

the king and his lords, his wives, and his concubines drank from them. 4 They drank wine and praised the gods of gold and silver, bronze, iron, wood, and stone.

5 Immediately the fingers of a human hand appeared and wrote on the plaster of the wall of the king's palace, opposite the lampstand. And the king saw the hand as it wrote. 6 Then the king's color changed, and his thoughts alarmed him; his limbs gave way, and his knees knocked together. 7 The king called loudly to bring in the enchanters, the Chaldeans¹, and the astrologers. The king declared to the wise men of Babylon, "Whoever reads this writing, and shows me its interpretation, shall be clothed with purple and have a chain of gold around his neck and shall be the third ruler in the kingdom." 8 Then all the king's wise men came in, but they could not read the writing or make known to the king the interpretation. 9 Then King Belshazzar was greatly alarmed, and his color changed, and his lords were perplexed.

10 The queen, because of the words of the king and his lords, came into the banqueting hall, and the queen declared, "O king, live forever! Let not your thoughts alarm you or your color change. 11 There is a man in your kingdom in whom is the spirit of the holy gods. In the days of your father, light and understanding and wisdom like the wisdom of the gods were found in him, and King Nebuchadnezzar, your father—your father the king—made him chief of the magicians, enchanters, Chaldeans, and astrologers, 12 because an excellent spirit, knowledge, and understanding to interpret dreams, explain riddles, and solve problems were found in this Daniel, whom the king named Belteshazzar. Now let Daniel be called, and he will show the interpretation."

Daniel Interprets the Handwriting

13 Then Daniel was brought in before the king. The king answered and said to Daniel, "You are that Daniel, one of the exiles of Judah, whom the king my father brought from Judah. 14 I have heard of you that the spirit of the gods is in you, and that light and understanding and excellent wisdom are found in you. 15 Now the wise men, the enchanters, have been brought in before me to read this writing and make known to me its interpretation, but they could not show the

¹ Chaldeans: Members of Chaldea; ruled Babylonia; known for astronomy and astrology

day and prayed and gave thanks before his God, as he had done previously. **11** Then these men came by agreement and found Daniel making petition and plea before his God. **12** Then they came near and said before the king, concerning the injunction, “O king! Did you not sign an injunction, that anyone who makes petition to any god or man within thirty days except to you, O king, shall be cast into the den of lions?” The king answered and said, “The thing stands fast, according to the law of the Medes and Persians, which cannot be revoked.” **13** Then they answered and said before the king, “Daniel, who is one of the exiles from Judah, pays no attention to you, O king, or the injunction you have signed, but makes his petition three times a day.”

14 Then the king, when he heard these words, was much distressed and set his mind to deliver Daniel. And he labored till the sun went down to rescue him. **15** Then these men came by agreement to the king and said to the king, “Know, O king, that it is a law of the Medes and Persians that no injunction or ordinance that the king establishes can be changed.”

16 Then the king commanded, and Daniel was brought and cast into the den of lions. The king declared to Daniel, “May your God, whom you serve continually, deliver you!” **17** And a stone was brought and laid on the mouth of the den, and the king sealed it with his own signet and with the signet of his lords, that nothing might be changed concerning Daniel. **18** Then the king went to his palace and spent the night fasting; no diversions were brought to him, and sleep fled from him.

19 Then, at break of day, the king arose and went in haste to the den of lions. **20** As he came near to the den where Daniel was, he cried out in a tone of anguish. The king declared to Daniel, “O Daniel, servant of the living God, has your God, whom you serve continually, been able to deliver you from the lions?” **21** Then Daniel said to the king, “O king, live forever! **22** My God sent his angel and shut the lions' mouths, and they have not harmed me, because I was found blameless before him; and also before you, O king, I have done no harm.” **23** Then the king was exceedingly glad, and commanded that Daniel be taken up out of the den. So Daniel was taken up out of the den, and no kind of harm was found on him, because he had trusted in his God. **24**

29 Then Belshazzar gave the command, and Daniel was clothed with purple, a chain of gold was put around his neck, and a proclamation³ was made about him, that he should be the third ruler in the kingdom.

30 That very night Belshazzar the Chaldean king was killed. 31 And Darius the Mede received the kingdom, being about sixty-two years old.

