

The sea is rising

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| 1 | <p>Overall aims:</p> <ul style="list-style-type: none"> • Exploring the concept of global warming; • Exploring the differences between the sea ice and land-based ice; • Developing and improving the manual skills; • Developing the ability to make and test hypotheses; • Make observations and predictions |
| 2 | <p>Vocabulary - keywords</p> <p>Water; Ice; Global warming</p> |
| 3 | <p>Sustainable abilities developed</p> <ul style="list-style-type: none"> - Knowing how the global warming acts; - Knowing the causes of the global warming; - Interiorizing the importance of adopting sustainable actions |
| 4 | <p>Pillars of sustainability included</p> <p>Environmental sustainability</p> |
| 5 | <p>STEAM domains</p> <p>Science; Engineering; Art</p> |
| 6 | <p>Teaching methodologies/activity outline</p> <ol style="list-style-type: none"> 1) The children shape a flat continent about 5 cm high with the pasta. The continent is placed in the center of the container. It must be large enough to hold several ice cubes, but must not touch the edges. This container represents the earth's ice. 2) With the measuring jug, the children pour water until it reaches 5 mm from the surface of the continent. The children must then mark how much water they have reached. 3) In the second container, the children pour the same amount of water. This container represents the sea ice of the Arctic Ocean. 4) On the outside of the container the children mark the water level with the permanent marker. |



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| | <p>5) In the container with the land ice, the children cover the continent they have modelled with ice cubes.</p> <p>6) They then add the same number of ice cubes to the other container.</p> <p>7) Every 5 minutes the children observe whether the water level has changed and mark this on the outside of the container.</p> <p>8) The activity continues until all the ice has melted.</p> <p>Teachers will point out to the children that, in the case of sea ice, the water level hardly changes, whereas in the case of land ice, it clearly increases. This happens because when land ice melts, new water arrives in the ocean from the land. More water, therefore, results in a higher sea level.</p> |
| 7 | <h3>Expected learning outcomes</h3> <p>The pupils will know:</p> <ul style="list-style-type: none"> - How the global warming acts; - The differences between sea ice and land ice; - Observe; - Test hypotheses; - Shape the pasta to create the continent |
| 8 | <h3>Assessment</h3> <ul style="list-style-type: none"> ● Initial evaluation: assessing what pupils already know about the general concepts; ● Middle evaluation: assessing what pupils are learning during the experiment; ● Final evaluation: assess, through systematic observation, whether pupils reached the goals. |
| 9 | <h3>Equipment and materials to be used in learning unit (tools, ingredients etc)</h3> <ul style="list-style-type: none"> - Two glass or transparent plastic containers; - Modelling paste; - Water; - A measuring jug; - Ice cubes; - A ruler; - An indelible felt-tip pen |



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| 10 | Kind of setting - lab, kitchen, outdoor etc. Indoor |
| 11 | References - source: Litton, J. & Margan, P. (2020). Il mio pianeta: ecologia [What on earth? The environment]. Giunti Editore. |

