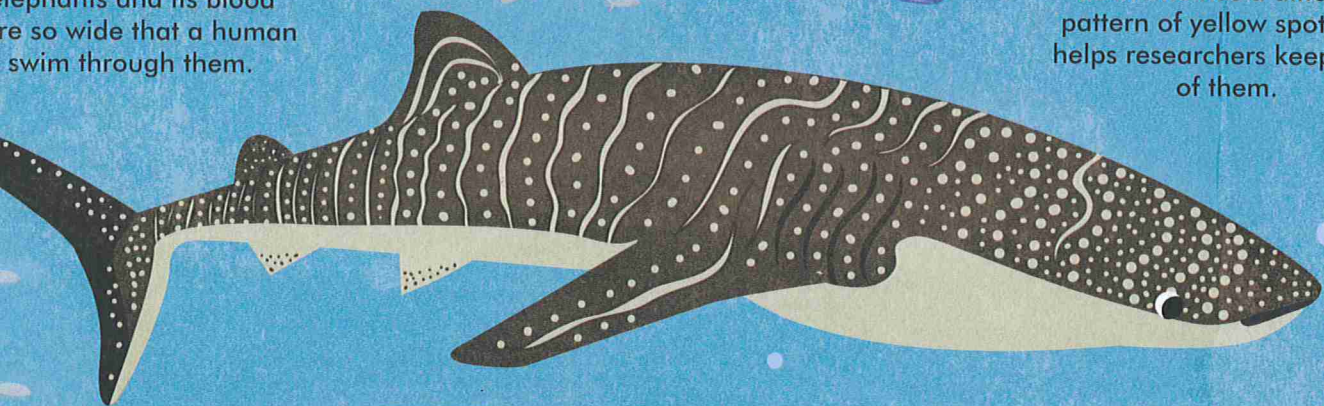
## BLUE WHALE

The blue whale can grow as long as a basketball court and is the largest animal ever to have lived on Earth. It weighs as much as 30 elephants and its blood vessels are so wide that a human could swim through them.



## WHALE SHARK

Luckily for divers this is the biggest fish in the world only because it eats plankton and small fish. The largest one found was 13.5 metres (44 feet) long. Each one has a different pattern of yellow spots that helps researchers keep track of them.



## DUGONGS AND MANATEES

Many stories about mermaids may be based on seeing these shy and gentle creatures. They are sometimes called 'sea-cows' because they graze on underwater grasses.



Dugong



## CURIOUS WORD

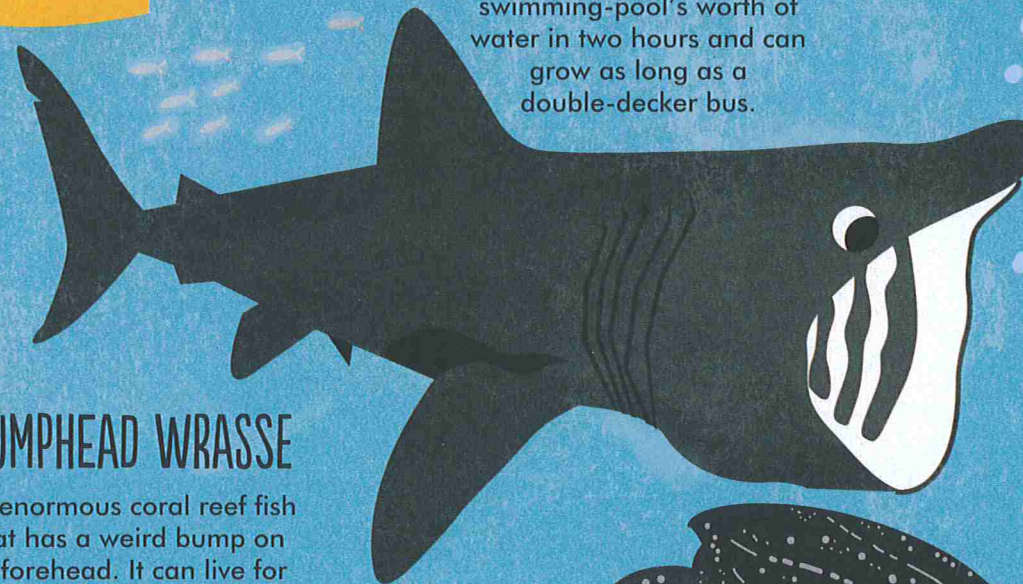
### CETACEAN

This is the word for a sea mammal that has to come up to the surface to breathe. Cetology is the study of whales, dolphins and porpoises.