Daniel and the Lions' Den Ch. 6

It pleased Darius to set over the kingdom 120 satraps⁴, to be throughout the whole kingdom; 2 and over them three high officials, of whom Daniel was one, to whom these satraps should give account, so that the king might suffer no loss. 3 Then this Daniel became distinguished above all the other high officials and satraps, because an excellent spirit was in him. And the king planned to set him over the whole kingdom. 4 Then the high officials and the satraps sought to find a ground for complaint against Daniel with regard to the kingdom, but they could find no ground for complaint or any fault, because he was faithful, and no error or fault was found in him. 5 Then these men said, "We shall not find any ground for complaint against this Daniel unless we find it in connection with the law of his God."

6 Then these⁵ high officials and satraps came by agreement to the king and said to him, "O King Darius, live forever! 7 All the high officials of the kingdom, the prefects and the satraps, the counselors and the governors are agreed that the king should establish an ordinance and enforce an injunction, that whoever makes petition to any god or man for thirty days, except to you, O king, shall be cast into the den of lions. 8 Now, O king, establish the injunction⁶ and sign the document, so that it cannot be changed, according to the law of the Medes and the Persians, which cannot be revoked." 9 Therefore King Darius signed the document and injunction.

10 When Daniel knew that the document had been signed, he went to his house where he had windows in his upper chamber open toward Jerusalem. He got down on his knees three times a

³ Proclamation: An official announcement

⁴ Satraps: Provincial governors in the ancient Persian empire

⁵ Ordinance: An official command

⁶ Injunction: An authoritative warning or order

The Vastness of Space

Chapter

2

Every star may have its own solar system. Our solar system plus millions of others form a much larger system called a **galaxy**. Galaxies are collections of dust, gas, stars, and their orbiting objects.

One galaxy may have hundreds of billions of stars. And there may be as many as 100 billion galaxies in all of space.

How do we know about objects in space? Scientists and engineers have developed telescopes and spacecrafts that explore deep space. For example, in 1977, NASA launched the *Voyager 1* and *Voyager 2* spacecrafts to travel past the edge of our solar system and collect data along the journey. Together, they continue to explore beyond the edge of our solar system, sending information back to Earth.



The *Voyager* probes took pictures of planets as they passed them and sent the photos back to Earth via radio signals.

Big Question

What is the universe, and what are galaxies?

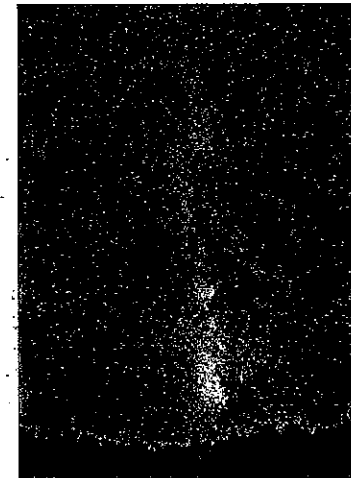
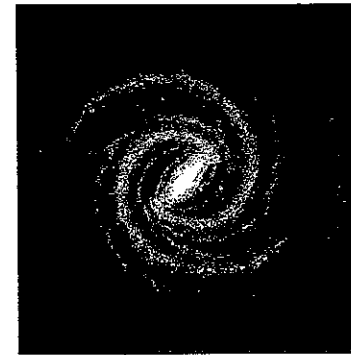
Vocabulary

galaxy, n. a collection of stars and their solar systems, dust, and gas

Our Solar System Is Part of the Milky Way Galaxy

Our solar system is part of a galaxy known as the Milky Way. The Milky Way is a large, spiral-shaped galaxy that likely contains billions of other solar systems. Our solar system is located on one of the Milky Way's outer arms. All of the stars that you can see in the night sky are part of the Milky Way. Just as objects orbit the sun, our solar system revolves around the center of the Milky Way.

No person or spacecraft has ever traveled outside of the Milky Way to look back and take a picture of it. Scientists have pieced together clues from telescope images and other data to determine the Milky Way's shape and what it is made of.



Think about why the Milky Way galaxy might be named the way it is.

Galaxies Are Part of the Universe

Objects in space move and interact as systems. Scientists study systems and their parts to better understand and explain what they are made of and how they work. The sun, Earth, and other planets are part of a solar system. Our solar system is part of the Milky Way galaxy.

The Milky Way galaxy is one galaxy in a very vast **universe**. The universe contains everything in space, including all forms of matter and energy.

Over the years, scientists have collected data about the universe. They estimate that it is approximately 13.77 billion years old. It may have begun as a very small ball of hot, dense matter that suddenly exploded. It continues to spread out. How do scientists know this? By observing that galaxies are getting farther apart.



This image from the Hubble Space Telescope captured approximately fifteen thousand of the galaxies in the universe.

