Alternative Method of Instruction

Grade 4

Day 2

Literacy and Social Studies: Lewis and Clark: American Explorers

A link is provided to a map of the Missouri River or you can use the map included to answer the questions to learn more about the Missouri River.

Math: Complete Mental Math: subtracting Whole Tens

Science: 4th Grade AMI Day 2

Read and answer all questions for the article “What is Photosynthesis”

Also Respond to the writing activity
Lewis and Clark: American Explorers
By Barbara Radner
2005

The Lewis and Clark Expedition, also known as the Corps of Discovery Expedition, was the first effort by Americans to explore what is now the western United States. President Thomas Jefferson had just completed the Louisiana Purchase in 1803, in which the United States bought a great deal of land from the French. He wanted American travelers to map and characterize the newly acquired territory and establish an American presence there. As you read, identify the difficulties that Lewis and Clark faced on their journey, and how they overcame them.

More than 200 years ago, in 1804, two explorers made an important journey. They were named Meriwether Lewis and William Clark.¹ Today, people know a lot about the places they visited, but 200 years ago there were no maps of that part of the United States. They would travel by boat most of the way and they would make the first maps of that part of our country. They were going to trace where a great river went. The river they were mapping is a very big one called the Missouri River.² They wanted to find out where it went. They hoped it would take them to the ocean.

They took many people with them to help with the exploration. There were more than 40 people on the trip. They also carried many supplies, including a lot of food. They hoped they would find food along the way, but this was long ago and they did not know what the territory would be like. The explorers had three boats to carry them and their supplies. It was summer when they started on this long trip.

They traveled slowly, each day traveling a short distance because they had to row their boats on the river. They would only travel a few miles every day. They traveled for months and were still far from their destination. In winter it was difficult to travel, so they camped along the river. There they would wait for spring when traveling would be easier. Snow and ice made it very hard to travel in winter.

Native Americans helped them along the way. They helped them get food, and they showed them where places were. The explorers had never been to this area before, so they were not sure where to find food or even where the river went. The Native Americans had lived there for many years, so they knew the area and how to survive there, even in the hard winter.

1. Lewis and Clark were friends and officers in the army. The two men were accompanied by a group of U.S. Army volunteers.
2. The Missouri River is the longest river in North America. It runs through Montana, North Dakota, South Dakota, Nebraska, Iowa, Kansas, and Missouri.
A Native American woman named Sacajawea³ helped them travel. She became their guide, and she traveled with them for months. It was hard work for everyone, including Sacajawea. The explorers needed her help to find their way to the West. They wanted to find out how to get to the ocean.

As they traveled, they made maps. Their maps showed the way the river went. It passed through grasslands, and then they were in mountains. When they got to the mountains, they had to leave their boats and walk.

It took more than a year for the explorers to get to the ocean. When they got there they had made maps that would help many people. But they had to bring the maps back. It had taken more than a year to make this first part of the trip. It also took a long time to get back. When the explorers came back, in 1806, they had been gone two years, and people said they were heroes. They would not make such a great journey again. They had done their job.

Their maps would help people settle in the new land. Long after their trip, people would build roads to the west. They would travel quickly by car. Today people can travel their route by plane. If you look out the window from the plane you will see those high mountains, you will see what a difficult journey it was.


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³ Sacajawea (1788-1812) was a Native American woman from the Lemhi Shoshone tribe who helped the Lewis and Clark expedition by guiding the men through unfamiliar territory, helping them communicate with other native populations, and explaining the environments they traveled through.
Discussion Questions

Directions: Brainstorm your answers to the following questions in the space provided. Be prepared to share your original ideas in a class discussion.

1. Would you have participated in this expedition if you had been alive in the 1800s? Do you think the thrill of discovery would have outweighed the dangers and risks associated with the trip?

2. Do you think that Lewis and Clark were heroes? Why do you think America regarded them as heroes when they returned and still regards them as heroes today?

3. How do you think an expedition to explore another country or another part of the United States would be different if it were made today? What sort of advances in technology would make it easier?

4. A primary purpose of the journey was for the explorers to make detailed maps of the American West to bring back to the government. Why do you think this was so important?

