How to inspire students for Arctic careers - INTAROS toolkits for schools

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21.04.2021
The Arctic is undergoing the most rapid changes in the climate system worldwide

The environment in the Arctic region is now changing significantly due to increased air and water temperature, thinning and decrease in the area of sea ice, melting of the Greenland Ice Sheet, thawing permafrost and changes in atmospheric and ocean circulation. Such changes have global and regional implications including extreme weather, sea level change, coastal erosion, natural hazards and changes in the ecosystem. Moreover, these changes impact severely on people’s living conditions in the Arctic.

In order to address these challenges INTAROS develops an efficient integrated Arctic Observation System by extending, improving and unifying existing and evolving systems in the different regions of the Arctic.
The INTAROS project offers educational materials, which were produced specifically for secondary schools in order to enhance literacy of Arctic Observations among teachers and students.

Although, there are many polar materials available, they are usually not specifically targeting schools in the context of monitoring and field works.

This material includes real life examples of field campaigns and observations conducted in the Arctic and is oriented towards demonstration of various monitoring tasks in order to inspire interest of youngsters in undertaking similar careers in the future.
Educational toolkits

Educational toolkits include:
- 4 videos with researchers,
- INTAROS trailer,
- INTRAOS video and graphic on field campaigns in the Arctic,
- INTAROS marine TABOO game,
as well as products produced outside the project (e.g. National Geographic videos, WMO video, TedEd lesson, Polarpedia resources).
Engaging tasks

TABOO Rules
One person draws a card with a word and describes it so that the other players can guess it. Do not use any part of the word to be guessed nor synonyms. You cannot use four prohibited words that are on the card under the main word.

18 arctic pass words to be guessed!

Mind maps
Quizes
Input boxes
Marine TABOO game
- general information about the Arctic, its borders and living conditions
- why integrated Arctic observation system is crucial for understanding our Planet
- what is observed and what are the main ways of collecting of data
- becoming familiar with researcher’s work at polar stations
- work of meteorologist, geomagnetic observer, hydrochemist, glaciologist, geologist and geomorphologist.
Intaros Toolkit - Terrestrial Monitoring

Creator: Agata Goździk
Age Range: 15-16, Above 16
Big Ideas Of Science: Planet Earth
Subject Domains: Geography And Earth Science, Earth Science, Climate (Earth Science), Geography
Language: English
Average Learning Time: 90 Minutes
License: Creative Commons Attribution-Noncommercial (CC BY-NC) - default
Works Offline: No

Description
The package is dedicated to the monitoring of the Arctic. Students get the general information about the Arctic, its borders and living conditions and find out why integrated Arctic observation systems are crucial for understanding our planet. Moreover, they learn what is observed and what are the main ways of collecting data. They also become familiar with researcher's work at polar stations and learn about work of meteorologist, geomagnetic observer, hydrochemist, glaciologist, geologist and geomorphologist. Thanks to that they may draw conclusions about working in the field and assess how they would like it.
- the importance and uniqueness of the Arctic Ocean
- how the sea ice extent is changing over years and what are the consequences of the melting ice
- why the Arctic Ocean observations are crucial for understanding the planet
- becoming familiar with researcher’s work in polar regions
- various parameters measured and observed within marine monitoring

Welcome to the Arctic Ocean
Why sea ice is so important
Marine monitoring
Working in the field
Let's play
Wrap-up session
**Description**

The warming trend in the Arctic is twice as large as the global average in recent decades. The loss of sea ice amplifies the warming trend because the ocean surface absorbs more sun heat than the surface of snow and ice. How does that affect the planet? This INTAROS educational package will teach the students about the importance and uniqueness of the Arctic Ocean, how the sea ice extent is changing over years and what are the consequences of the melting ice and why the Arctic Ocean observations are crucial for understanding the planet. Moreover, they will become familiar with researcher's work in polar regions and learn about various parameters measured and observed within marine monitoring. They will be able to draw conclusions about working in the field and assess how they would like it.

This educational material was created within the INTAROS project funded from the European Union’s Horizon 2020 Research and Innovation Programme under GA No. 727890.
Links to the toolkits


https://www.golabz.eu/ils/intaros-toolkit-terrestrial-monitoring