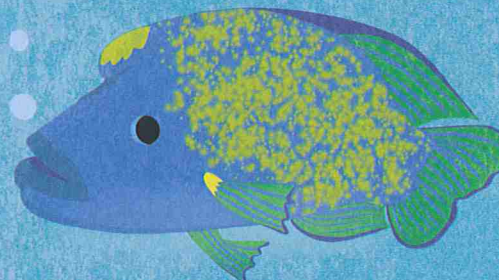
## BASKING SHARK

This mysterious but gentle creature feeds on plankton with its huge mouth. It can filter an Olympic swimming-pool's worth of water in two hours and can grow as long as a double-decker bus.



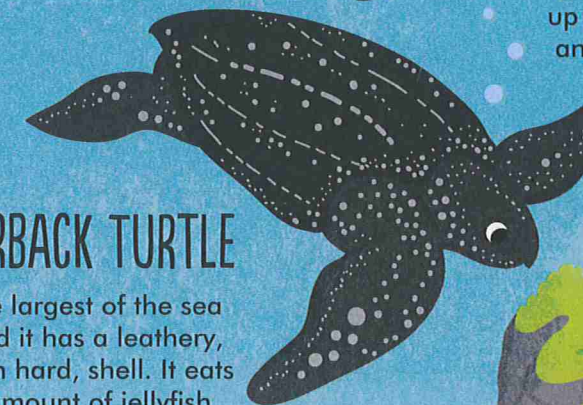
## HUMPHEAD WRASSE

An enormous coral reef fish that has a weird bump on its forehead. It can live for up to 30 years and change from being female to male and back again. It is really friendly to divers and will come up to be patted just like a dog.



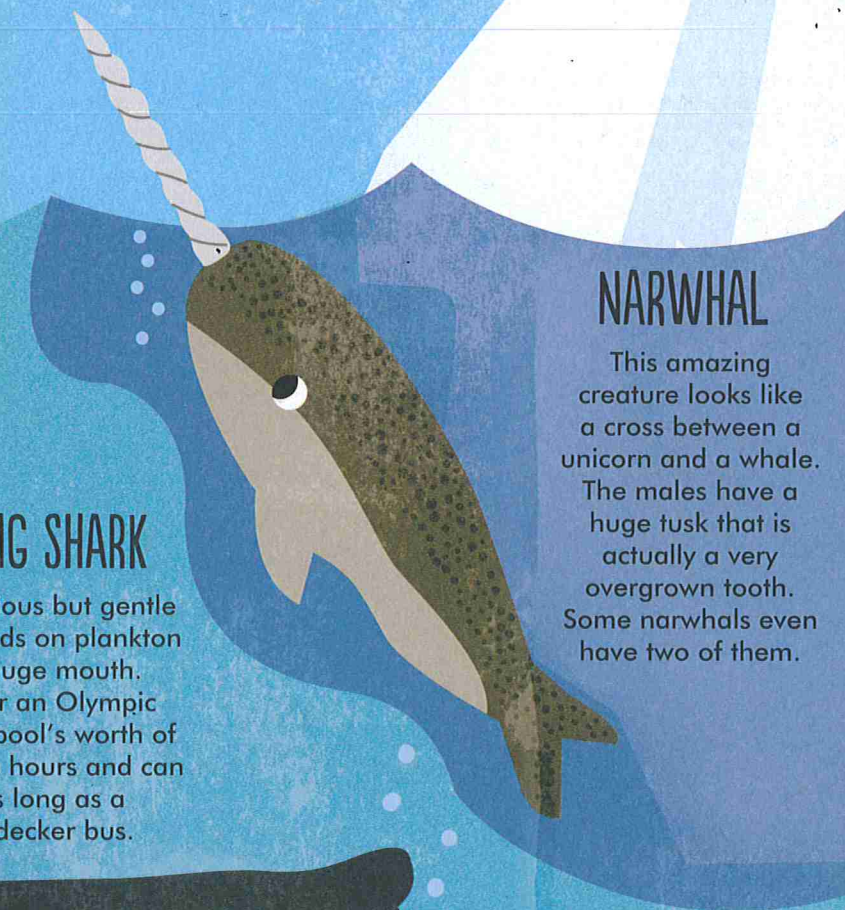
## LEATHERBACK TURTLE

This is the largest of the sea turtles and it has a leathery, rather than hard, shell. It eats a huge amount of jellyfish and sometimes mistakes discarded plastic bags for a tasty meal. This can be deadly for these endangered giants of the sea.



