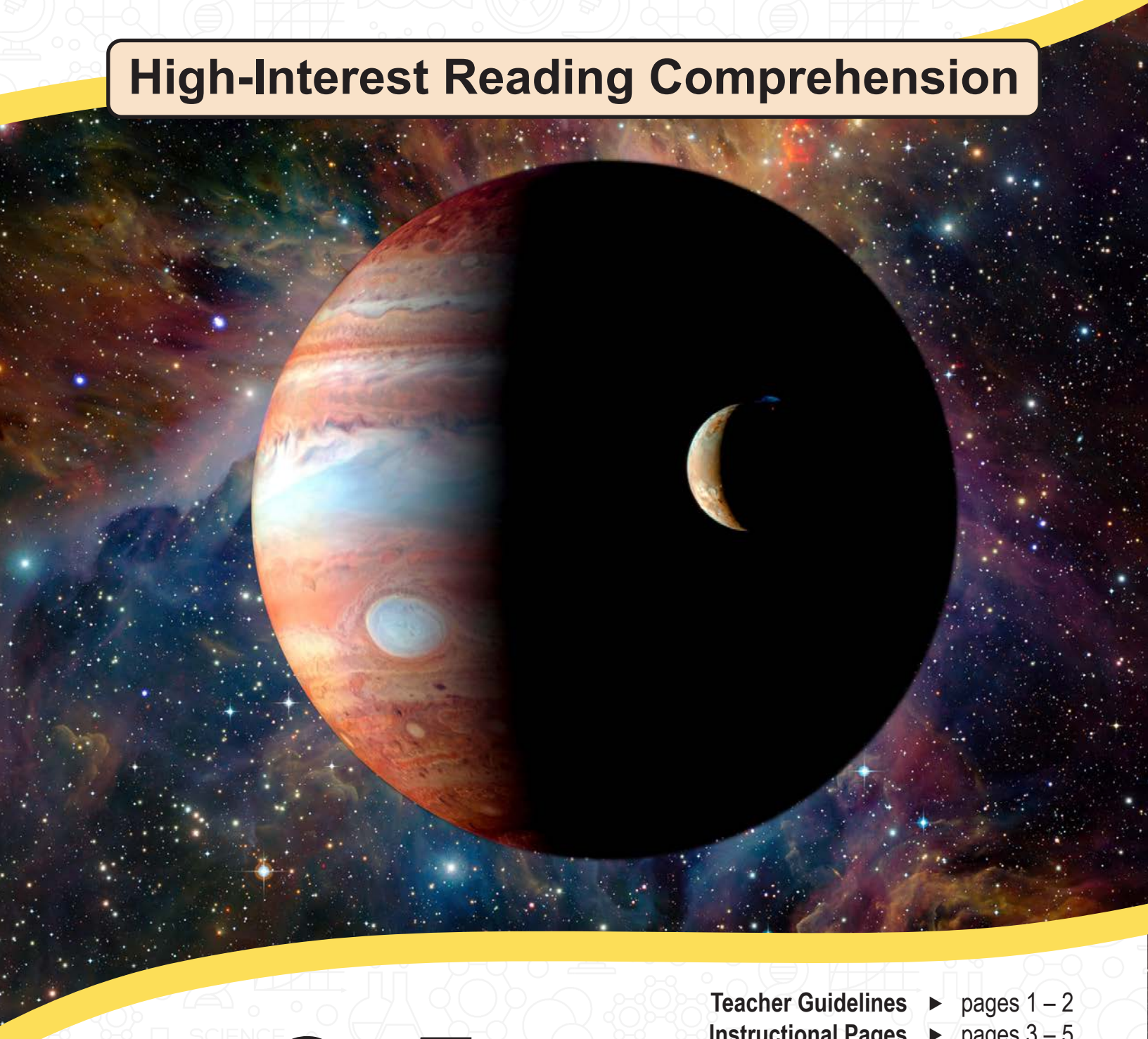
PLANETS

Learn BRIGHT

JUPITER

High-Interest Reading Comprehension



GRADE 3-5

Classroom Procedure:

