Everything ‘Oceans’

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Tech Curiosity

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Ocean v. Sea

Oceans are vast bodies of water that cover roughly 70% of the earth. **Seas** are smaller and partially enclosed by land. The five oceans of the earth are in reality one large interconnected water body. In contrast, there are over 50 smaller seas scattered around the world.

Ocean	Sea
Though generally described as several 'separate' oceans, these waters comprise one global, interconnected body of salt water sometimes referred to as the World Ocean or global ocean.	A sea generally refers to a large body of salt water, but the term is used in other contexts as well. Most commonly, it means a large expanse of saline water connected with an ocean, and is commonly used as a synonym for ocean.

Ocean v. Sea

Oceans cover 71% of the Earth's surface, and contain 97 percent of the planet’s ‘surface’ water. The Pacific Ocean is the largest ocean and the Mediterranean Sea is the largest sea.

List of oceans by size

1. Pacific Ocean: 60,060,700 square miles
2. Atlantic Ocean: 29,637,900 square miles
3. Indian Ocean: 26,469,900 square miles
4. Southern Ocean: 7,848,300 square miles
5. Arctic Ocean: 5,427,000 square miles

Top 6 largest seas

1. Mediterranean Sea: 1,144,800 square miles
2. Caribbean Sea: 1,049,500 square miles
3. South China Sea: 895,400 square miles
4. Bering Sea: 884,900 square miles
5. Gulf of Mexico: 615,000 square miles
6. Okhotsk Sea: 613,800 square miles

Ocean v. Sea

Zones: Any water in a sea, ocean or lake that is not close to the bottom or near to the shore can be said to be in the pelagic zone. Areas in the pelagic zone are distinguished by their depth and the ecology of the zone. It is further divided into:

- The **epipelagic zone** (sunlit) is closest to the surface and stretches down to around 200 m. An abundance of light allows for photosynthesis by plants and nutrients for animals like tuna external and sharks.
- The **mesopelagic zone** (twilight) begins at 200 m below the surface and reaches a depth of 1,000 m. There is a little light but not enough for photosynthesis to occur.
- The **bathypelagic zone** (midnight) follows, from 1000-4,000 m in depth. Bioluminescent organisms are found in this zone. Unique animals like the marine hatchet fish external and giant squid live in this zone, surviving mostly on the detritus that drifts down from the epipelagic zone.
- The **abyssopelagic zone** (lower midnight) is located from 4,000 m to directly above the ocean floor and is a completely dark area home to colorless and blind animals.
- The **hadopelagic zone** is the deep water in ocean trenches. Some define the hadopelagic as waters below 6,000 m (19,685 ft), whether in a trench or not. Very little is known about this zone, and very few species are known to live here.

A New History of Life

Learn the history of life in a dramatic new way with this fascinating course that draws upon biology, earth science, and other disciplines to explain life's mysterious origins.

07: Origins of Land, Ocean, and Air

- Investigate the origin of Earth's ocean. Then track down the oldest rocks on the planet, which shed light on the first continents. Also explore the nature of Earth's primordial…

A New History of Life (5 min)

Origin of Water/Oceans

The Origin and Evolution of Earth: From the Big Bang to the Future of Human Existence

Explore the frontiers of science with this revolutionary course that rewrites the history of our planet as a single, compelling story involving the coevolution of rocks and life.

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19: Origins of the Oceans

- Follow Earth's remarkable transition from a dry world with a uniform black basaltic surface to a wet planet of rivers, lakes, and oceans. Also learn about the special properties of water…

20: Blue Earth and the Water Cycle

- Hunt for unseen water on the moon, Mars, and Earth, discovering that copious quantities exist in unlikely places, including hundreds of miles underground. Professor Hazen tells how…

The Origin and Evolution of Earth: From the Big Bang to the Future of Human Existence (4 min)