5. The author emphasizes how differences between America today and the America of the 19th century made Lewis and Clark's journey difficult. In the context of this article, how has America changed over time? Cite evidence from this text, your own experience, and other literature, art, or history in your answer.
The link below will open a link to a map of the Missouri River. Use the map to answer the questions below.

https://www.google.com/search?q=missouri+river&safe=strict&rlz=1C1GCEA_enUS810US810&tbm=isch&source=iu&ictx=1&fir=GxgjehUkd_lbvm%253A%252Cbv0L2CmlSBssM%252C_%usg=AI4_-kQv0Li2_GQ5CR-P9yJhnBC93k2Iog&sa=X&ved=2ahUKEwjzp6LuzaTeAhUDXawKHbzwD2sQ9QEWBHoeCAEQCA#imgdii=8W6sVVJhmnqUIM:&imgrc=GxgjehUkd_lbvm:

The Missouri River flows east and south for 2,341 miles before entering the Mississippi River.

1. What two cities are near where the river begins and ends?

2. Name three other cities located on or near the Missouri River?

3. Name 7 states that the Missouri River flows through.
Mental math: subtracting whole tens

Grade 4 Subtraction Worksheet

Find the difference.

1. 820 - 750 = ____________
2. 570 - 430 = ____________
3. 810 - 580 = ____________
4. 780 - 90 = ____________
5. 130 - 60 = ____________
6. 800 - 580 = ____________
7. 470 - 90 = ____________
8. 510 - 240 = ____________
9. 460 - 260 = ____________
10. 630 - 100 = ____________
11. 300 - 200 = ____________
12. 370 - 70 = ____________
13. 820 - 730 = ____________
14. 520 - 390 = ____________
15. 890 - 150 = ____________
16. 910 - 370 = ____________
17. 630 - 430 = ____________
18. 230 - 120 = ____________
19. 530 - 290 = ____________
20. 640 - 230 = ____________
What is Photosynthesis?

Photosynthesis (photo = light and synthesis = to make) is the process plants use to change carbon dioxide and water into sugar using sunlight. This sugar (glucose) is their food, and the process gives off oxygen.

Photosynthesis is the conversion of light energy into chemical energy by living organisms. The raw materials are carbon dioxide and water. The energy source is sunlight, and the end-products include glucose and oxygen. It is arguably the most important biochemical pathway, since nearly all life depends on it. It is a complex process occurring in higher plants, phytoplankton, algae, as well as bacteria such as cyanobacteria. Photosynthetic organisms are also referred to as autotrophs.

Photosynthesis is the process by which plants, some bacteria, and some protistans use the energy from sunlight to produce sugar, which cellular respiration converts into ATP, the "fuel" used by all living things. The conversion of unusable sunlight energy into usable chemical energy is associated with the actions of the green pigment chlorophyll. The photosynthesis process uses water and releases oxygen that we absolutely must have to stay alive.

We can write the overall reaction of this process as:

$$6H_2O + 6CO_2 + \text{light} \rightarrow C_6H_{12}O_6 + 6O_2$$

6 water molecules + 6 carbon dioxide molecules + light is converted into 1 glucose molecule and 6 oxygen molecules

The first photosynthetic organisms probably evolved about 3,500 million years ago, early in the evolutionary history of life, when all forms of life on Earth were microorganisms and the atmosphere had much more carbon dioxide. They most likely used hydrogen or hydrogen sulfide as sources of electrons, rather than water.
Photosynthesis Multiple Choice Questions

1. The process of photosynthesis gives off
   a) Carbon di oxide
   b) Nitrogen
   c) Oxygen
   d) None of the above

2. Which of the following is NOT involved in process of photosynthesis?
   a) Sunlight
   b) Sugar (glucose)
   c) Water
   d) Nitrogen

3. Photosynthesis is the conversion of ____ into _____.
   a) Chemical energy in light energy
   b) Chemical energy into food
   c) Light energy in chemical energy
   d) Potential energy into kinetic energy

4. For plants, the end product of the process of photosynthesis is
   a) Oxygen
   b) Glucose
   c) Water
   d) All of the above

5. The first photosynthetic organisms probably evolved about how many years ago?
   a) 3500 million
   b) 4500 million
   c) 5500 million
   d) 7000 million
What is Photosynthesis? Writing Activity

1. Explain briefly the process of photosynthesis.

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2. What are autotrophs?

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3. What is the chemical equation that explains the process of photosynthesis?

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4. Is it possible that some animals may also have photosynthesis? If not, give reason.

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