1. Introduce the lesson with the following: Did you know that Jupiter spins faster than any other planet in the solar system? A single day on Jupiter lasts just under 10 Earth hours, even though the planet is huge! Let's explore this giant, spinning world, and learn what makes it fascinating..
2. Distribute the *Planets: Jupiter* Content Pages. Read and review with students. Point out the text features like numbered paragraphs, images, **bold** printed words, and insets. Explain to students that authors add text features to help readers comprehend and find information in the text more easily. Have your students annotate, take notes, highlight, or underline information as they read.
3. Distribute the Activity Pages. Be sure to review the list of student supplies and the instructions before beginning the activity.
4. Distribute the Practice Pages. Read and review the questions with students to check for understanding. The Practice Pages can be an independent, group, or summative assessment.
5. In closing, ask students what they learned about the planet. Do you think exploration of other planets is important? Explain. Ask students reading comprehension questions. What are text features? How do text features help readers comprehend what the author is trying to communicate?

Lesson Title: Planets: Jupiter

Subject: High-Interest Informational Reading

Approximate Grade Level: 3 – 5

Objectives: The student will practice various close reading and comprehension skills. In addition, the student will determine the central idea or theme and understand more about the planet Jupiter.

State Educational Standards*:
NGSS.1-ESS1-1
NGSS.5-ESS1-1
NGSS.5-ESS1-2
LB.ELA-LITERACY.RL.4.6

Approximate Lexile Reading Comprehension Level: 810L to 1000L

Class Sessions (45 minutes):
1 to 1½ class sessions

Teaching Materials/Worksheets:
Content Pages (3), Activity Pages (2), Practice Pages (4)

Student Supplies:
For handcrafted scrapbooks: Paper, markers, crayons, colored pencils, glue sticks, scissors, printed pictures of Jupiter and its moons, stickers (stars, planets, rockets), magazines for cutting out space-themed images, glitter, rulers

For digital scrapbooks: Computer or tablet, access to a digital design program (Canva, Google Slides, PowerPoint), internet connection for researching images, printer (optional for printing completed pages)

Prepare Ahead of Time:
Copies of worksheets

*Lessons are aligned to meet the education objectives and goals of most states. For more information on your state objectives, contact your local Board of Education or Department of Education in your state.

Teacher Notes

The lesson allows teachers to teach and students to practice grade-appropriate reading comprehension, foundational reading, and reading fluency skills. These lessons are designed to be completed in one or two class settings. Each lesson is a high-interest content lesson that students want to read, which teachers will want to incorporate into their instruction. The lesson is appropriate as a whole-class, stand-alone lesson or as an independent small-group activity. Be sure to check out other Learn Bright lessons and videos!

Planets: Jupiter

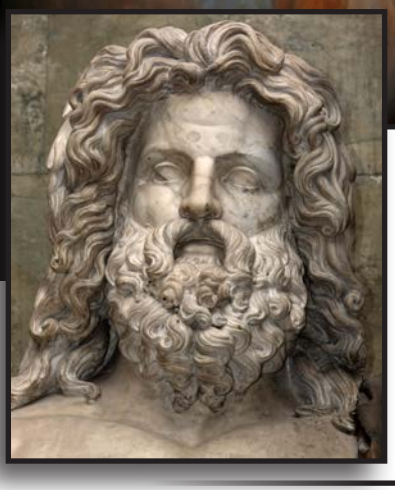
QUICK FACTS:

Location: Fifth planet from the sun

Average temperature: -234°F (-148°C)

