

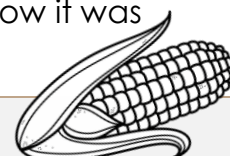
Demonstration Ideas

Science connections for the Native American research project

Pair one of these topics with a science unit you are already teaching. Each group prepares a short demonstration for its presentation. In every demonstration, students should **name the specific nation** and explain how its people used the idea or item.

1. Plants

Choose one plant a nation used for food, fiber, dye, or building, and show how it was used.



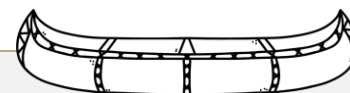
Plant	Nation and use
Corn, beans, and squash	the Three Sisters, grown together by the Haudenosaunee, Cherokee, and many other farming nations
Wild rice	harvested by canoe by Ojibwe and other Great Lakes nations
Birch bark	canoes and containers (Great Lakes nations)
Cedar	planks for houses, canoes, and bark for clothing and baskets (Northwest Coast nations)
Yucca	fiber for cord and sandals; roots for soap (Southwest nations)
Plants used for dye	Navajo weavers dyed wool with plants

Demonstration ideas: twist raffia or yarn into cord; grind dried corn between two stones; dye white yarn with onion skins or berries.

Skip plants used as medicine or in ceremonies. That knowledge is often private.

2. Simple Machines

Choose a tool and look for the simple machines “hidden” inside it. Build a model or demonstrate how it works.



Tool	Simple machine to look for
Canoe or kayak paddle	lever
Atlatl (spear-thrower)	lever: it makes the thrower's arm “longer”
Bow drill or pump drill	wheel and axle: used to start fires and drill holes in beads
Ulu (Inuit knife)	wedge
Digging stick or hoe	wedge and lever
Travois	reduces friction: compare dragging a load on a travois with carrying it

3. Food Preservation

Show how nations kept food from spoiling.

- **Drying:** corn, berries, salmon, and meat (many nations)
- **Smoking:** salmon (Northwest Coast nations)
- **Freezing:** meat and fish stored in the cold (Inuit)
- **Pemmican:** dried meat pounded with fat and berries (Plains nations)
- **Maple sugar:** sap boiled into sugar that keeps all year (Haudenosaunee and Great Lakes nations)

Demonstration idea: weigh apple slices, dry them in a sunny window or a food dehydrator for several days, then weigh them again. How much water was removed? Why does removing water keep food from spoiling?

4. Homes and Climate

Show how a home fit the climate where it was built.

- **Adobe (Pueblo nations):** thick mud-and-straw walls stay cool in the day and release warmth at night.
- **Igloo (some Inuit groups, in winter):** snow traps air, which makes it a good insulator.
- **Chickee (Seminole):** a raised floor stays dry, and open sides let breezes through in hot, wet Florida.
- **Plank house (Northwest Coast):** cedar planks stand up to a rainy climate.

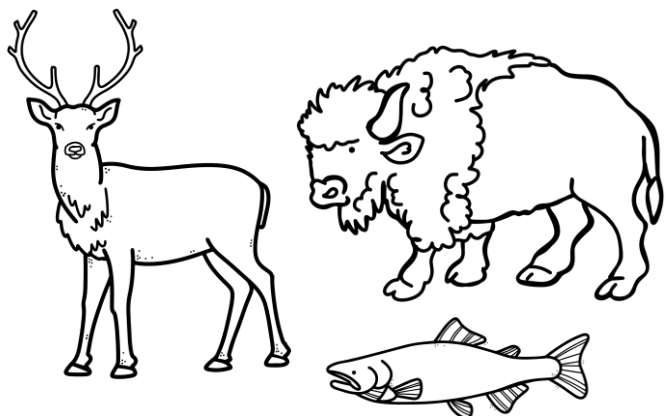
Demonstration idea: make two small test walls, one of mud and straw and one of thin cardboard. Place each under a lamp and measure the temperature behind it with a thermometer every five minutes. Which wall keeps the heat out longer?

Compare: describe one room in your home and one room in a traditional home of the nation you studied: beds, lighting, storage, and heat. Then find out what homes in that nation look like today.

5. Animals

Make a labeled diagram showing how a nation used each part of one animal: food, clothing, tools, containers, and shelter.

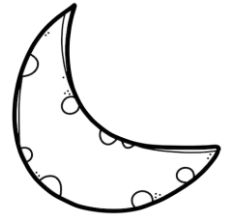
- bison (Plains nations)
- caribou or seal (Inuit)
- salmon (Northwest Coast nations)
- deer (Eastern Woodlands nations)



6. Astronomy

How did nations use the sky to know the seasons, plan planting, travel, and tell time?

- Many nations named each moon for what happened in that season. Research the moon names of one nation and make a moon calendar.
- Inuit travelers used the stars to find their way across the Arctic.
- Ancestral Pueblo people at Chaco Canyon built structures and made rock carvings that line up with the sun on important days of the year.



Star knowledge is different in every nation. Use a source from the nation you are studying.

Every demonstration should answer:

- Which nation used this?
- How did it work, and why did it work?
- Is it still used today, or how has it changed?