

## **Biomes and Climates of the Lewis and Clark Expedition**

**Sequencing:** 60 Minutes

- Warm Up – 10 Minutes
- Biome and Climate Exploration (4 Sections at ~10 minutes each) – 40 Minutes
- Wrap Up and Discussion – 10 Minutes

### **Explanation of Virtual Field Trip**

The virtual field trip can be completed as a whole class or individual if your school has student devices (Google Earth can be used on most devices, including cellphones). The information can be found on the attached Google Slides and Microsoft PowerPoint Slides. The presentation will explore the biomes and climates that the Lewis and Clark expedition traveled through during their exploration of the North American Interior. The slides include short videos (Hyperlinked to YouTube), Google Earth explorations (Hyperlinked on slides) and short answer response to check for student understanding along the way. The Google Earth links will allow for 360-degree views, allowing students to view what Lewis and Clark may have seen!

**Virtual Field Trip Google Slides** – [Linked HERE](#)

### **Definitions:**

- **Biome:** a large naturally occurring community of flora (plants) and fauna (animals) occupying a major habitat, e.g. forest or tundra (The plants and animals typically found in a habitat)
- **Climate:** the weather conditions prevailing in an area in general or over a long period. (Expected average weather in an area at a certain time)

### **Biomes and Climates Covered:**

Eastern Temperate Forests / Humid Continental

- **Biome:** North America's Eastern Deciduous Forest ecosystem stretches over 26 states from Florida up to New England and southern Canada, and extends as far west as Texas and Minnesota. These forests are dominated by broad-leafed trees that shed their leaves annually (deciduous), with evergreen cone-bearing seed plants (conifers) such as pines and hemlocks common in some areas.
- **Animals:** White tailed deer, raccoons, red foxes, broad-winged hawks, cardinals, Robbins
- **Climate:** occur across the world in the mid-latitudes (between the tropics and the polar regions) the eastern U.S. They are distinguished by warm and cold air masses that cause four distinct seasons a year.

Great Plains / Semiarid Steppe / Temperate Grassland

- **Biome:** Predominately dominated by grasses that are able to cope with the low annual precipitation, going dormant as the relatively wet spring gives way to the dry, hot summer. Few large shrubs or trees, due to lack of water and often high winds.

- Animals: Bison, antelope, jack rabbits, rattle snakes, prairie dogs
- Climate: Typically found in elevated portions of temperate zones (the Great Plains), typically bordering humid continental climates. Usually feature warm to hot dry summers and cold winters. Typically receives precipitation between 10 to 20 inches annually.

#### Highland / Alpine Tundra

- Biome: “Land above the trees”; The Alpine Tundra Ecosystem starts between elevations of 11,000 to 11,500 feet, depending on exposure. This is truly a land of extremes. Strong, frequent winds and cold temperatures help limit what plants can grow there. Most alpine plants are perennials. Many plants are dwarfed, but their few blossoms may be full-sized. Grasses and sedges are common where tundra soil is well-developed. Cold and windy conditions and a short summer season makes it hard for anything to live.
- Animals: Yellow-bellied marmot, American Pika, white-tailed ptarmigan, bighorn sheep
- Climate: Alpine climate is the typical weather for the regions above the tree line. This climate is also referred to as a mountain climate or highland climate.

#### Marine Westcoast

- Biome: Marine west coast climates are typically found to the west of large mountain ranges that cause fronts to collide and release all of their precipitation. Wet warm air from the coast rises and cools as it goes over the mountain. This causes the water in the air to cool and condense, resulting in rain, drizzle, and fog. This rain supports thick forests and a wide variety of plant life including evergreen trees, such as spruce, cedar, pine, and redwood. Many species of ferns and grasses also grow in this area.
- Animals: Squirrels, beavers, otters, bears, seals, sea lions
- Climate: In a Marine Westcoast Climate, the nearby ocean keeps the air over the land cool in the summer (averaging 72F) and warm in the winter (averaging 40F). The climate is mild but can be very wet. It can rain 150 and up to 100 inches of rainfall per year. Typically, only two seasons per year; summer and winter.

#### References:

- Ambrose, S. E. (2016). *Undaunted courage*. Simon & Schuster Ltd.
- Herbert, J. (2000). *Lewis and Clark for kids their journey of discovery with 21 activities*. Chicago Review Press.
- Johnsgard, P. A. (2003). *Lewis and Clark on the Great Plains: a natural history*. Bison.
- Lewis and Clark National Historic Trail (NPS) ([LINK](#))
- Lewis and Clark National Historic Park (NPS) ([LINK](#))
- Lewis and Clark Journals Archive (University of Nebraska) ([LINK](#))
- Eastern Deciduous Forests (NPS) ([LINK](#))
- Pacific Coast (NPS) ([LINK](#))
- Alpine Tundra Ecosystems (NPS) ([LINK](#))
- (Images) Jerrold R Warren Photography (Self/Author)