'Insights into Ice & Climate' DEEPICE educational video series

Educational quiz

Note: This document contains a quiz designed specifically for educators to use in their classrooms, accompanying the DEEPICE project's series of 15 educational videos on ice core research. For each video, we propose one to two questions for students to answer, allowing teachers to assess whether the key messages have been effectively understood and retained.

DEEPICE educational video series *'Insights into Ice & Climate'* is available on DEEPICE YouTube channel :

https://www.youtube.com/watch?v=4Lr_CGcUddU&list=PLYycEWz9Iu3Rgeyy8pWingd-ai8oKg-io

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Video 1 – What is an ice core and what can they tell us?

Questions: What is an ice core ? What does it contain ? Explain in a few sentences what is called an « ice core » and what an ice core is made of.

Video 2 - What are ice sheets and where can we find them?

Questions: What is an ice sheet and how to they form ?

How are the ice sheets connected to the Earth's climate and environment?

Video 3 – In Thin Ice

Questions: What causes the thinning of the ice layers of which ice sheets are composed ?

Why is this thinning effect challenging for the analysis of the ice ?

Video 4 – Earth's Frozen Archives through Deep Ice Drilling

Question: How do we extract ice core ?

Video 5 – Why is recent climate change so concerning?

Question: How is the current climate change different from natural climate changes in the past?

Video 6 – From snowflakes to ice

Question: Why are there air bubbles trapped in the ice in Antarctica?

Video 7 – Ice beyond your eyes

Question: What is a snowflake ?

Video 8 – Ice Core paleothermometer : tracing deep time temperatures with water isotopes

Question: What do scientists analyse in the ice to reconstruct the past temperature in Antarctica?

Video 9 – Challenges of past temperature reconstruction from ice cores

Question: Why is the reconstruction of past temperature from the analysis of the ice is not that straightforward? Which events and processes scientists must take into account to estimate more precisely past temperatures?

Video 10 – Greenhouse gases in the atmosphere and trapped in old ice

Question: What natural processes contribute to the presence of greenhouse gases in the atmosphere, and how do these gases get removed over time?

Video 11 – Ice cores : Atmospheric history in air bubbles

Question: What did scientists learn from the analysis of gases trapped in ice cores about the Earth climate?

Video 12 – Impurities in polar ice : old climate record

Questions: From which type of sources impurities found in ice cores come from? Why climate scientists are interested by the study of these impurities?

Video 13 – Basal layers mystery

Question: What is basal ice and why is this ice special?

Video 14 – Glacial-Interglacial Cycles and Mid-Pleistocene Transition

Questions: What are glacial-interglacial cycles and why do they occur? What do we call the « Mid-Pleistocene Transition » ?

Video 15 – Ice cores and climate models

Question: How do climate scientists use data from ice core for climate modelling?

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