

CLASSROOM ACTIVITY

Archived in Ice: Rescuing the Climate Record

Follow scientist-adventurer Lonnie Thompson to the 5,670-meter-high Quelccaya ice cap in the Peruvian Andes. Thompson and his team from Ohio State University are racing to core a cylinder of 1,500-year-old ice to unravel the past climate patterns of this region—before our gradually warming climate melts this invaluable record away. By analyzing global ice cores, glaciologists like Thompson now have a well-preserved record for 150,000 years of climate history, allowing us to better predict future climate change.

CLASS DISCUSSION

Establish Prior Knowledge

Ask students what they know about ice cores and how they are collected. You may want to direct them to the “What is an Ice Core” interactive:

<http://www.amnh.org/sciencebulletins/content/e.f.glaciers.20050331/assets/147/>

Exploration

Have students watch the feature video and read the synopsis. Use the following questions to guide a class discussion.

- What is an ice core?
- What elements get trapped in ice cores?
- What do ice cores tell scientists about the climate history of Earth?
- What proof do scientists have that our climate is warming?
- Why is the Quelccaya glacier unique? What has been happening to the glacier in recent decades?

Wrap-Up

Use the following question to wrap up your discussion.

- How might the scientists in the video use the information they are collecting?

Extend

Students who want to learn more can visit these related links from NASA:

Fastest Glacier in Greenland Doubles Speed

<http://www.nasa.gov/vision/earth/lookingatearth/jakobshavn.html>

Find out what scientists are learning about a particularly speedy glacier in Greenland.

Glaciers Surge when Ice Shelf “Brakes” Break Up

http://www.nasa.gov/vision/earth/environment/glacier_breakup.html

Learn more about how glaciers point to important changes in our climate.

Sizing Up the Earth’s Glaciers

<http://earthobservatory.nasa.gov/Study/GLIMS/>

What are the dangers of glacier melt around the world? Scientists across the globe are racing to find out.

Monitoring Glaciers to Watch Global Warming

<http://earthobservatory.nasa.gov/Study/Glaciers/>

Read all about the various hi-tech tools and methods being used to study glaciers here.

The Scientific Method

Research scientists use the Scientific Method (see page two) to investigate the natural world. You can use *Archived in Ice* to illustrate how scientists formulate and test hypotheses.