Opening extract from

The Ultimate Book of Knowledge

Written by

Various

Published by

Oxford University Press

Vikings

The Vikings were Norse peoples who lived in the Scandinavian countries of Norway, Denmark and Sweden.

From the 700s, Vikings left their homes in search of land. They made raids across the seas and settled in other countries. Vikings were also successful traders.

FAST FACTS

Viking gods	
Bragi	*the god of poetry*
Frigg/Freya	*the twin gods of love*
Loki	*god of fire*
Odin	*king of the gods*
Thor	*the storm-god*

Country life

Most Vikings were peaceful farmers. They grew wheat, oats, barley and vegetables and they kept cattle, sheep, pigs and chickens.

The centre of every Viking village was the great hall. Here Viking men and women feasted and told fantastic stories of gods and heroes.

This Viking ice-skate was found at York, England. It is made of leather and animal bone.

Towns and trade

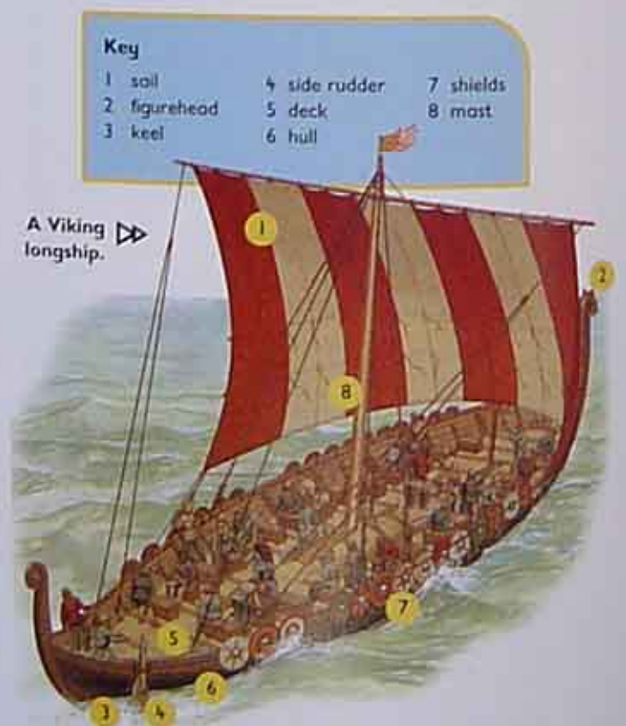
In towns, craftspeople made clothes, jewellery, tools and weapons. Merchants traded these goods abroad. They brought back ivory and furs from Iceland, silk and spices from Baghdad, and slaves and furs from Russia.

Viking raids

Viking invaders first hit Britain around AD 793. Raiders took treasure, and slaves to work on their farms. Vikings also settled across northern Europe and as far west as Greenland and North America.

Viking ships

A Viking longship, built for raiding, could carry 200 fighting men. The Vikings built wider, deeper ships called *knarrs* for trade, and little rowing boats called *faerings*. Ships had both oars and sails.



A Viking longship.

Aztecs

For almost 200 years the Aztecs ruled an area that is now part of Mexico. Their empire ended in 1519 when the Spanish arrived.

The Aztecs were great builders and fine craftworkers, but their civilization was also extremely bloodthirsty.

The Aztec empire at its height.

The Aztecs built their temples on top of huge, stepped pyramids.

Capital city

The Aztecs came to central Mexico around 1345. They built a huge city on an island in Lake Texcoco. They called it Tenochtitlán (now Mexico City). The Aztec emperor, his courtiers and his priests lived here.

DID YOU KNOW?

The Aztecs did not have money. They traded feathers and cocoa beans instead.

Worship

The Aztecs worshipped many gods. The Sun god was called Huitzilopochtli. Aztec priests sacrificed live animals and people to this god. They cut out their victims' hearts while they were still beating.

