



## Lesson 8 - Reading and Listening for Information (*optional*)

### Background

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Students in each of the four Specialists Teams must be able to quickly understand information from the broadcasted messages and data transmissions from Mission Control. This lesson, although optional, will help reinforce the students' reading and listening skills in preparation for your Moon, Mars, and Beyond Mission.

There are countless stories to use for reading and listening comprehension. You may want to use your Language Arts or Reading classes to reinforce these skills. Several stories about planet and moon mythology are included in these lesson materials to relate your mission preparation to astronomy while providing students entertaining stories.

Mythological stories are present in every culture and depend on the characteristics of that culture. More violent cultures looked at the heavens and tended to see weapons, wars, and battles. Cultures rooted in nature tended to see animals, crops, and farmers.

Legends and myths became an integral part of oral and written tradition and have provided valuable historical insights to the culture.

### Teacher Notes and Hints

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- This lesson was designed for flexibility depending on the student reading and/or listening skills that need reinforced. Several choices are described for teacher implementation of this lesson.
- You can choose to read the myths to the students and have them answer questions relating to the stories, or you can have the students read the myths themselves.
- You may want to ask additional questions depending on the ability level of your students.
- You may want the students to keep track of how many questions they miss on each story; hopefully, they will see an improvement in their scores.
- If you are reading the stories aloud for listening practice, students will not be able to accurately spell the answers for the stories. Accept answers that are close or spelled phonetically correct.
- There are several articles or stories from which to choose. This allows you more flexibility in using the articles for either reading or listening practice. Some articles are more appropriate for 4<sup>th</sup> or 5<sup>th</sup> graders if you are using the articles for reading comprehension practice.

- Several of the stories are also presented as a Task Card Activity. This will help students become more familiar with task cards and will help them practice moving from one task card to another and stopping when they should stop until directed to move on.

## Skills and Objectives

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Students will be able to:

- Practice reading and listening skills
- Find out how important listening skills are to obtaining accurate information
- Relate reading and listening skills to their Moon, Mars, and Beyond Mission tasks

## Activity Overview

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Students in each of the four Specialist Teams must be able to quickly understand information from broadcasted messages and data transmissions from Mission Control. In this activity, students practice reading and listening skills to be better prepared for their Moon, Mars, and Beyond Mission work.

Students listen or read short stories about planet and moon mythology and then answer questions to test their reading or listening skills.

## Key Concepts

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1. Myths about the planets and the moons have been written by many different cultures.
2. The legends and stories about the planets and moons reflect the culture of the people who wrote the myths.
3. Reading and listening skills are important ways to get accurate information quickly.

## Materials

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- Teacher Worksheet (stories and short-answer questions)
- Paper (for student answers)

## Procedure

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### Prior to lesson

Decide how you will conduct the reading/listening lesson. If your class needs more practice in listening, you may decide to read all the stories aloud; you may also allow the students to read some of the stories themselves to practice reading comprehension skills.

If you are going to use the Task Card Activity, copy the Student Worksheets, cut the sheets into task cards and staple.

## **In class**

(Depending on teacher implementation of reading/listening activities)

Read the stories aloud (or distribute copies of the stories) to the students.

After reading the stories, read the short-answer questions aloud and have the students answer the questions on the answer sheet.

Discuss the story and questions in class and have the students keep track of how many they miss.

After each story, ask the students if their listening skills improved; discuss what they may have done differently if their skills did improve.



# Teacher Worksheet & Answer Key

## Mythology of the Planets and Moons

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### Jupiter

Jupiter has been recognized by several cultures. In both the Roman and Greek cultures, Jupiter was the ruler of the universe. He lived with the other gods on Mount Olympus and became ruler when he defeated his father, Saturn.

In the Norse culture, Jupiter was known as Thor, god of Thunder; Thursday is named after Thor.

Ancient astrologers noticed that Jupiter returns to each constellation every 12 years which happens to be the time it takes for one revolution around the Sun by Jupiter.

