

What is the English Riviera UNESCO Global Geopark?

An epic adventure... 400 million years in the making

What is a UNESCO Global Geopark?

UNESCO Global Geopark status is awarded to special places with internationally important geology and outstanding natural and cultural value.

Fundamentally,
UNESCO Global Geoparks
are about people and about
exploring and celebrating
the links between our
communities and
the Earth.

UNESCO Global Geoparks highlight the relationship between the geological heritage and all other aspects of the natural and cultural heritage. Global Geoparks use their heritage to promote awareness of key issues facing society in the context of the dynamic planet we all live on. Global Geoparks promote respect for the environment alongside sustainable economic development.



United Nations
Educational, Scientific and
Cultural Organization



English Riviera
UNESCO
Global Geopark



Napoleonic Soldier at
Berry Head



Rock songs on Torquay Harbour



Fun in the Paignton
Geoplay Park

Geoparks are not just about rocks...

Devonian

400 million years ago...

This is a really important time for us as this is when our grey and pink limestone rocks were formed in tropical seas south of the Equator. When the creatures that lived there died they sank to the sea floor and layer upon layer they were changed into rock.

Next time you are on the beach look for patterns in the limestone pebbles, you might find some fossils.

The big headland called Berry Head is made of limestone.

Hopes Nose is also made of limestone. Carefully explore the rocky shore at the end of Hopes Nose and you might see some fossilised corals.



Trilobite



Coral fossils.

Carboniferous

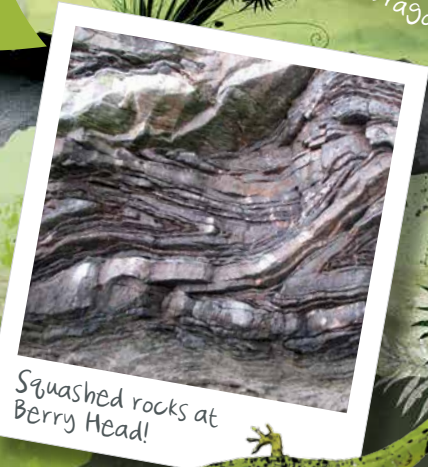
310 million years ago...

Huge forces deep below your feet can make the rocks move, creating folds as they crunch together.

In a time when giant dragonflies took to the air our limestone rocks were so crumpled up that they formed part of a massive mountain range.

The mountains have all gone now but if you go exploring at Hopes Nose, look across to the island called the Orestone, the rock here was folded over.

The rocks at Berry Head are also folded but you can only see them if you go on a boat trip.



Squashed rocks at Berry Head!



Dragonfly



Amphibian

The Global Geopark Timeline



but they are the important starting point of our story...

Permian

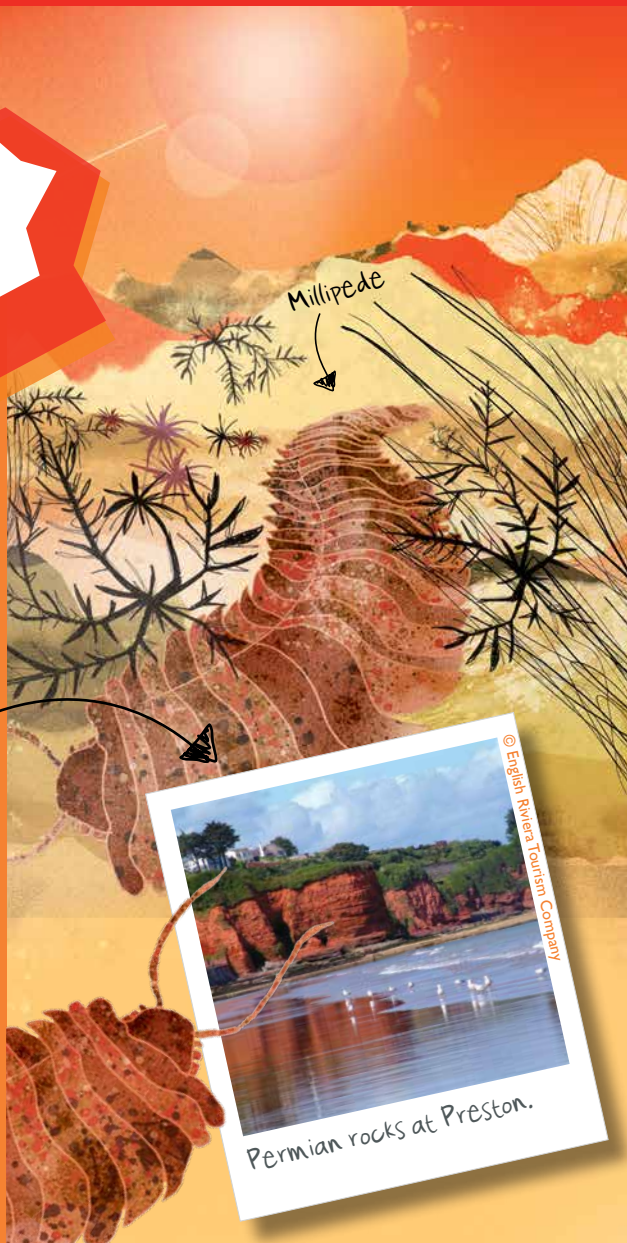
270 million years ago...