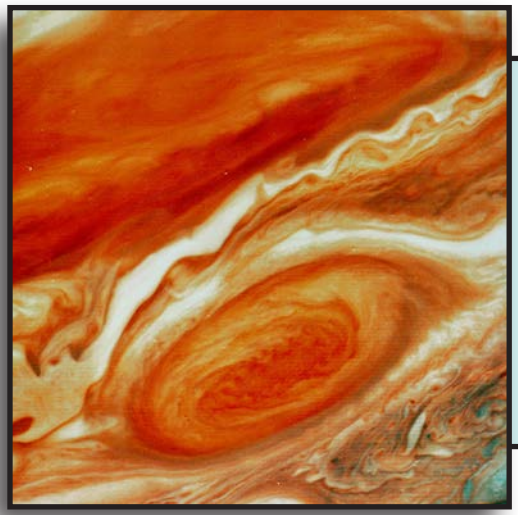
How long to get to Jupiter from Earth: 5–6 years

Gravity: 100 pounds on Earth = 253 pounds on Jupiter



[1]Jupiter is the largest planet in our solar system. It's named after the king of the Roman gods because of its **massive** size and power. It is about 484 million miles away from Earth. To put that into perspective, it would take many years to arrive there if you could fly there on a spaceship. Jupiter is also the fifth planet from the sun, making it one of the colder worlds in our solar system.

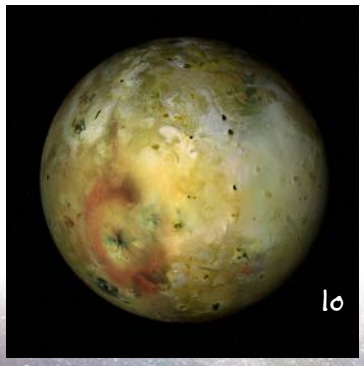
[2]One of the first things you'll notice about Jupiter is its colors. It has beautiful bands of orange, white, and brown. These colors come from the gases in its atmosphere, which **swirl** around in storms of powerful winds. Jupiter is like a giant marble swirling with colorful paint. This planet is a gas giant. Unlike Earth, it doesn't have a solid surface. It's made mostly of hydrogen and helium, the same stuff that stars are made of! You'd sink through its thick clouds if you tried to land on the surface.

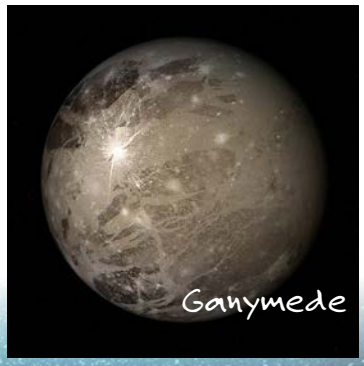


[3]Jupiter is famous for its Great Red Spot, a massive storm that has been **raging** for over 300 years. This storm is so big that three Earths could fit inside it! Scientists believe the storm stays active because of the planet's strong winds and the energy in its atmosphere. Besides the Great Red Spot, Jupiter has many other storms, some of which create lightning that is more powerful than what we experience on Earth.

[4]The weather on Jupiter is wild and extreme. The planet's atmosphere is filled with storms, some of which last for centuries. Its winds can reach up to 384 miles per hour, much faster than the strongest hurricanes on Earth. Scientists study Jupiter's weather using telescopes and spacecraft, like the Juno mission, which has been orbiting Jupiter since 2016. Juno has sent back incredible photos and data, helping scientists understand how the planet's atmosphere works.

[5]Another thing that makes Jupiter fascinating is its 95 moons. The four largest moons—Io, Europa, Ganymede, and Callisto—are called the Galilean moons because Galileo discovered them in 1610. Io is covered in active volcanoes, making it the most volcanic place in the solar system. Europa might have an ocean beneath its icy crust, and scientists think life could exist there. Ganymede is the largest moon in the solar system and has its own magnetic field!