## NARWHAL

This amazing creature looks like a cross between a unicorn and a whale. The males have a huge tusk that is actually a very overgrown tooth. Some narwhals even have two of them.



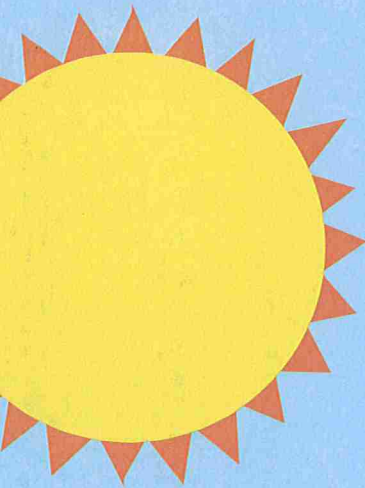
## GIANT CLAM

These multi-coloured clams are the largest molluscs on Earth and can grow up to 1.2 metres (4 feet) across. No two clams are the same colour and they can live for up to 100 years. They open and close far too slowly to trap any divers!





# POWERING THE PLANET



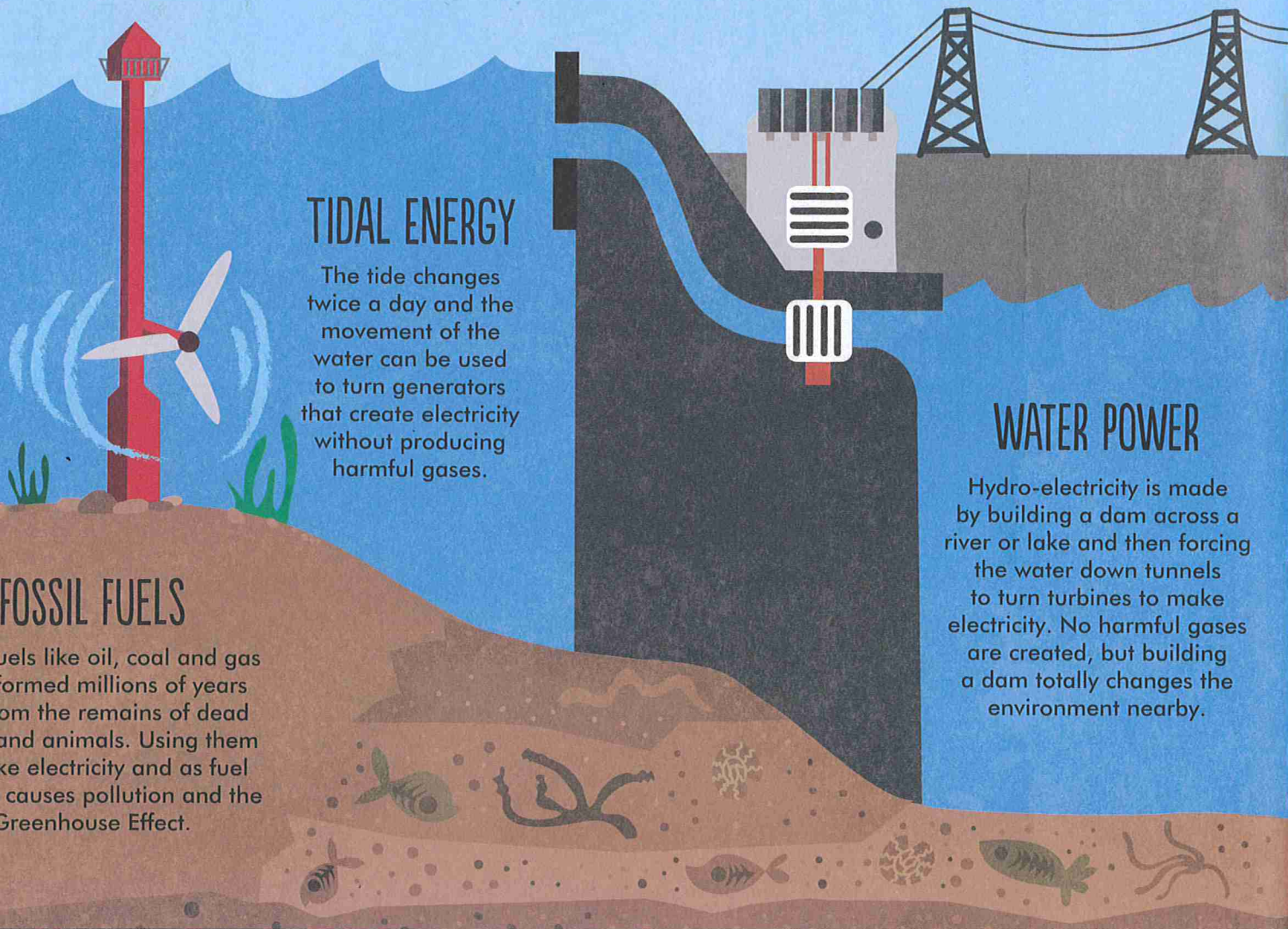
## ENERGY FROM THE SUN

Heat and light from the Sun take just over 8 minutes to reach the Earth. Plants and trees use the energy in sunlight to make their own food.



## GREENHOUSE GAS

Oil, coal and gas will not last for ever. Burning them makes a gas called carbon dioxide that traps the Sun's heat near Earth, creating what is called the Greenhouse Effect. Our climate seems to be changing because of this and we must find ways of slowing it down.



## TIDAL ENERGY

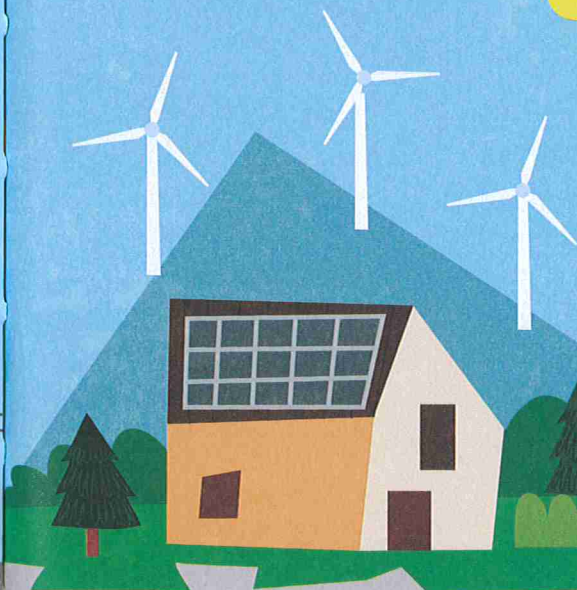
The tide changes twice a day and the movement of the water can be used to turn generators that create electricity without producing harmful gases.

## FOSSIL FUELS

Fossil fuels like oil, coal and gas are formed millions of years ago from the remains of dead plants and animals. Using them to make electricity and as fuel for transport causes pollution and the Greenhouse Effect.

## WIND POWER

A wind turbine has propellers that turn in the wind to drive a machine called a generator that can make electricity. They do not make greenhouse gases, but need lots of wind and some people really do not like the look of them near their houses.



## SOLAR POWER

Solar panels, or photovoltaic cells, make electricity from the power of the Sun. The Sun will not run out soon, but it is expensive to build solar power stations and the panels cannot work if it is cloudy.

## BIOMASS ENERGY

Electricity can be made from burning wood, plants and our old rubbish. It is a good way of using up waste, but burning it creates greenhouse gases. Growing trees to burn also takes up room where crops might be planted to feed people.



## CURIOUS WORDS

### RENEWABLE

energy comes from things that do not run out, like the Sun or the sea.

### NON-RENEWABLE

energy comes from sources that will run out. We cannot make any more of them.

