

Class Summary

Quick Facts

Outside: 2 hours

Grade: 4-8th

Offered: December through March

Physical Activity: <1 mile walk, moderate physical level

Other: Hands on activities and movement

Concepts

- Change/Culture
- Simple Machines
- Cause and Effect
- Cycles

Minnesota Academic Standards

- Science
- Language Arts
- Social Studies
- Physical Education

Classroom Activities

- Pre-Activity: TBD
- Post-Activity: TBD

STEM Components

- Hypothesize
- Test
- Investigate/Examine
- Explain/Interpret
- Experiment
- Predict
- Operate
- Manipulate

IB Profiles

- | | |
|---|---|
| <input checked="" type="checkbox"/> Inquirers | <input checked="" type="checkbox"/> Open-minded |
| <input checked="" type="checkbox"/> Knowledgeable | <input checked="" type="checkbox"/> Caring |
| <input checked="" type="checkbox"/> Thinkers | <input checked="" type="checkbox"/> Risk-takers |
| <input checked="" type="checkbox"/> Communicators | <input type="checkbox"/> Balanced |
| <input type="checkbox"/> Principled | <input checked="" type="checkbox"/> Reflective |

Revised January 2014

Outcomes, students will:

1. Know what animals lived in North America during the ice age.
2. Know that the ice age people were the first Native Americans.
3. Understand the leading theories of the causes and effects of an ice age.
4. Operate simple machines that early humans used to assist with work.
5. Discuss the impacts that humans have had and do have on the planet.

Brief Synopsis:

Travel back 12,000 years to a time when the Earth was cooler. Glaciers covered the land, mammoths walked amongst saber-toothed cats and nomadic humans used their resourceful minds for survival. Students will utilize simple machines to survive in a Pleistocene environment.

Activity Summaries:

Greeter Grabber (5 minutes)

Students list words that come to mind when they hear “Ice Age”.

Then, Both, Now, or Neither (10 minutes)

Students will differentiate between animals that lived during the ice age, just since the ice age, during both times, and neither time.

Mega Fauna Hunt (35 minutes)

After learning about the mechanical advantage of levers students will use a class 3 lever called an atlatl to throw projectiles.

Pleistocene Planet (15 minutes)

Students will define the terms ice age, glacier, and continental ice sheet. The leading theories of what causes an ice age will be discussed. Students will get an overview of what impacts a colder planet has on plants, animals, and humans.

Glacial Advance and Retreat (15 minutes)

Students will set up experiments to explain how giant sheets of ice moved across the Northern Hemisphere; forming a hypothesis, testing, and evaluating.

Nomadic Travelers (35 minutes)

The clan prepares to follow the bison herd and thus haul their gear and food using a class 2 lever, the travois. They will also move their source of warmth and light, fire, to their new camp.

Camp Skills (35 minutes)

Upon arriving at their new camp the students create tools from stone, split fire wood using a wedge, and build their fire to roast meat from their kill (beef hotdog or veggie hotdog)

Reflect and Return (30 minutes)

While warming by the fire the students will tell stories of the day’s adventure and reflect on human’s impact on the planet before striking camp and returning to the present time.

Outline

Preparation Before Class	(30 min.)
Greeter Grabber	(5 min.)
Then, Both, Now, Neither	(10 min.)
Mega Fauna Hunt	(35 min.)
Pleistocene Planet	(15 min.)
Glacial Advance	(15 min.)
Nomadic Travelers	(35 min.)
Camp Skills	(35 min.)
Reflect/Return/Conclusion	(30 min.)
Clean Up	(15 min.)

Weather Considerations

This class is designed to balance indoor and outdoor activities allowing students to come inside to warm up during severe cold weather. Some alternatives include:

- Using the shortest route to and from Campfire locations.
- Use only one travois to decrease travel time.

Equipment

Greeter Grabber:

- Mammoth tooth replica
- Mammoth hair sample
- Mastodon tooth replica
- Cast clovis point
- Saber-tooth cat replica
- Atlatl and dart

Projector Cart (from DC 20)

Map

Travois (2)

3d Targets (2)

Mesh Bag:

- 7 safety glasses in socks
- Lighter
- Leather mittens

Fire Keeper Pot, pine cones, birch bark

Burlap Bag

- 3 Atlatls
- 6 Projectiles

Food Tray, 2.5 and 5 pound weights, 2 silicone mats

In Lower Kitchenette: Ice cubes, hotdogs, Tofurkey

Humans Surviving the Ice Age

Class Framework

Topic:

Humans surviving the Ice Age

Theme:

Humans are resourceful and adapt to changes in their environment using tools (i.e. Simple Machines), movement, and their powerful brains for survival.

Universal Concepts and Generalizations:

1. Cycles: The Earth has cycled through several ice ages and interglacial periods.
2. Cause and Effect: The Earth's changing climate in the past (and future?) has had drastic effects on the planet's living things.
3. Change/Culture: Modern humans have changed their culture over time to survive in changing environments.
4. Simple Machines: Levers and wedges are simple machines that allow work to be achieved with less effort.