

# Big Questions: What makes oceans so salty?

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Have fun in the surf, like these kids in Ocean City, Maryland, but make sure to drink water — from a faucet or bottle: The stuff you're swimming in is so salty, gulping large amounts actually will make you dehydrated. Photo by Washington Post/Michael S. Williamson

Many of us spend summer days at the beach, playing in the waves. When you think of summer, you may think of the sounds and smells of the ocean. The water tastes salty as it seeps into your mouth. It stings as it hits any cuts or scrapes on your skin. What gives the seashore its signature saltiness?

Salts come out of rocks, often thanks to the rain. Rain is slightly more acidic than pure water. That's because carbon dioxide from the air combines with the rainwater. That forms an acid called carbonic acid.

## Minerals Seep Into Water



In most cases, rain is not acidic enough to harm plants or animals. But it does cause rocks to erode, or slowly break down over time. Minerals, including salts, break free from rocks. The salts seep into the ground or water around them.

Rivers don't get very salty, because minerals come out of rocks in small amounts. But the river water constantly flows into the ocean. That river water doesn't leave the ocean unless it evaporates under the sun. And even then, evaporation doesn't get rid of the salt. Salt leaves the ocean only when living things use it or carry it out on their bodies.

### Salinity

When the planet was new, our oceans probably weren't that salty. Their saltiness is called salinity. Salinity built up over time. The National Oceanic and Atmospheric Administration is a scientific government group. This group estimates that if you took all the salt out of the ocean and spread it out on land, it would form a layer 500 feet thick!

## Salty Dead Sea Is Really A Lake



The ocean isn't the only place that collects salty water. The Dead Sea is in the Middle East. It is surrounded by Jordan, Israel and the Palestinian territories. The Dead Sea is considered one of the saltiest bodies of water on the planet — and it is actually a lake. Most lakes have water flowing out, not just in, which keeps salt from building up. But after water enters the Dead Sea, it has no way to exit. The lake is located in a very dry place, and it sits very far below sea level. Due to its location, water evaporates quickly. The salt is left behind. The salinity is so high near the bottom of the Dead Sea that salt clumps together to form big crystals.

### No More Than A Mouthful

Seawater is fun to play in. You should try your best not to swallow more than a mouthful, though. Your body needs salt to survive. However, you must urinate any extra amount before it poisons you. A glass of ocean water doesn't actually contain enough water to make up for the added salt. It won't take too many gulps of seawater before your body runs out of water. So make sure you stay hydrated while you enjoy the sea this summer!

Quiz

- 1 Read the section "No More Than A Mouthful."  
Select the sentence from the section that BEST explains why humans shouldn't drink ocean water.
  - (A) You should try your best not to swallow more than a mouthful, though.
  - (B) However, you must urinate any extra amount before it poisons you.
  - (C) A glass of ocean water doesn't actually contain enough water to make up for the added salt.
  - (D) So make sure you stay hydrated while you enjoy the sea this summer!
  
- 2 Read the section "Salty Dead Sea Is Really A Lake." Which sentence from the section shows why salt tends to accumulate in the Dead Sea?
  - (A) The ocean isn't the only place that collects salty water.
  - (B) The Dead Sea is considered one of the saltiest bodies of water on the planet — and it is actually a lake.
  - (C) But after water enters the Dead Sea, it has no way to exit.
  - (D) The salinity is so high near the bottom of the Dead Sea that salt clumps together to form big crystals.
  
- 3 What is the relationship between evaporation and saltwater?
  - (A) Saltwater takes longer to evaporate than fresh water.
  - (B) Salt is left in the water after evaporation occurs.
  - (C) Saltwater evaporates at a faster rate than fresh water.
  - (D) Saltwater can form in lakes after evaporation.
  
- 4 What effect does acid rain have on rocks?
  - (A) It causes them to erode over time.
  - (B) It causes them to turn into salt.
  - (C) It causes them to enter rivers and lakes.
  - (D) It causes them to become dangerous to humans.