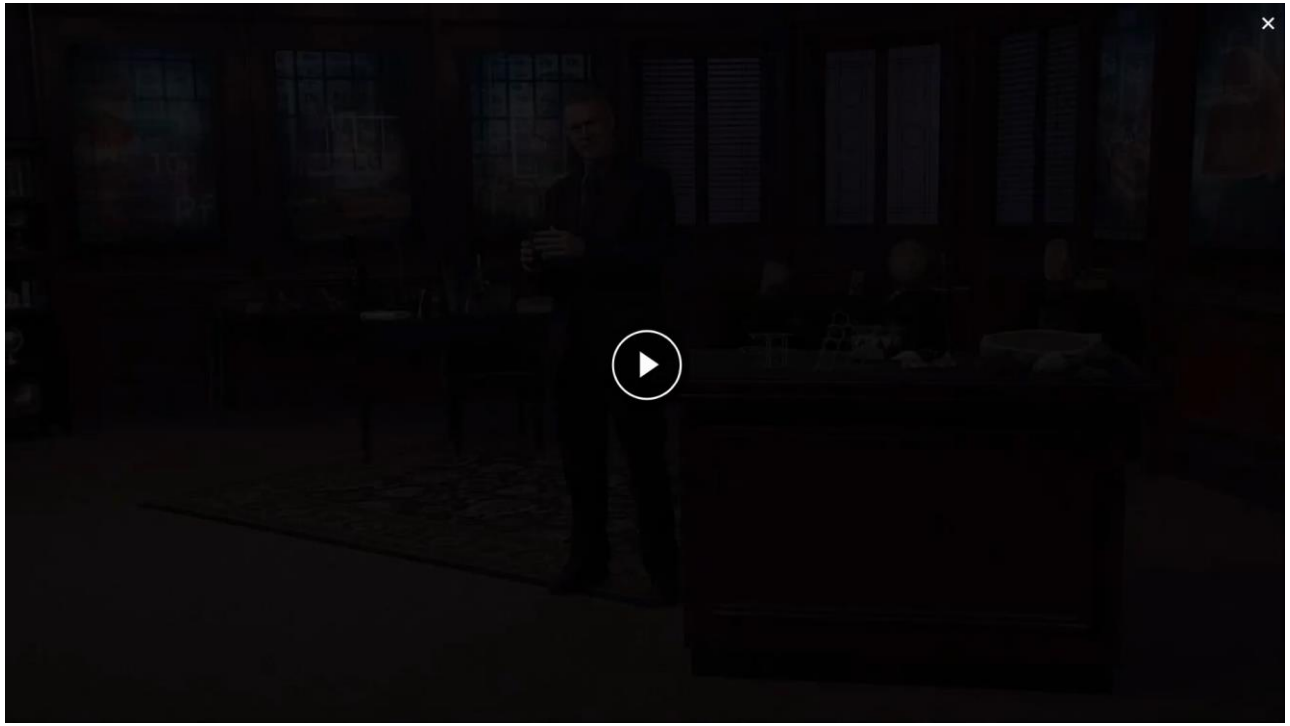
Why is the Ocean Salty?

The Origin and Evolution of Earth

- Water is an excellent solvent because the positive and negative ends can exert strong electrostatic forces that tend to pull apart other molecules. That's why table salt, sugar, and many other chemicals dissolve so rapidly in water. It's also why the oceans are salty.
- Rocks can take a long time to partially dissolve, but over accumulated millions of years, ocean water has become enriched in virtually the entire periodic table of the elements.
- The amazing ability of water to dissolve and transport other chemical compounds is what makes it such an ideal medium for the origins and evolution of life. All known life on Earth—and some researchers argue, all possible life in the cosmos—is dependent on water.

The Origin and Evolution of Earth: From the Big Bang to the Future of Human Existence (3:30 min)

And there's more!



Chemistry and Our Universe: How It All Works

Chemistry is the science of how everything interacts. An award-winning professor covers it all-from the periodic table to pH to poisons to plate tectonics.

58: Chemistry of Our Oceans

- It is said that water covers 75% of Earth's surface. But chemists know better: more accurately, Earth's surface is bathed in an aqueous solution-a mixture of water and many different dissolved solutes. Focus on dissolved carbon dioxide, methane hydrates, and the quest to extract dissolved gold....

Chemistry and Our Universe: How It All Works (4:40 min)

Chemistry of Our Oceans
What's the problem?

The Origin and Evolution of Earth: From the Big Bang to the Future of Human Existence

And there's more –

Water that is!

Chemistry and Our Universe: How It All Works (4 min)

There's Gold in Those Waves
Lots of gold!

The Joy of Science

Get an integrated understanding of all of science in this mind-expanding course that weaves together biology, physics, astronomy, chemistry, Earth sciences, and more!

40: Earth Cycles-Water

- All elements and compounds take part in geochemical cycles, which are described by identifying all the principal reservoirs, as well as the processes by which materials move from…

Nature of Earth: An Introduction to Geology

- Get a brilliant introduction into a truly fascinating and relevant topic in this course that teaches you the fundamentals of geology.

Earth's Changing Climate

- Investigate the "fingerprints" of global climate change, ranging from borehole temperatures to melting glaciers to the altered behavior of plant and animal species.

Chemistry of Our Oceans