In a time when giant millipedes and reptiles roamed all of our red rocks were formed in a desert, roughly where the Sahara desert is today.

Sometimes storms created floods in the desert which carried and then dumped a mixed up jumble of rocks. This rock is called breccia it has bits of broken limestone in it. Other times wind blew sand into dunes and this formed a rock called sandstone.

Our red rocks are much softer than limestone. The sandstone has been worn away by the sea to create the sand on the beach and that is why it is a pale red colour.

The giant millipedes could grow to over 2 metres long! At low tide, explore the rocky shore between Goodrington Sands and Saltern Cove and you might find one of the ancient millipede burrows.



Quaternary

500,000 years ago...

By this time the dinosaurs had appeared and disappeared and now it was the time of mammals.

Rainwater and underground streams carved out caves in the limestone rocks in Torquay and Brixham. This is when Kents Cavern was created.

Mammoth and woolly rhinoceroses lived here and the caves became home to wild animals like sabre-toothed tigers, hyenas, cave bears and real cavemen.

Ancient bones and tools have been found in the caves and you can see them at Torquay Museum.



The Global Geopark Timeline

PRECAMBRIAN

CAMBRIAN

ORDOVICIAN

SILURIAN

DEVONIAN

CARBONIFEROUS

PERMIAN

TRIASSIC

JURASSIC

CRETACEOUS

PALAEOGENE

NEOGENE

QUATERNARY

Geological timescale in millions of years

The beginning... 4600

542

488

443

416

359

299

251

199

145

65

23

2.6

Today...

The Stories of the Geopark

Geoparks are not just about rocks but they have influenced everything since

Formation of the bay

It is only in relatively recent times, 7000 years ago, that sea levels rose at the end of the last ice-age and the soft red sandstones and breccias eroded away to form the bay.

A sheltered bay

Protected from the prevailing winds the Geopark has a micro-climate and an array of important habitats within a small area; from caves to ancient woodland and sandy shore to rare limestone grassland.



Girl bunting, a rare farmland bird © Mike Langman



Guillemot Colony at Berry Head © Dreamstime



Special sea caves



Rare small blue butterflies on kidney vetch © S Murdoch



Shout-snouted seahorse © Seahorse Trust



1



Petitor Marble Urns

© Torquay Museum

Just north of Babbacombe, during Victorian times, local limestone was quarried and polished to create Petitor Marble and clay was extracted to the terracotta industry. Examples of both can be seen at Torquay Museum.

2



Oddicombe Rock Fall

© Torbay Council Beaches Team

The unstable Permian rocks here have led to both landslips and rock falls over many years. The largest fall in recent years (April 2013) saw the collapse of the house from the top.

3



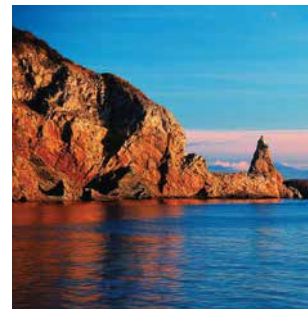
Babbacombe Cliff Railway

Built in 1926, the cliff railway engineer utilised a gap in the rocks created by a geological fault line, this created easy access up and down to the beach.

Tel: 01803 324025

Postcode: TQ1 3LF

4



Long Quarry Point

In the past quarrying dramatically changed the face of many sections of the coastline. The limestone was used for building stone or aggregate dependant on it's quality.