Vocabulary

universe, n. all of the existing matter and energy in space

People Use Technology to Explore Space

Scientists have been using technology to observe, measure, and explore space for many years now. Over time, people have developed many tools for space exploration, including rovers, probes, satellites, and telescopes. Humans control these instruments from Earth.

Rovers: A rover is a probe that can travel after it has landed. It's a robotic vehicle remotely controlled to study the surface of a planet or moon. Rovers gather samples and collect data. They send information back to scientists on Earth. A rover named *Curiosity* landed on Mars in 2012. One of its purposes is to help scientists determine whether Mars might host tiny life-forms called microbes. *Curiosity* analyzes soil and rock samples. Two earlier rovers, *Spirit* and *Opportunity*, landed on Mars in 2004. They were intended to operate for about three months. But *Spirit* continued to collect data for ten years, and *Opportunity* operated for fourteen years. They found evidence that Mars used to have a watery surface and warmer climate.



In addition to transmitting photos back to Earth, rovers have instruments that determine the chemical makeup of material samples.

Probes: A probe is a kind of spacecraft that is launched from Earth on a rocket and sends information back to Earth via radio signals. Some probes land on other planets or moons and send back data from their landing site. Other probes collect data about the objects they are studying as they fly by without landing. The *Voyager* probes have traveled, and are still traveling, farther than any other spacecraft.

Satellites: A satellite is either a natural or human-made object that orbits another object. Human-made satellites are launched from Earth on rockets and guided into orbit around the objects they are sent to study. Satellites gather data, including photos, and transmit them back to Earth. Satellites take photos of planets, asteroids, and other objects of the universe. They help scientists study parts of the universe that are difficult to explore.

Telescopes: Telescopes are instruments that show faraway objects in greater detail. Telescopes may consist of lenses and mirrors that focus light to magnify images. Or they may collect radio waves from distant objects and use them to construct pictures of the objects. The Hubble Space Telescope was launched into space in 1990. Hubble collects light. It has revealed the formation of stars and images of distant galaxies.



The Hubble Space Telescope took this image of clouds of dust and gas. Scientists call this the Pillars of Creation. They were released during the formation of new stars inside the Eagle Nebula.

11

Humans Explore Space



John Glenn climbs into the *Friendship 7* spacecraft.

Probes, rovers, satellites, and telescopes are spacecrafts that travel without humans on board. But there have also been spacecraft that have taken human crews into space. Women and men from many different nations have orbited Earth, and some even visited the moon.

On May 5, 1961, Alan Shepard became the first American to travel to space. He flew aboard the *Freedom 7* spacecraft, and the flight lasted about fifteen minutes. This mission gave scientists valuable information about how the human body behaves during space travel. It also helped them identify and fix problems with space flight equipment and procedures.

Just a few months later, John Glenn became the first American to completely orbit Earth. He circled the Earth three times in just under five hours inside an aircraft known as *Friendship 7*.

Words to Know

A **crew** is the person or group of people who carry out duties aboard a vessel.

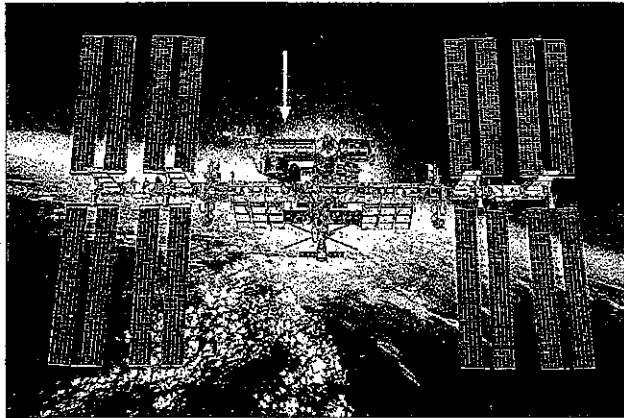
Uncrewed spacecrafts do not carry people.

Crewed missions have people onboard.

12

Humans first landed on the moon on July 20, 1969, during the Apollo 11 mission. American Astronauts Edwin "Buzz" Aldrin and Neil Armstrong landed their lunar module, the *Eagle*, on the moon's surface in an area known as the Sea of Tranquility. They spent two hours on the moon. During this time, they collected rock and soil samples. They also conducted experiments to learn more about the moon's environment.

Space Station: Did you know that there is a place in space where humans can live for days, weeks, or even months? The International Space Station (ISS) is a moving laboratory in space. It orbits Earth once every ninety minutes. Scientists from around the world arrive at the ISS via spacecraft. Then they live there while they conduct experiments in physical science, Earth science, and biology. If you go outside on a clear night, you may be able to see the ISS as it travels across the sky!



