

Using *Polar Visions* in Science Classrooms

Polar Visions is an exciting, visually stunning educational film about the causes and effects of climate change in polar regions. The film contains 7 stand-alone segments appropriate for use in classrooms from the middle level through college. The segments illustrate the problem of climate change and how scientists are working in Alaska and Greenland to understand it.

The video was developed to align strongly with the National Science Education Standards. Standards that appear throughout the film are outlined in the table below. Standards that are present in individual segments are outlined in the table on the reverse.

NSES Standards	Sub-Category Standards Emphasized in PV
Unifying Concepts and Processes	Evidence, Models, and Explanation
	Change, Constancy, and Measurement
Earth and Space	Structure of the Earth System
Physical Science	Interactions of Energy and Matter
History and Nature of Science	Science as Human Endeavor
Personal and Social Perspectives	Natural and Human-Induced Hazards
Science and Technology	Understanding about Science and Technology
Science as Inquiry	Understanding About Scientific Inquiry

Table 1. NSES Standards that align with running themes of *Polar Visions*

We recommend that teachers compare the segments of *Polar Visions* with their existing curriculum. Using the standards tables as a guide, find opportunities to show a segment or two of *Polar Visions* in conjunction with an existing activity or lesson about earth, life, or physical science you intend to teach. Alternately, *Polar Visions* can be used in full to introduce or cap off a unit on the Earth's climate, climate change or the nature of science. **2008 CIRES Education and Outreach**

Alignment of *Polar Visions* Video Segments to NSES Standards

NSES Standards	Grades 6-12 Sub-Categories	1: Introduction to Climate Change	2: Polar History	3: Alaskan Permafrost	4: Ice Core Drilling	5: Glaciers	6: Sea Ice	7: Conclusion and Solutions
Unifying Concepts and Processes	Evidence, Models, and Explanation	▪	▪	⊙	▪	▪	⊙	▪
	Change, Constancy, and Measurement	⊙	▪	▪	⊙	⊙	▪	▪
Earth and Space	Structure of the Earth System	▪	⊙	⊙	⊙	⊙	⊙	▪
	Energy in the Earth System	▪	▪	⊙	▪	▪	▪	▪
	Origin and Evolution of the Earth System	▪	▪	▪	⊙	▪	▪	▪
	Geochemical Cycles	▪	▪	⊙	▪	▪	⊙	▪
Life Science	Interdependence of Organisms	▪	▪	⊙	▪	▪	▪	▪
	Matter, Energy, and Organization in Living Systems	▪	▪	⊙	▪	▪	▪	▪
Physical Science	Structure and Properties of Matter	▪	▪	⊙	▪	▪	▪	▪
	Motions and Forces	▪	▪	▪	▪	⊙	▪	▪
	Interactions of Energy and Matter	▪	▪	⊙	▪	⊙	⊙	▪
History and Nature of Science	Science as Human Endeavor	▪	⊙	⊙	⊙	⊙	⊙	▪
	History of Science	▪	⊙	▪	▪	▪	▪	▪
Personal and Social Perspectives	Populations, Resources and Environments	⊙	▪	▪	▪	⊙	▪	▪
	Science and Technology in Society	▪	▪	▪	▪	▪	▪	▪
	Risks and Benefits	▪	▪	▪	▪	▪	▪	▪
	Natural Resources	▪	▪	⊙	▪	▪	⊙	▪
	Natural and Human-Induced Hazards	⊙	⊙	⊙	⊙	⊙	⊙	⊙
	Science and Technology in Local, National and Global Challenges	▪	▪	⊙	▪	▪	⊙	▪
Science and Technology	Understanding about Science and Technology	⊙	⊙	⊙	⊙	⊙	⊙	⊙
Science as Inquiry	Understanding About Scientific Inquiry	▪	⊙	⊙	⊙	⊙	⊙	▪