
A
TURTLE'S VIEW
OF THE
OCEAN BLUE
Catherine Barr
Illustrations by Brendan Kearney

TURNING TIDES

As well as the wind, waves are also caused by the pull of gravity from the moon and the sun. These are called the tides. Tides are the rise and fall of water in the oceans. As the tide rises, which we call high tide, water washes inland. As the tide draws back, which we call low tide, water is pulled back into the ocean.

Lunar tides

Tides are caused by the force of gravity, which squashes and squeezes the water around the Earth. The gravity of the moon pulls water on Earth towards it, and this is called the Tidal Force. The oceans bulge on the side closest to the moon, due to the moon's gravitational pull, and on the side furthest from the moon, because the earth is spinning. This creates the high tides. There is a low tide in the places on Earth that are furthest from the bulges.



MOON'S GRAVITATIONAL PULL



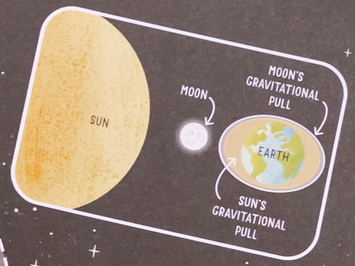
The tide is highest when there's a new or full moon. Different phases of the moon create different tides.



Spring tides

The sun's gravitational pull towards Earth also creates tides, called solar tides. But because the sun is further away from Earth, its pull is weaker, so it creates a smaller bulge and smaller tides.

A spring tide occurs when the sun, moon and Earth all line up, meaning high tides are really high and low tides are very low.



High tide and low tide

A high tide occurs when sea level rises to its highest point. A low tide is when the ocean falls to its lowest point.



ATLANTIC OCEAN

The Atlantic Ocean is a narrow, S-shaped ocean with the Americas on one side and Europe and Africa on the other. The world's longest mountain range, the Mid-Atlantic Ridge, runs down the middle of its ocean floor. From the Amazon to the Mississippi, many of the great rivers of the world flow into the Atlantic – the second biggest, and the saltiest, ocean on the planet.



The second largest ocean of them all.

Trade and travel

For centuries, the Atlantic was the busiest ocean in the world. The Italian explorer Christopher Columbus famously set sail across the Atlantic to find a new trade route to the gold and spices of Asia – but he found the Americas instead. Still today, some of the world's biggest trading ports and coastal cities look out over the Atlantic Ocean.

Islands in the Atlantic

Greenland, Iceland, the British Isles and the Bahamas are all islands in the Atlantic Ocean. Some, such as Iceland, formed from underwater volcanoes, while others, such as Greenland and the British Isles, were once part of a bigger continent that drifted apart.

Iceland

British Isles

The Gulf Stream

Winds and weather

The Gulf Stream is a swift, powerful Atlantic current that keeps Europe warm. From Mexico, the Gulf Stream flows north up the coast of America before bringing warmth across the Atlantic towards Europe. Without this ocean current, the climate in Europe would be very cold! The Gulf Stream is part of a huge conveyor belt of strong ocean currents that circle the globe. These currents shape the weather on land by bringing rain and warmth.

DIVING IN!

Hello! Welcome to my guide to our planet's incredible oceans. We sea turtles have lived in the oceans for more than 100 million years, and what a magical home it is. Are you ready to join me on a floating tour around my watery world? Let's get going!

Water, water everywhere

Planet Earth looks blue from space because most of its surface is water. Ours is the only planet with liquid water, and it has been sloshing around the globe for over four billion years. It rules our climate and our weather and, most importantly of all, the oceans make life on Earth possible.





Bubbling with life

Life began by chance, in the deep, dark ocean. In bubbling, boiling underwater volcanoes, the ingredients for the only known life in the universe stuck together. Over millions of years, this first tiny cell has evolved into all the different plants and animals in the ocean, on the land and in the air.

The air we breathe

At first, there was no oxygen in the air at all. But more than three billion years ago tiny floating plants in the ocean (called phytoplankton) began to use the sun's heat to make their own energy. This process is called photosynthesis and it creates oxygen. Today these plants make more than half of all the oxygen we breathe.