5



Hopes Nose

With exceptional marine Devonian fossils, structural evidence of our tectonic journey northwards, rare mineralogy and a raised beach 8 metres above today's sea level this site is recognised a Site of Special Scientific Interest.

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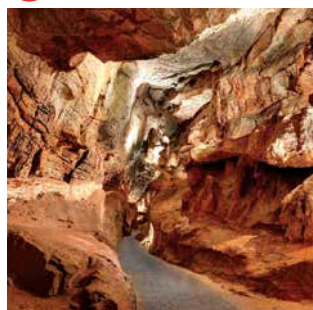


Folded rocks

© M Border

Between Ansteys Cove and Daddyhole Plain, and on the island of Orestone the limestone rocks are hugely folded and faulted.

7



Kents Cavern

© Kents Cavern

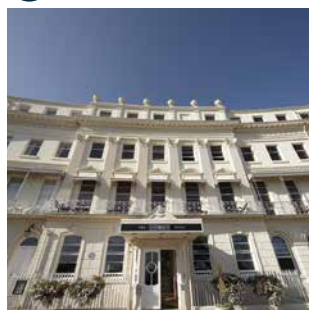
The caves, formed 2.5 million years ago, provide an incredible record of early man stretching back 500,000 years.

www.kents-cavern.co.uk

Tel: 01803 215136

Postcode: TQ1 2JF

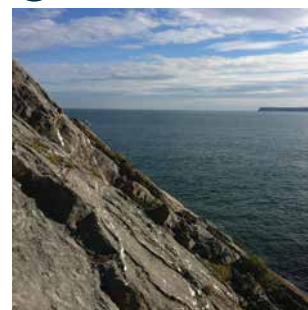
8



Hesketh Crescent

The Victorians recognised the resort, in particular "the waters", as beneficial for health. Even Charles Darwin resided here at Hesketh Crescent now the Osbourne Hotel whilst his daughter was ill.

9



Triangle Point

© M Border

The flat surface of the point is covered with 400 million year old marine Devonian fossils.

10



London Bridge

© Chris Slack

Formed by the sea this natural arch is probably one of the most iconic geological features in the Geopark

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Jawbone at Torquay Museum © Oxford University

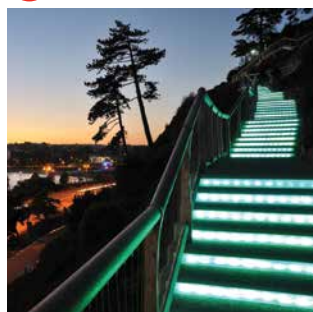
The most important find from Kents Cavern, a human jawbone is currently on display at the museum. The museum was set up by Pengelly to house the artefacts from the caves.

www.torquaymuseum.org

Tel: 01803 293975

Postcode: TQ1 1HG

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Royal Terrace Gardens

The sheer cliff is the face of a major faultline, the Sticklepath fault, that runs across Devon. Here it emerges and heads out to sea.

Postcode: TQ2 5EZ

13



Agatha Christie

World famous crime writer Agatha Christie was born in Torquay and spent many of the most important chapters of her life here, as well as using real places in the area as settings for her renowned murder mysteries.

14



Torre Abbey

Built using considerable amounts of stone from the very headland it overlooks, the historic Abbey's story began in 1196 when the sheltered aspect, rich fertile land and proximity to the sea provided all the Premonstratensian Canons needed.

www.torre-abbey.org.uk

Tel: 01803 293593

Postcode: TQ2 5JX

15



Cockington Court

Safely out of sight from invaders, the ancient Saxon settlement of Cockington developed in a fertile valley set back from the sea. The traditional thatched village and manor house today reflect rural traditions and creative crafts

www.cockingtoncourt.org

Tel: 01803 607230

Postcode: TQ2 6XA

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Occombe Farm

The mineral rich Permian rocks have provided a legacy of rich, fertile red soil. Open to the public Occombe remains a working organic farm today.

www.occombe.org.uk

Tel: 01803 520022

Postcode: TQ3 1RN

17



Bishops Tower

Separated from the sea by salt marsh and dunes the oldest Saxon parts of Paignton developed 1.5km inland. Salt works made the town the most prosperous in the area.

18



Roundham Head

© Chris Proctor

The diagonal patterns in the sandstone here are evidence of 270 million year old sand dunes.

