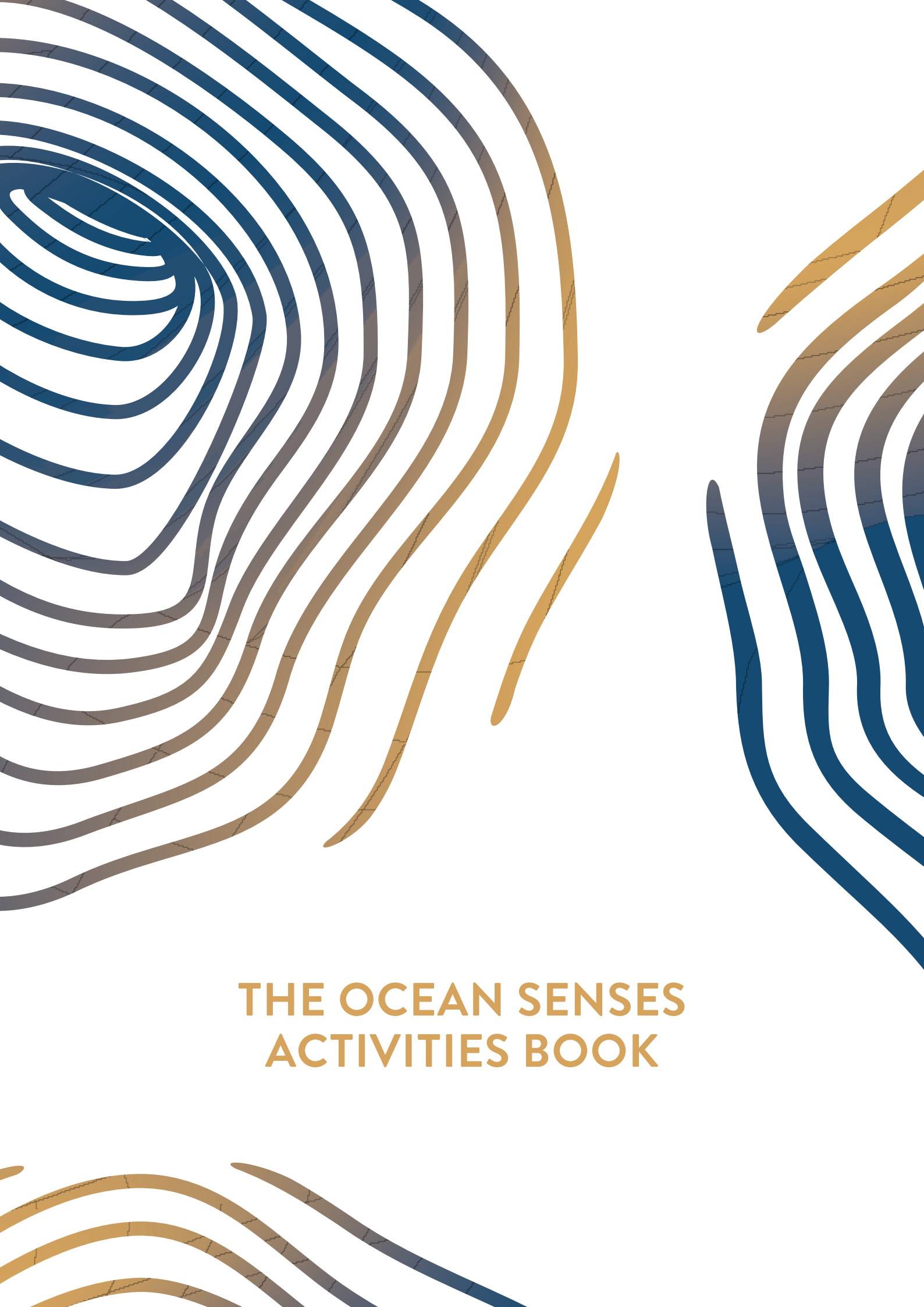

THE OCEAN SENSES ACTIVITIES BOOK

TOUCH

OCEAN SENSES
– TOUCH –

UNDER PRESSURE

Focus:

To understand and feel how water pressure changes with depth.