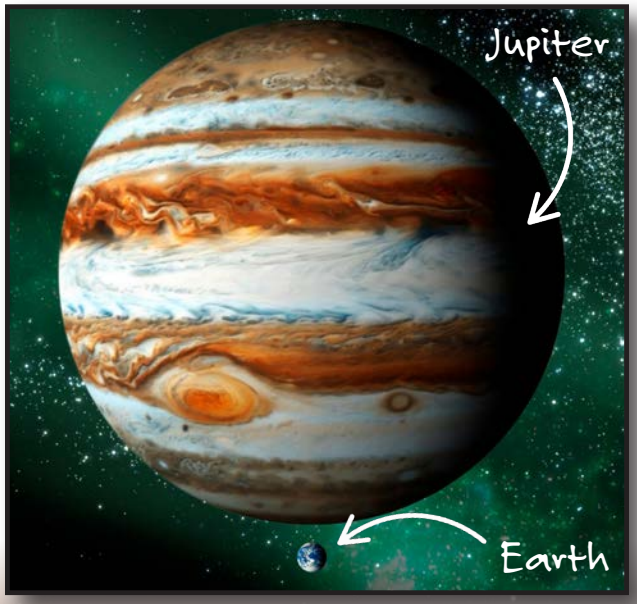


[6]Jupiter also has a faint ring system, though its rings are not nearly as bright as Saturn's. These rings are made of dust and small **particles**, likely from its moons or from comets that passed too close. While Jupiter's rings aren't easy to see, they add to the planet's uniqueness.

[7]The planet's powerful magnetic field is another feature that sets it apart. Its magnetic field is the strongest of any planet in the solar system, stretching millions of miles into space. This magnetic field traps charged particles, creating **radiation** belts that are dangerous for spacecraft and astronauts.

[8]Could there be life on Jupiter? Scientists think it's unlikely because of the planet's harsh conditions. Its crushing pressure, freezing temperatures, and lack of a solid surface make it an unlikely place for life as we know it. However, some scientists speculate that tiny, floating organisms could survive in the upper layers of the clouds, where conditions are less extreme.

[9]Jupiter is large and beautiful, but its importance goes beyond its size and beauty. It protects Earth and other planets by using gravity to pull in comets and asteroids that might otherwise hit them. This makes Jupiter a key player in keeping our solar system safe.



[10]This planet is incredible and filled with wonders. It is a world like no other, from its swirling storms and colorful clouds to its many moons and faint rings. It reminds us of how diverse and fascinating our solar system is. The next time you look at the night sky, think about this giant planet and its mysteries!

Activity **Name** _____ **Date** _____

MISSION ON JUPITER

You've just arrived on the giant planet Jupiter, the most massive world in our solar system. Your spaceship, *Stellar Voyager*, landed safely in the swirling clouds of this gas giant. As you step into your explorer pod, you first notice the colorful, stormy sky stretching in every direction. You're here to study Jupiter, learn its secrets, and meet its moons up close!

Your mission is to create a scrapbook to document everything you find. This scrapbook will be a keepsake to show your family and friends back on Earth. Let's make it unforgettable!

Mission Instructions: Create 5 scrapbook pages, each with a different theme.

- You can make the pages on paper using art supplies or digitally using a program like Canva, Google Slides, or PowerPoint.
- Each page must include pictures (drawn or printed), fun facts, and short descriptions of your discoveries.
- Be creative! Pretend you are writing as if you were really on Jupiter.

Use the themes below to guide your pages.

Scrapbook Themes

1. "Jupiter Through My Telescope"
   - What does Jupiter look like up close?
   - Describe its colors, clouds, and the Great Red Spot.
   - Include drawings or photos of Jupiter and its beautiful storms.
2. "The Wild Weather on Jupiter"
   - What is the weather like? Are there storms or strong winds?
   - Imagine being in the middle of the Great Red Spot—what do you see, hear, and feel?
   - Add symbols like storm clouds, lightning bolts, or swirling patterns.
3. "Moons of Jupiter"
   - What are Jupiter's moons like? Write about Io, Europa, Ganymede, and Callisto.
   - Imagine you're exploring one of the moons. What do you discover?
   - Include pictures or drawings of the moons and their unique features.