End of the Aztecs

The Spanish conqueror Hernán Cortés defeated the Aztecs. His army had horses, guns and metal weapons. Some of the Aztecs believed that Cortés was the feathered serpent god, Quetzalcoatl.

An archaeologist working at an Aztec burial site in Teotihuacán, Mexico.

Volcanoes and earthquakes

Hot lava, ash and smoke pouring out of volcanoes cause damage in many parts of the world. The shaking of the ground in an earthquake can destroy cities.

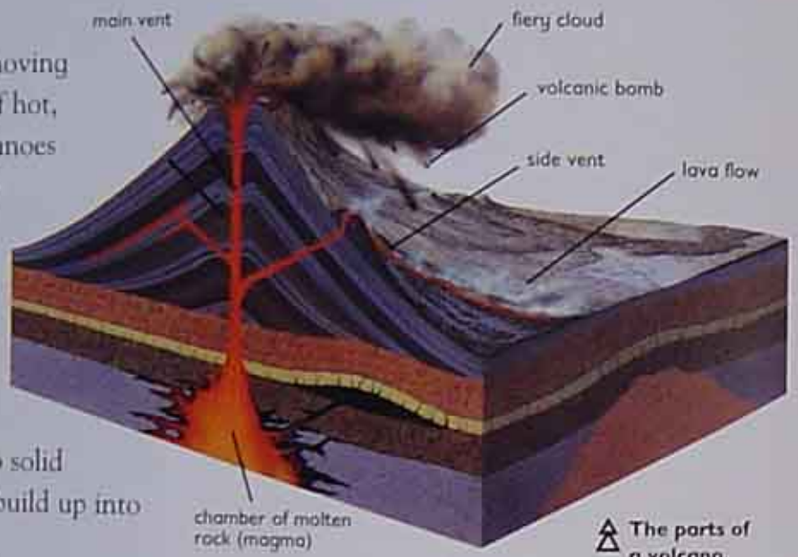
Both earthquakes and volcanoes happen because of movements in the surface, or crust, of the Earth.

DID YOU KNOW?

Volcanoes are not active all the time. When a volcano has not erupted for a while, it is called dormant (sleeping).

A volcano erupts

Earth's crust is made up of moving plates that float on a layer of hot, molten rock (magma). Volcanoes happen when magma pushes up through cracks. An erupting volcano sends out molten rock (lava) and clouds of ash and gases.



The parts of a volcano.

Building up

As lava cools, it hardens into solid rock. Over time, lava layers build up into a mountain shape.

A map of the world's active volcanoes. There are so many around the edge of the Pacific Ocean plate that the area is called the 'ring of fire'.

Damage from an earthquake in the Japanese city of Kobe in 1995.

Earthquakes

Strong earthquakes usually happen when two plates rub against each other. They are common in places such as Japan and California, which are at the edges of plates.

Mountains

Mountains are high peaks of land. They are formed by movements of the Earth's surface, and they are shaped by rain, sun, ice and wind.

Mountains are harsh places to live, because temperatures are low and the air is thin. Some people climb mountains for sport or to enjoy the beautiful scenery.

Fold mountains

Fold mountains form when two pieces of the Earth's crust slowly crash into each other. Over millions of years, the rocks of the crust are pushed upwards to form mountains.

Fold mountain.

Block mountains

Block mountains form when huge blocks of rock are tilted or lifted up along lines of weakness, called faults.

Block mountain.

Dome mountains

Dome mountains form when molten rock pushing up from below meets strong rocks at the surface. The rocks bulge to form a dome.

Dome mountain.

Some of the world's mountains and mountain ranges.

Shaping mountains

Valleys form when rivers or glaciers (rivers of ice) wear away the softer rocks and carve deep channels in the mountainside.

Mountains are also worn away by rain and wind. The oldest mountains have rounded tops and gentle slopes.

A valley in the Swiss Alps, Europe.

Space exploration

The Space Age began in October 1957, when the Soviet Union (now Russia) put the satellite *Sputnik 1* into orbit around the Earth.