Learning objectives:

In this activity, pupils will recognize the relationship between water depth and pressure. Pupils will be able to reflect on how lifeforms in the deep sea might be affected by the high water pressures in their ecosystems.

Key words:

Depth, weight, pressure.

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IN SHORT (FOR THE TEACHER):

In this lesson, the pupils will “feel” the pressure that animals feel underwater. After the activity, the pupils can discuss and try to empathize with the creatures and organisms that live in the sea. The pupils can try to extrapolate their experience and think about the immense pressures at the bottom of the Arctic Ocean. This activity might be best done outdoors since water will be used.

Materials:

Each pair of pupils will have the following:

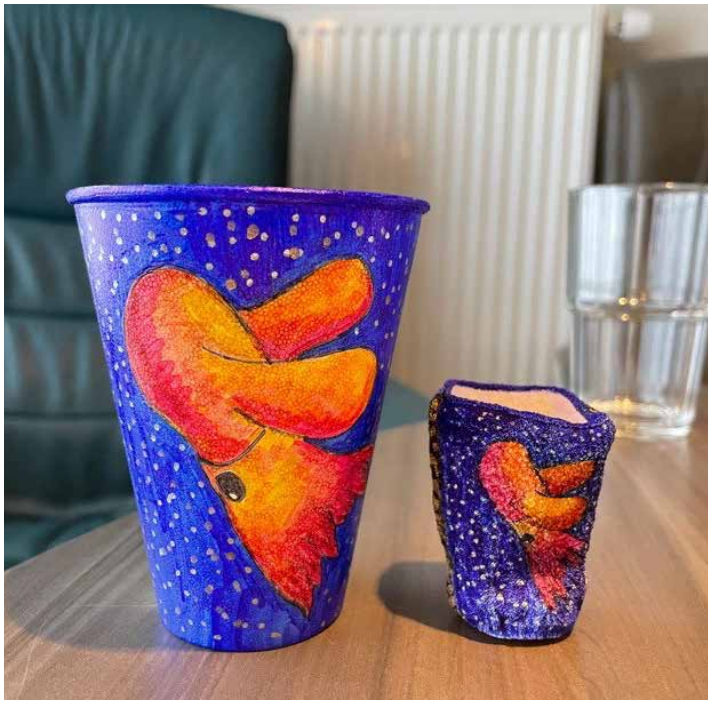
- Plastic bag
- Water / Flour / Salt to put in the bag
- Measuring cup/jug.

Teaching Time:

20-30 minutes.

Classroom organization:

Pupils will ideally work in pairs.



There is a lot of pressure at the bottom of the sea! Comparison of styrofoam cup at normal size and after compression at 4400m depth
(Image: AKMA Project)

BACKGROUND STORY:

The Arctic Ocean is 1038m deep on average, with its deepest point, the so-called Molloy Deep being around 5500m deep.

The high pressure at the bottom of the Arctic Ocean is one of the defining features of ocean floor ecosystems. This pressure has implications for the landscapes and lifeforms living at the bottom of the Arctic Ocean. All life in the Arctic deep sea is highly adapted to these pressures.

In contrast, humans are adapted to life above the ocean surface. The deepest dive a human has ever done (without a submarine vehicle) is currently to 300m.

Learning procedure:

One pupil lies on their back. The other pupil pours one cup of water (200ml, or, alternatively 200mg flour, or sand) into a plastic bag and gently places it onto the other pupil's chest, holding onto the bag ever so slightly. The 'sensing' pupil describes how these feels.

Then the bag is gradually filled with a bit more water (possibly working up to 2 liters or 2kg).

As a group, all pupils discuss what more pressure/weight felt like. The pupils can then reflect on how lifeforms at the bottom of the sea might be affected by this pressure.