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Reach Outdoors at the Seashore Centre

Information centre and home of fantastic outdoor adventure company Reach Outdoors.

www.reach-outdoors.com

Tel: 01626 873625

Postcode: TQ4 6LP

20



Oyster Cove

A special geological feature is found here that geologists call an unconformity. Permian age rocks sit directly on top of Devonian age rocks but a huge chunk of time is missing from the middle!

21



Saltern Cove

The cove's incredibly diverse marine life led to its designation as a marine local nature reserve.

22



Steam Train on Brunel's viaduct

The arrival of Brunel's railway in 1859 led to the development of Paignton as a popular seaside town.
www.dartmouthrailriver.co.uk
 Tel: 01803 555872
 Postcode: TQ4 6AF

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Heritage Fishing Fleet and Brixham Heritage Museum

Brixham fisherman used iron ochre produced from local iron ore to help waterproof their sails which gave them the distinctive red colour. Brixham Heritage Museum provides an insight into the history of the town
www.brixhammuseum.org.uk
 Tel: 01803 856267
 Postcode: TQ5 8LZ

24



Brixham Harbour

The sheltered natural harbour led to the development of the town as a fishing port which today boasts the highest value catch in England. Locals affectionately know this part of town as *Fish Town*.

25



Berry Head Quarry

© M Border

From the sea it is possible to appreciate the extent to which the headland was quarried in the past and some of the stone was used to create the Napoleonic forts above.

26



Berry Head National Nature Reserve and Napoleonic Forts

This 60m high headland has long protected the bay from the elements and from invasion creating a safe anchorage.
www.berryhead.org.uk
 Tel: 01803 882619
 Postcode: TQ5 9AP



UNESCO Global Geopark Status puts the English Riviera on the International Stage!

The number of UNESCO Global Geoparks continues to rise year on year and despite a concentration within Europe and China the Geopark initiative continues to spread worldwide so that there are existing UNESCO Global Geoparks, or active applications on all continents. To see the current list visit www.unesco.org/geoparks

Why not start your adventure in the Geoplay Park, Paignton and follow our geological story...

Swing across the Devonian Sea

Climb the ancient mountains

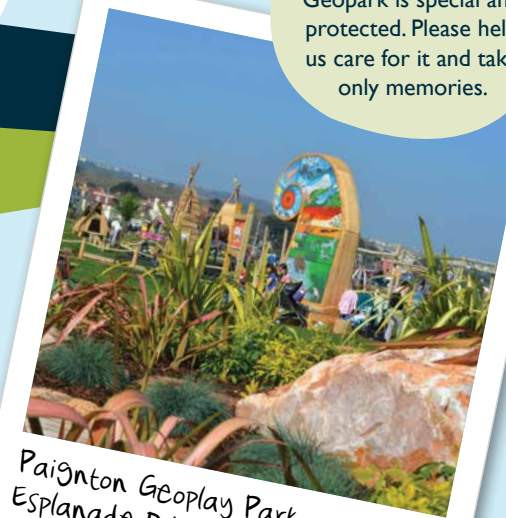
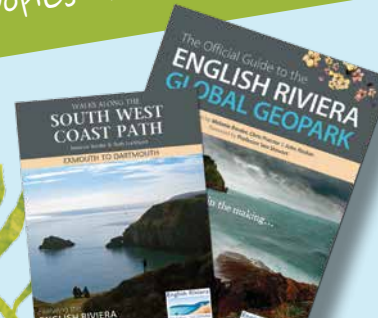
Trek through sandy desert or

Ride on a sabre toothed tiger

Remember, the geology of the Geopark is special and protected. Please help us care for it and take only memories.

There's plenty of places to visit and things to see and do.

To learn more pick up copies of the Geopark books.



Paignton Geoplay Park,
Esplanade Rd, Paignton, TQ4 6BE

www.englishrivierageopark.org.uk

English Riviera



Find out more about other amazing UNESCO Global Geoparks in the network
www.unesco.org/geoparks
www.globalgeopark.org

Visit www.unesco.org/geoparks and www.globalgeopark.org to find out more about all of the exciting UNESCO Global Geoparks around the world.

CommunitySpaces

PAIGNTON TOWN
communitypartnership
we don't just talk - we do!

GROUNDWORK
CHANGING PLACES
CHANGING LIVES

LOTTERY FUNDED