Since then, human beings have walked on the Moon and and robot spacecraft have visited every planet in our Solar System.

Space race

After the launch of *Sputnik 1*, both the USA and the Soviet Union raced to land people on the Moon. They sent astronauts into orbit around the Earth and unmanned probes to the Moon.

Moon landing

In July 1969, three US astronauts – Michael Collins, Neil Armstrong and Edwin Aldrin – landed on the Moon in the *Apollo 11* spacecraft. Over the next three years there were five more Moon missions.

The Shuttle uses its rocket fuel tank to blast into space, and its wings to glide back to Earth.

An astronaut inside the Spacelab, a laboratory that is sometimes carried onboard the Space Shuttle.

KEY DATES

1961 Yuri Gagarin is the first man in space
1976 *Viking* sends back pictures of Mars
1989 *Voyager* sends back pictures of Neptune
1990 *Magellan* starts mapping Venus
1995 *Galileo* probe enters Jupiter's orbit
1997 *Sojourner* explores surface of Mars
2000 First crew arrive at International Space Station
2004 *Cassini* sends back pictures of Saturn's rings

Space Shuttles

Space Shuttle *Columbia* was launched in 1981. It was the first spacecraft that could fly into space many times. Only the main fuel tank is new for each flight.

The Shuttle can carry satellites into orbit or launch space probes.

Space stations

A space station is a place in space where astronauts can live and work. The first space station was *Salyut 1*, launched by the Soviet Union in 1971.

In 1998, the first pieces of a new space station, the ISS (International Space Station), were put together in space. The International Space Station is the biggest-ever space station.

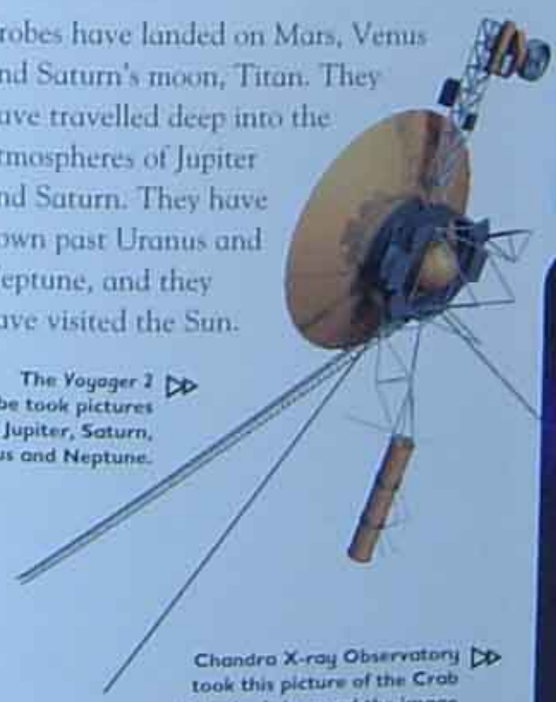
The International Space Station contains six laboratories.

An astronaut can move around outside a spacecraft using a jet-powered backpack called an MMU.

Missions to the planets

Since the Moon missions, most space exploration has been carried out by robot space probes. They take photographs and use radar and other instruments to collect information, which they send back to Earth by radio.

Probes have landed on Mars, Venus and Saturn's moon, Titan. They have travelled deep into the atmospheres of Jupiter and Saturn. They have flown past Uranus and Neptune, and they have visited the Sun.



The *Voyager 2* probe took pictures of Jupiter, Saturn, Uranus and Neptune.

DID YOU KNOW?

The first space telescope, Hubble, was launched in 1990. It circles the Earth once every 90 minutes and collects light and other rays from deep space. Chandra X-ray Observatory, put into orbit in 1999, is a telescope that builds up pictures from X-rays.

Chandra X-ray Observatory took this picture of the Crab Nebula. It beamed the image to Earth as radio signals.