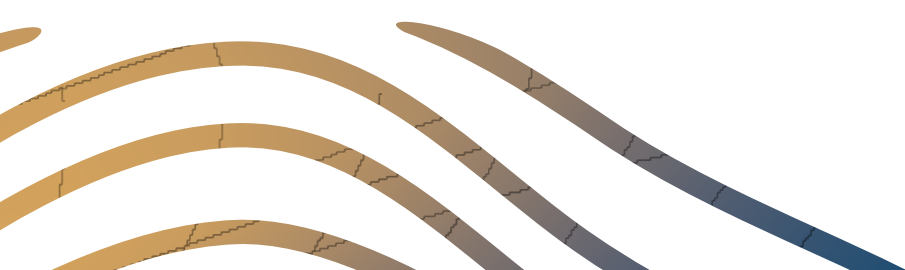




**THE OCEAN SENSES
ACTIVITIES BOOK**



The background is a solid orange color with several light orange, wavy, curved lines that sweep across the frame from the top right and bottom left towards the center. The lines vary in thickness and curvature, creating a sense of movement and depth.

TOUCH



SEDIMENTATION

Focus:

To understand the role of sedimentation in creating the unique conditions of ocean floor ecosystems.

Learning objectives:

With this activity, pupils will gain a basic understanding of how sediments in the ocean settle on the ocean floor (sedimentation) and what this looks like.

Key words:

Settling, sediment, terrigenous, pelagic.

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IN SHORT (FOR THE TEACHER):

In this activity, your pupils will gain hands-on experience in how sediments settle (sedimentation) on the ocean floor. You can discuss different types of sediments with your pupils and extend the discussion afterwards to processes that form sedimentary rocks.

Materials:

Each pair of pupils will have the following:

- Transparent plastic bottle, water glass or bowl filled with water.
- A mixture of sediment, sand, and very small pebbles.

Teaching Time:

30-45 minutes.

Classroom organization:

Pupils will ideally work in pairs.



Example of layers of sediment in a water bottle.

BACKGROUND STORY:

The term sedimentation is the process where sediment settles after being suspended in the water column. In the ocean, these sediments settle on the ocean floor in layers. If these layers get thick enough, the resulting heat and pressure can reform them into sedimentary rocks. The top layer of the ocean floor consists of sediment that can range in thickness from a few millimeters to thousands of meters.

Two of the main types of sea floor sediment are terrigenous and pelagic.

Terrigenous sediment is derived from land, transported by rivers, wind, ocean currents, and glaciers, and usually deposited on the continental shelf, continental rise, and abyssal plain. It is further contoured by strong currents along the continental rise. See next page for an example.

Pelagic sediment is composed of clay particles and micro skeletons of marine organisms like foraminifera that settle slowly to the ocean floor. Some of these organic sediments are called calcareous or siliceous “oozes” because they are so thick and gooey. The clay component (or sometimes volcanic ash) is generally carried from land by wind and falls on the surface of the ocean.

Learning procedure:

Fill the container (bottle, glass, bowl) roughly $\frac{3}{4}$ -full of water and have pupils slowly drizzle the sand/sediment mix into it. They will then observe how the sediment settles and forms layers of with the largest particles at the bottom.

Shaking or stirring the glass can additionally inspire discussion about the fact that settling, and sedimentation of the ocean floor are influenced by many factors, including ocean currents.

An alternative approach could be to drizzle sand from one hand onto another, so the pupils not only see how the sand settles on a surface, but also feel it.

More information:

<http://www.waterencyclopedia.com/Oc-Po/Ocean-Floor-Sediments.html>

<https://www.cliffsnotes.com/study-guides/geology/the-ocean-floor/ocean-floor-sediments>

<https://opentextbc.ca/geology/chapter/18-3-sea-floor-sediments/>



An example of terrigenous sediment been transported into the ocean by the Rio Cañete from São Vicente do Cañete, Peru.
(Image: Coordenação-Geral de Observação da Terra/INPE)