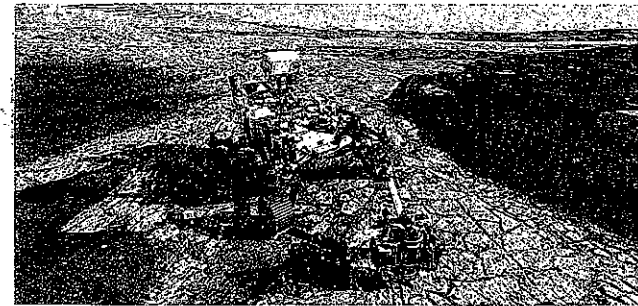
Astronauts live and work inside the tube-shaped modules of the station for months at a time. The section that the arrow points to in this picture is about the size of a school bus.

13

Humans May Travel to Mars and Beyond

So far, humans have not traveled any farther from Earth than the moon. But scientists are working to develop ways to explore deeper parts of space, with the goal of someday landing on Mars. One of the most important developments is the design of new vehicles, such as NASA's *Orion* spacecraft. *Orion's* first mission will be uncrewed, and it will travel thousands of miles past the moon. This is farther than any spacecraft built for human space exploration has ever gone. Eventually, scientists are hoping that this spacecraft will take humans safely to Mars.

Scientists also have plans to use another rover to explore a region of Mars that they think may have been able to support life at one time. The rover will drill to collect rock and soil samples deep below the planet's surface. Then it will store these samples for scientists to study at a later time. This rover will also help gather information that scientists can use when planning the first human space flight to the red planet.



The *Mars 2020* rover is designed to collect samples. A future mission might return those samples to Earth.

14

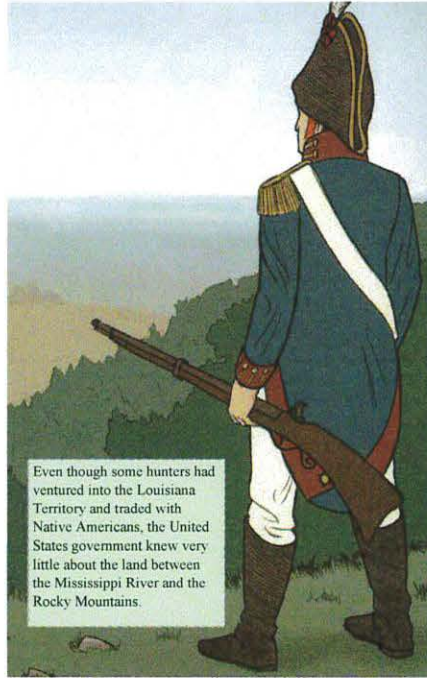
CHAPTER 2 EXPLORING THE LOUISIANA TERRITORY

Before you read, **STOP** and think...

What would be needed to explore new territory?

Unknown Territory In 1803, the United States gained the Louisiana Territory, a vast area of land between the Mississippi River and the Rocky Mountains. Strange as it may seem, the United States government purchased this territory from France with little knowledge of what it was actually getting.

The Big Question
How might Lewis and Clark's expedition and findings have helped the United States government?



Even though some hunters had ventured into the Louisiana Territory and traded with Native Americans, the United States government knew very little about the land between the Mississippi River and the Rocky Mountains.

Was the land good for farming? What kinds of plants grew there? What kinds of animals or even mythical beasts lived there? What about the Native Americans who lived there—would they welcome settlers? Could trading opportunities be developed with Native Americans? How high were the Rocky Mountains, and was there a way to cross them? Better yet, might the land possibly contain a way to reach the Pacific Ocean entirely by water—the long-dreamed of Northwest Passage?

- STOP**
1. Underline, in the text, the reasons for purchasing the Louisiana Territory.
 2. Circle, in the text, who the Louisiana Territory was purchased from.
 3. Shade in the Louisiana Territory on page 5 of your journal.

The Expedition

President Thomas Jefferson was very interested in scientific discovery. He decided to send an expedition to find the answers to these and many other questions. Jefferson chose his twenty-nine-year-old private secretary, Meriwether Lewis, to lead the expedition. Lewis had also served as an army captain on the frontier, and he was an experienced explorer. Lewis asked a friend from his army days, William Clark, to lead the expedition with him. Both men were filled with the spirit of adventure. It was a good thing, too, for there was plenty of adventure—and danger—ahead of them.