4. "Fun Things I Learned about Jupiter"
    - ○ List your favorite facts about Jupiter, like how fast it spins or its intense gravity.
    - ○ Create a "Top 5 Fun Facts" section.
    - ○ Decorate the page with stars, planets, or rockets.
5. "Jupiter: The Protector of the Solar System"
    - ○ How does Jupiter protect Earth from comets and asteroids?
    - ○ Imagine watching a comet get pulled toward Jupiter. What does it look like?
    - ○ Include pictures or drawings of Jupiter's gravity at work.

Explorer Checklist

- □ Each page has a title.
- □ I included at least three fun facts or descriptions on each page.
- □ My pages are colorful and creative.
- □ I used my imagination to describe what I might see or feel.

• • • Bonus Mission • • •

Write a short diary entry about your day on Jupiter. What did you do? What surprised you the most?

Jupiter Mission Captain's Log Date: _____

Practice

Name _____ **Date** _____

Instructions: Show what you know!

1) What person is this article written in? Do you think the author is a scientist? Explain. (Point of view)

2) What are the text features, and how do they help explain the content? (Text feature)

3) In paragraph 3, the author uses the word *raging*. What is the meaning of raging? (Vocabulary)

4) How does Jupiter protect Earth? Where did you find the information? (Comprehension)

5) Why are Jupiter's rings not as bright as Saturn's? (Comprehension)

6) What challenges would humans face if they tried to visit Jupiter? (Inference)

_____

_____

_____

7) Which moons did Galileo discover? Where did you find the information? (Close reading)

_____

_____

_____

8) Choose the word the author would say does ***not*** describe Jupiter. (Point of view)

a. gaseous b. surface-less c. harsh d. massive e. habitable

9) The author uses a simile in paragraph 2. What is it? (Figurative language)

_____

_____

_____

10) What is the theme or central idea of this article? (Theme or central idea)

_____

_____

_____

Practice

Name Answer Key **Date** _____

Instructions: Show what you know!

1) What person is this article written in? Do you think the author is a scientist? Explain. (Point of view)

The text is written in third-person point of view. (Answers will vary.) Yes, they share scientific information that most people would not know. |OR| No, the author is probably just interested in writing about Jupiter. Most of the information can be found simply by searching the internet.

2) What are the text features, and how do they help explain the content? (Text feature)

The text features in this article are numbered paragraphs, words in bold print, and graphics or images. Text features help readers find information quickly and comprehend the text more easily.

3) In paragraph 3, the author uses the word *raging*. What is the meaning of raging? (Vocabulary)

Raging is a way to describe an activity or movement that is violent and forceful. It represents something that is very intense.

4) How does Jupiter protect Earth? Where did you find the information? (Comprehension)

Jupiter protects Earth by using gravity to pull in comets and asteroids that might hit Earth. The information is in paragraph 9.

5) Why are Jupiter's rings not as bright as Saturn's? (Comprehension)

Jupiter's rings are not as bright as Saturn's because they are made of dust and small particles that are not very visible.

6) What challenges would humans face if they tried to visit Jupiter? (Inference)

Humans would have difficulty landing because the planet is gaseous. The storms would blow the ship off course. There would be powerful lightning and a super cold, strong magnetic field, as well as crushing pressure.

7) Which moons did Galileo discover? Where did you find the information? (Close reading)

Galileo discovered Io, Europa, Ganymede, and Callisto. Because Galileo discovered these moons, scientists call them the Galilean moons. The information is in paragraph 5.

8) Choose the word the author would say does ***not*** describe Jupiter. (Point of view)

a. gaseous b. surface-less c. harsh d. massive e. habitable

9) The author uses a simile in paragraph 2. What is it? (Figurative language)

"Jupiter is like a giant marble swirling with colorful paint." The author compares Jupiter to a giant marble swirling with colorful paint. It's a vivid and creative way to describe the planet's appearance.

10) What is the theme or central idea of this article? (Theme or central idea)

The central idea is that it's interesting and helpful to explore Jupiter, its fascinating features, and its importance to our solar system.