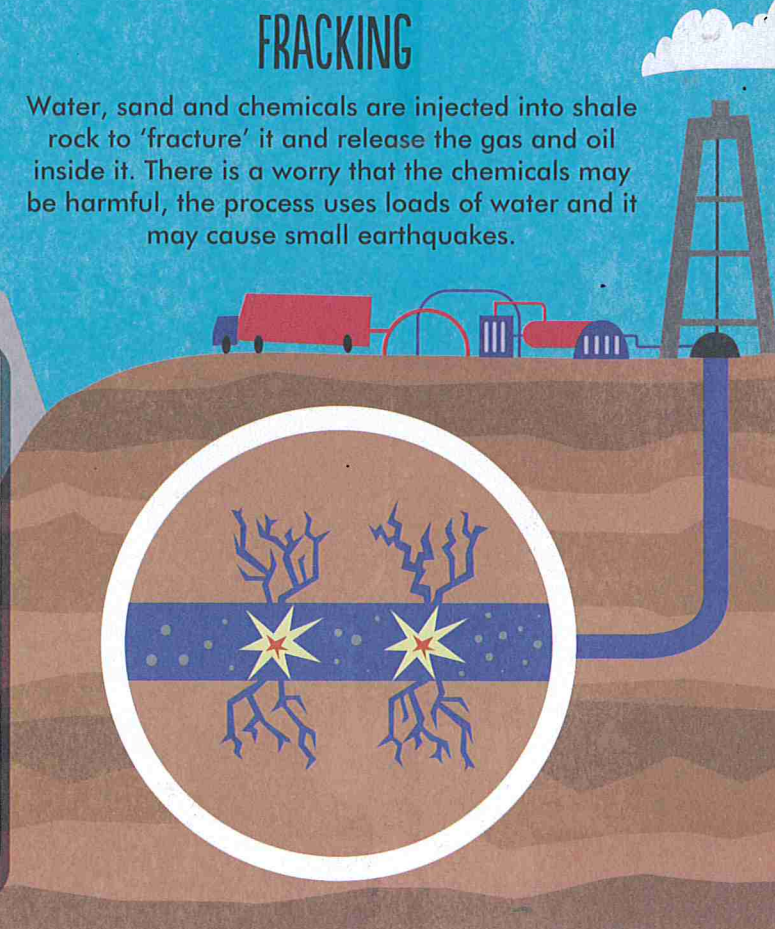
## NUCLEAR POWER

Uranium ore is made into a metal that can make a huge amount of electricity. The disadvantage is that it produces very dangerous radioactive waste that has to be stored very carefully.



## FRACKING

Water, sand and chemicals are injected into shale rock to 'fracture' it and release the gas and oil inside it. There is a worry that the chemicals may be harmful, the process uses loads of water and it may cause small earthquakes.

