

Dorothy Hinshaw Patent
5445 Skyway Drive
Missoula, MT 59804
406-251-3820
Doropatent@gail.com
Dorothyhinshawpatent.com

Using Lewis and Clark in the Science Curriculum, with References

Paleontology

Jefferson hoped that Lewis might find living examples of animals for which only fossil bones had been found at the time, such as the giant ground sloth, *Megalonyx* (Animals p.7; Cutright pp. 5-6, 26). The concept of extinction, so fundamental to modern biology, hadn't been developed yet, so Jefferson's hopes weren't unreasonable.

This topic provides a great opportunity to discuss the history of science and scientific ideas; children would be amazed to discover that at the time Lewis and Clark departed, no one knew anything about dinosaurs!

Geology

Jefferson expected Lewis to find an easy water route across the country--this was the primary purpose of the expedition (Then and Now, pp. 6-7). European Americans at the time had no concept of the extent of the Rocky Mountains; they thought these mountains would be like the single range on rounded peaks of the Appalachian chain in the eastern United States so that boats could travel easily to the source of the Missouri River, then goods could be transported a short distance over the mountains and loaded on boats on the other side to travel to the Columbia River and then to the Pacific Ocean, where they could be shipped to Asian countries.

This is another topic that shows how far science has come in 200 years--plate tectonics tells us how the Rockies came about, for example.

Biology

The Lewis and Clark expedition abounds in topics relating to plants and animals. A few ideas to explore are:

1. Animal behavior--Lewis's journals contain many passages describing the behavior of animals, and some show how the animals have changed their behavior as European Americans persecuted them. Coyotes on the prairies, for example, used to live in packs (Animals pp. 44-45); now they are more often solitary. Grizzly bears once lived along the Missouri River in the open (Animals pp. 46-57); now they rarely come out of the forests.
2. Scientific classification--Lewis struggled to figure out the relationship of what we now call the pronghorn to other animals (Animals p. 20). This is a topic that can lead to a discussion of how scientists determine the biological relationships of animals and is related to the next suggested topic.
3. Scientific names--Lewis knew of the Linnean system of classification (Cutright p. 31, pp. 385-390; Animals p. 104) but didn't use it to name his "discoveries." If he had, he would have gotten scientific credit for his findings, but American scientists didn't totally accept the Linnean system at the time. This topic has many possibilities--how do scientists name organisms? What is the Linnean system? What is the current "family tree" of the living world?
4. Geographical distribution of living things--Lewis not only found "new" species, he also expanded the range of previously known species, such as the magpie (Animals, pp. 23-24) and a number of plants (Plants, pp. 15-17). This topic can be combined with geography--e.g. Many species of plants and animals have a circumpolar distribution and are found throughout the Northern Hemisphere (grizzly, or brown, bear; red fox; gray wolf; for example).
5. Medicines and plants--about a third of medical drugs come from plants, and traditional societies use plants for medicinal purposes. Jefferson was very interested in how Native Americans employed plants, and Lewis was well qualified for being aware of medicinal uses, as his mother was an herbalist (many parts of Plants are relevant here). This topic can expand in a number of directions--curing disease, chemistry of plants, native cultures, etc.

These are just a few suggestions; there's no end to the possibilities!

Resources

Books Referenced Above

- Cutright, Paul Russell, "Lewis and Clark: Pioneering Naturalists," University of Nebraska Press, Lincoln, 1969 [**Cutright**]
- Patent, Dorothy Hinshaw, "Animals on the Trail with Lewis and Clark," Clarion Books, 2002 [**Animals**]
- Patent, Dorothy Hinshaw, "The Lewis and Clark Trail Then and Now," Dutton, 2002 [**Then and Now**]
- Patent, Dorothy Hinshaw, "Plants on the Train with Lewis and Clark," Spring, 2003 [**Plants**]

Other Useful Books on Lewis & Clark and Science

- Botkin, Daniel B., "Our Natural History: The Lessons of Lewis and Clark," Perigee, 1995
- Burroughs, Raymond Darwin, ed., "The Natural History of the Lewis and Clark Expedition," Michigan State University Press, East Lansing, 1995
- Fifer, Barbara, and Vicky Soderberg, "Along the Trail with Lewis and Clark," Second Edition, Farcountry Press, 2001
- Long, Benjamin, "Backtracking: By Foot, Canoe, and Subaru Along the Lewis and Clark Trail," Sasquatch Books, Seattle, 2000