STOP
Underline, in the text, the names of the two people Thomas Jefferson chose to lead a frontier expedition.

The two expedition leaders prepared for the long journey. They hired strong men to make the trip with them. They bought large amounts of clothing, tools, and medical supplies. They also bought plenty of ammunition. Even though the explorers were bringing several tons of food, they would have to hunt for most of what they would eat. They would also have to protect themselves from any dangers.

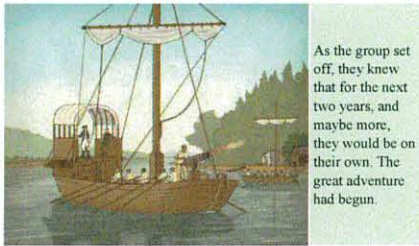
Did you know?
A full grown, male polar bear weighs 1 ton. Imagine how much food the explorers travelled with!

Knowing they would be meeting and dealing with many groups of Native Americans, Lewis and Clark also put together a list of goods to trade and to give as gifts, including 2,800 fish hooks and 4,600 needles, as well as colored beads, silk ribbons, and mirrors.

Vocabulary
interpreter, n.
a person who translates from one language to another

Finally the Lewis and Clark expedition was ready to depart. On a clear morning in May 1804, the explorers—along with soldiers, several experienced frontiersmen, and three **interpreters** who spoke various Native American languages—climbed into their boats on the Missouri River near the town of St. Louis. They were also joined by fifteen other

men who would travel with them part of the way. Together, the men began to paddle the boats upstream.



As the group set off, they knew that for the next two years, and maybe more, they would be on their own. The great adventure had begun.

STOP

Underline the start date of the expedition. Mark this date on the timeline on page 8 of your journal.

Several months later, the group reached what is now North Dakota, where they stopped to spend the winter in a Mandan village. The Mandan were used to housing the fur traders who came through the area. There the group used their time well, repairing their equipment, making six new canoes, and learning all they could from the Mandan people about the land and about the other Native American tribes they might meet along the way.

Sacagawea

Realizing they would need more people who understood Native American languages, Lewis and Clark added two

new people to their company. One was a French Canadian trapper named Charbonneau (/shar*bah*noh/), who had lived among Native Americans for many years. The other was Charbonneau's sixteen-year-old wife, Sacagawea (/sak*uh*juh wee*uh/), who was expecting a child. Sacagawea had been kidnapped as a young girl. Now she lived with her husband and the Mandan.

With the arrival of spring, the expedition, which they called the "Corps of Discovery," set out once more. They paddled up the Missouri River in their new canoes. The exploring party was now smaller, for this was as far as the extra men from St. Louis would go. But the expedition had also added a new passenger: Sacagawea's baby boy.

STOP

Answer question number 1 of page 4 in your journal.



Sacagawea and her baby boy traveled with the expedition.

7

In the summer of 1805, the explorers reached the source, or starting point, of the Missouri River, in present-day Montana. They were entering the country of the Shoshone—Sacagawea's original people. One day, Lewis and several of his men met a group of sixty Shoshone. They were friendly toward the explorers and welcomed them.

Several days later, it was arranged that Sacagawea would meet with the Shoshone leader. When she did, she could hardly believe her eyes. The chief of the group was her very own brother! The brother and sister had a joyful reunion. Later, with Sacagawea's help **translating**, Lewis traded goods with the Shoshone for horses that would help the explorers cross the Rocky Mountains.

Vocabulary
translate, v. to
restate in another
language

By mid-August, the Lewis and Clark party had made it to the Continental Divide. This is the line high in the Rockies from which all the rivers flow to the east on one side and to the west on the other. It was an exciting moment for the group. But dangerous rocky trails lay ahead as they began their climb down the western slopes.

In October, the men lowered their canoes into the waters of the Snake River. They paddled down the Snake River into the Columbia River until, in November 1805, they sighted the Pacific Ocean.

Imagine the thrill this group of explorers felt at the moment they first spotted the ocean! William Clark wrote in his journal entry for November 7, 1805, "Ocean in view! O!

the joy." No words could have possibly captured the excitement of that moment.



After months of travel, the Lewis and Clark expedition finally reached the Pacific Ocean.

STOP

Underline the start date the expedition reached the Pacific Ocean. Mark this date on the timeline on page 8 of your journal.

The Return Trip

After a mild winter on the Pacific Coast, it was time to head home. Sacagawea, her husband, and their infant son left the group when it reached the Mandan village from which they

8