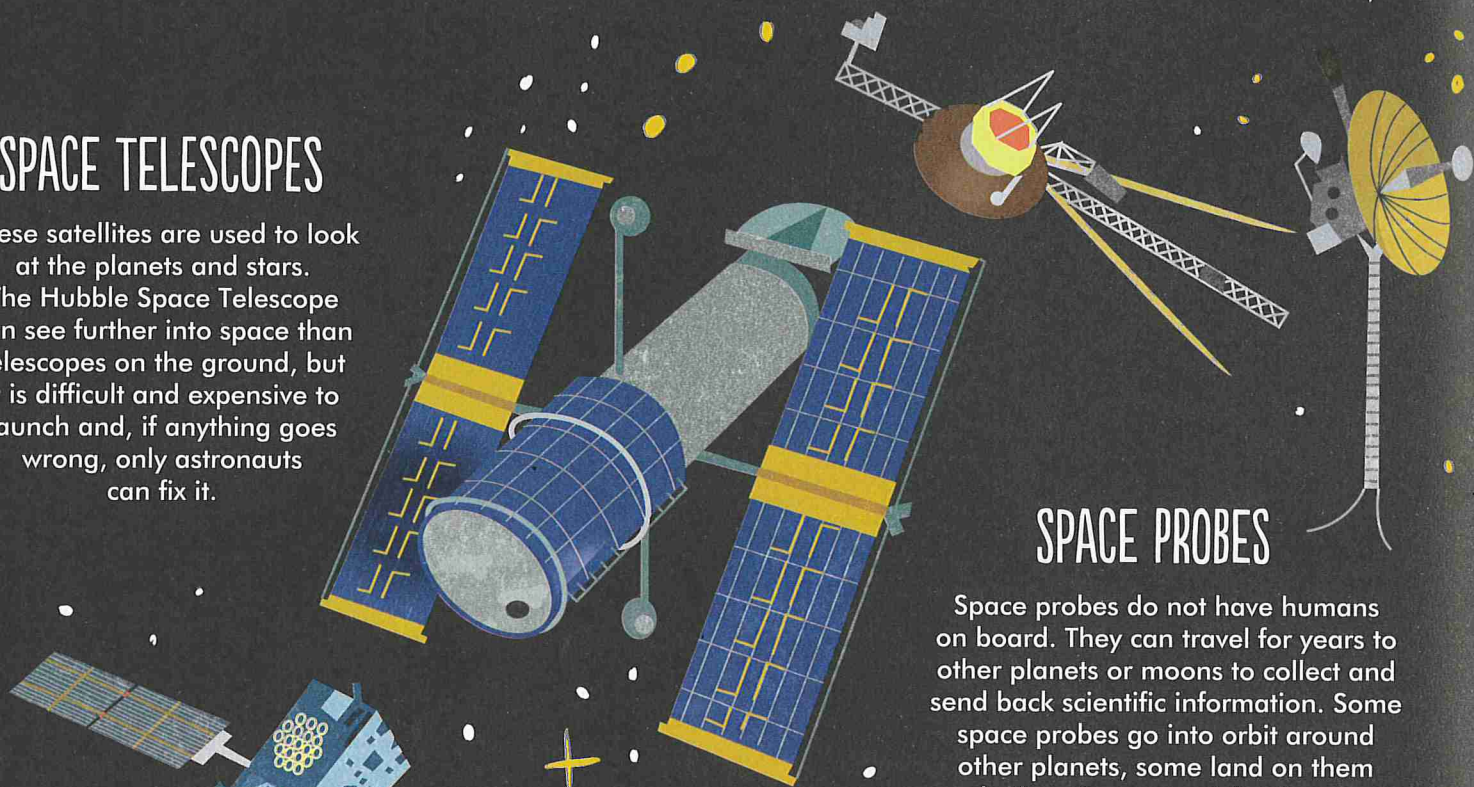




# WHIZZY STUFF IN THE GALAXIES

## SPACE TELESCOPES

These satellites are used to look at the planets and stars. The Hubble Space Telescope can see further into space than telescopes on the ground, but it is difficult and expensive to launch and, if anything goes wrong, only astronauts can fix it.



## SPACE PROBES

Space probes do not have humans on board. They can travel for years to other planets or moons to collect and send back scientific information. Some space probes go into orbit around other planets, some land on them and others leave our Solar System to explore far into space.

## METEORS

There are little chunks of rock in space called meteoroids. When they reach the Earth's atmosphere they get really hot and burn up, looking like amazing fireworks streaking across the sky. These are called meteors or, sometimes, shooting stars.

## METEORITE

When a meteor hits the Earth it is called a meteorite. Some of them have made huge holes, or craters, in the ground. In Arizona, USA there is a massive one over 1 kilometre wide.

## ARTIFICIAL SATELLITES

These are launched into space by rockets. They go round (orbit) the Earth and are used for communications, sending television and phone signals, for watching the weather, for helping us navigate the planet and for spying!



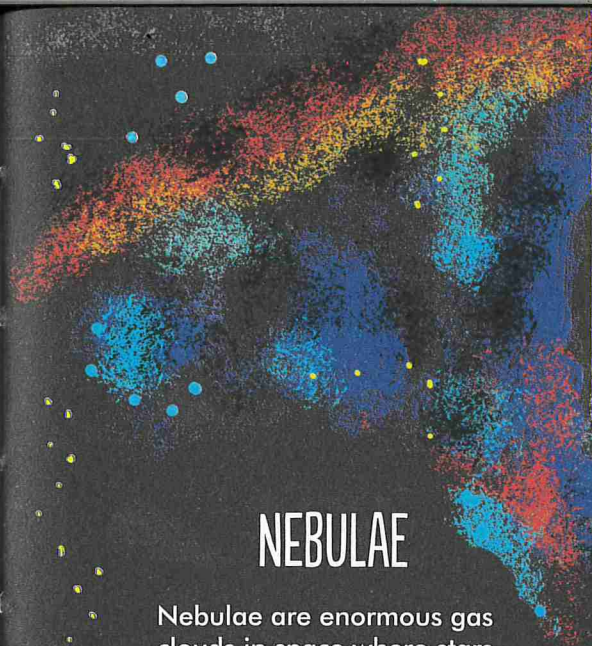
## CURIOUS WORD

### CELESTIAL

is a word used to describe things in the sky or outer space. Planets and stars are celestial bodies.

