

Worksheet 9. Oceans: a vast, still unknown world (grades 5-7)



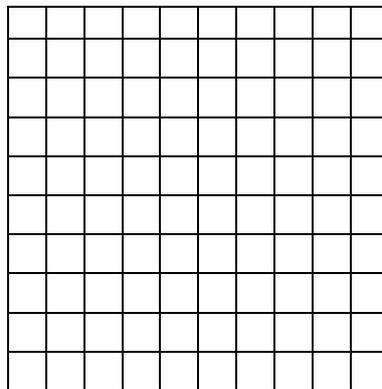
The ocean covers more than 70% of the Earth's surface, or approximately 361 million square kilometres, and the average depth of the ocean is close to 3,800 metres. The Pacific Ocean alone covers 1/3 of our planet.

The ocean is a major resource, not only for fishing and climate regulation, but also for the air we breathe: the tiny plants suspended in water (phytoplankton) provide approximately 80% of the air's oxygen, or four times more than land-based vegetation.

From microscopic beings (bacteria, plankton, etc.) to large cetaceans (like the blue whale, which can measure up to 30 metres long), the ocean is home to a variety of living creatures who reside in equally-varied habitats: from coral reefs to ocean trenches.

Scientists have indexed nearly 230,000 ocean-based species, but they think that the number of marine species might be as high as one million. As of today, it is estimated that only the equivalent of 5% of the surface of the ocean has been studied. Ocean exploration is thus incredibly important for science, on the same level as space exploration.

- 1) The following 100 squares represent 100% of the Earth's surface. Using the text above as a guide, colour in light blue the surface covered by the ocean, then use dark blue to go back over the squares which represent the surface of the Pacific Ocean (by itself). Finally, draw black lines in three of the blue squares (any blue squares): this is approximately how much we know about the ocean!



- 2) Using the information provided in the text, calculate the habitable volume the ocean represents. By comparison, the volume of habitable land is 4,560,000 km³. Where is the largest habitable volume found? How many times larger is this volume?
- 3) According to scientific estimations, how many ocean species are still undiscovered?
- 4) The Amazon Forest is often named the "lungs of the Earth". After reading this text, what do you think of that title?