### Questions:

1. Who was Jupiter?  
*Ruler of the universe*
2. Where did Jupiter live?  
*Mount Olympus*
3. Who was Jupiter's father?  
*Saturn*
4. In the Norse culture, Jupiter was known as...  
*Thor*

### Saturn

Saturn became ruler of the universe by defeating his father, Uranus. He then worried that his children with his wife, Rhea, would turn against him so he began to swallow them as soon as they were born.

Rhea decided to hide Zeus from Saturn until he was grown. After Saturn was given a poison, he began to throw up the children who came out alive.

The children decided to war against Saturn until Zeus became the new ruler.

Saturday is named after Saturn.

### Questions:

1. Who was Saturn's father?  
*Uranus*

2. What did Saturn do to make sure his children did not turn against him?  
*He swallowed them as soon as they were born.*
3. What happened to Saturn's children?  
*He threw them up after he was given poison.*

### **Callisto (Jupiter moon; one of the Galilean moons)**

Callisto was a nymph (mythical young woman) who served Artemis. When Artemis got angry with her one day, Zeus changed her into a bear so she could run away.

But, Artemis was an excellent hunter and he killed poor Callisto with an arrow. (Some say the Great Bear (Ursa Major) constellation refers to Callisto).

#### **Questions:**

1. Who did Callisto serve?      *Artemis*
2. What did Zeus change her into?      *A Bear*
3. What happened to Callisto?      *She was killed by Artemis with an arrow.*

### **The Man in the Moon**

There once was an Indian village where a boy name "Running Antelope" lived with his grandmother. He went to visit a neighboring village that was ruled by a cruel chief. The chief was very fond of a beautiful young maiden called Little Hill. When Running Antelope saw Little Hill, he fell in love with her and they were married.

The chief was very angry with this and decided to get Little Hill for himself. Every night, when the people gathered in the center of the village for games, the chief would throw out beautiful and valuable pieces of coral and beads for the people to pick up. Running Antelope stayed at the games trying to pick up many beads for his new wife.

When Running Antelope got back to his lodge, Little Hill was gone. He went to the chief's lodge and, as he expected, he heard Little Hill's voice.

He ran into the chief's house and demanded that the chief return Little Hill, but the chief pulled out a knife and Running Antelope had to run for his life! The chief chased Running Antelope shooting poisoned arrows at him. Running Antelope was just about to be caught when he came upon the lake where he prayed to the Water Spirits to save him. The Water Spirits shot a great geyser of water into the sky which hurled Running Antelope all the way to the Moon. When the chief came upon this scene, he shut his eyes in fear.

So, Running Antelope was saved from the chief, but he was forever separated from his beloved wife. Running Antelope became the Man in the Moon.

That is not quite the end of the story.

One day, when the chief was out near the lake, he saw the reflected image of the Moon. To him, the image of Running Antelope was so vivid that he rushed in to fight him. The Water Spirits overwhelmed him with wave upon wave of water until he drowned.

### Questions:

1. At the beginning of the story, who did Running Antelope live with?  
*His grandmother*

2. Who did Running Antelope meet in the neighboring village?  
*Little Hill*

3. What helped to save Running Antelope from the chief's attack?  
*The Water Spirits*

4. What happened to Running Antelope?  
*He was saved from the chief, but lost Little Hill.*

5. How did Running Antelope become the Man in the Moon?  
*The Water Spirits shot water and Running Antelope all the way to the moon to save him from the cruel chief.*

### Apollo 13: A Successful Failure

As Captain James Lovell, Commander of the ill-starred Apollo 13 Mission described it:

“Fred [Haise] was still in the Lunar Module. Jack [Swigert] was back in the Command Module [CM] in the left-hand seat, and I was half-way in between, in the lower equipment bay, wrestling with TV wires and a camera, watching Fred come on down, when all three of us heard a rather large bang - just one bang.

“I guess it's kind of interesting to know what the feelings of the crew are when something like this happens. When you first hear this explosion or bang...you don't know what it is. We've had similar sounds in the spacecraft before that were for nothing...and then I looked out the window and saw this venting...my concern was increasing all the time. It went from 'I wonder what this is going to do to the landing' to 'I wonder if we can get back home again'...one actually at zero and the other one going down...it dawned on me that we were in serious trouble.”