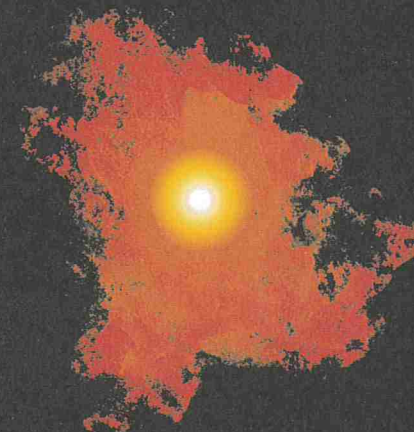
## NEBULAE

Nebulae are enormous gas clouds in space where stars are born. Stars are huge balls of burning gas. As the stars get bigger, the nebulae begin to glow. The nearest star to Earth is the Sun.



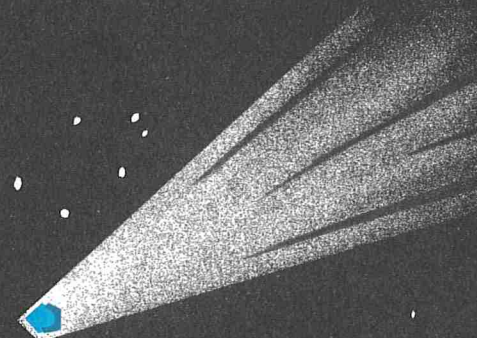
## RED GIANT

Stars burn for billions of years, but then they begin to run out of gas. They then change from white to red, grow bigger and become red giants.



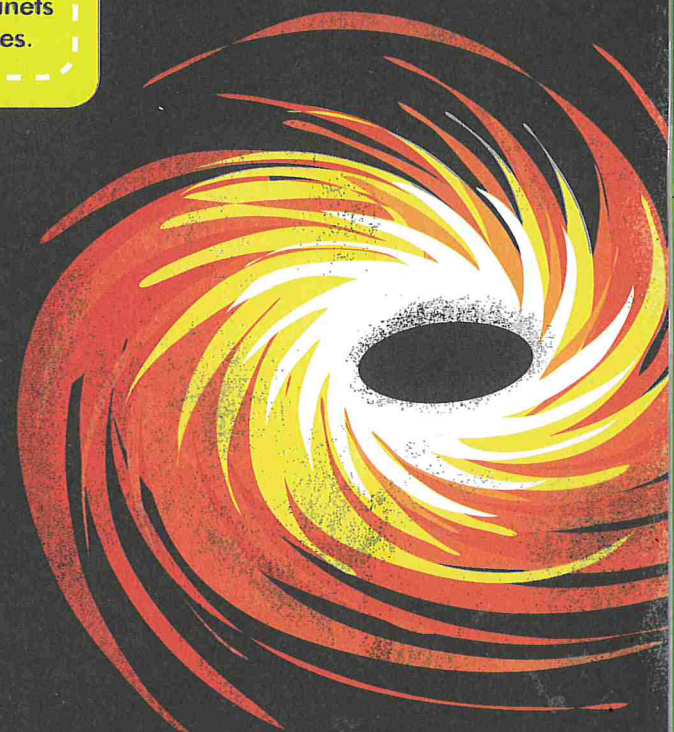
## WHITE DWARF

Some red giants slowly shrink and become stars that are called white dwarfs.



## BLACK HOLE

This may form after a star has exploded. It is a very tight ball of gas that has such a huge pull of gravity that it even sucks light into it.



## SUPERNOVA

Other red giants get bigger and bigger until there is a gigantic explosion called a supernova.

## COMETS

These are great big dirty ice balls that can be several kilometres across. If they come close to the Sun the ice in them melts and creates a tail of dust and gas. Halley's Comet can be seen from Earth every 75-76 years. Its next visit will be 2061.