The serious nature of the emergency was starkly evident to the crew and Mission Control. Lovell and his crew mates were more than 200,000 nautical miles out in space with a dead Service Module, including its main propulsion engine. The explosion had wiped out the CSM's main supply of life-sustaining oxygen and power. The CM's 10 hours of operating life had to be reserved for the approach to the earth's atmosphere because of the three components; it

alone had a heat shield which would allow the crew to re-enter the atmosphere and splashdown safely.

The crew's salvation rested with the Lunar Module (LM), the oddly-shaped spacecraft designed to separate from the CSM, land two astronauts gently on the moon, sustain them while there and then carry them back to the mother ship in lunar orbit. But that mother ship was a partial wreck, drifting in space, and the LM became the lifeboat.

What followed was an epic struggle of skilled and highly trained astronauts working in close coordination with the ground-based team at Mission Control against the hostile environment of space. For 86 hours and 57 minutes, more than three days, the struggle continued until the final victory came: Odyssey's trio of orange-striped parachutes dropped the spacecraft into the gently rolling Pacific Ocean 3.5 nautical miles from the prime recovery ship, the carrier Iwo Jima.

### Questions:

1. What was the name of the mission described in the article?

*Apollo 13*

2. Name the astronauts aboard this flight.

*Jim Lovell, Fred Haise, and Jack Swigert*

3. What had gone wrong with the ship?

*An explosion had torn through the Command Module and destroyed the main supply of oxygen and power.*

4. What part of the ship became the astronauts' "lifeboat?"

*The Lunar Module*

5. How long were the astronauts up in space waiting and working to find a way to make it back to Earth?

*More than three days*

6. What ship picked them up in the Pacific Ocean?

*The Iwo Jima*

### Man on the Moon!!

In 1961, President John F. Kennedy gave a speech. He said the U.S. should work quickly and meet a goal. The goal was to send people to the Moon and back.

The U.S. did meet the goal. It only took eight years. One day in July, Apollo 11 launched towards the Moon. It had three astronauts on it. They were Neal Armstrong, Edwin "Buzz" Aldrin, and Michael Collins.

A few days later, Apollo 11 began to orbit around the Moon. Then, Armstrong and Aldrin took the Lunar Module to the Moon. They left Collins in orbit. What did they say when they landed on the moon? "The Eagle has landed." Eagle was the name of the Lunar Module.

On July 20, 1969, Neil Armstrong put his left foot on the rocky Moon. It was the first human footprint on the Moon. They had taken TV cameras with them so people all over the world watched when it happened. More people watched this Moon landing than any other show on TV.

The two astronauts walked on the Moon. They picked up rocks and dirt to bring back to Earth. The astronauts had much work to do. Then, the Eagle went back to meet astronaut Collins. He was in the Command Module working.

Apollo 11 splashed down in the Pacific Ocean on July 24, 1969. The astronauts were safe at home.

### **Questions:**

1. What was the name of the first mission to the Moon?  
*Apollo 11*
2. Name the astronauts on board for this mission.  
*Neil Armstrong, Buzz Aldrin, Michael Collins*
3. Who was the first man on the Moon?  
*Neil Armstrong*
4. What did he say when he landed on the Moon?  
*"The Eagle has landed."*
5. What was the Eagle?  
*The name of the Lunar Module*
6. Where was the third astronaut while the other two were on the Moon?  
*He was in the Command Module orbiting the Moon.*

## **How Much Do You Know About Our Space Shuttle?**

### **Enterprise**

Enterprise, our first Space Shuttle Orbiter, was to be named Constitution, in honor of our Constitution's Bicentennial. At the same time, Star Trek fans started a write-in campaign for the ship to be named the Enterprise after the flag ship of that TV series.

The shuttle flew five missions, but never went into space. It was used to test the Approach and Landing Test program at NASA's Dryden Flight Research Facility at Edwards Air Force Base. It was retired after 8 years. It is now housed in a flight museum outside Washington, D.C. People can tour the shuttle from the outside only; NASA has taken everything out of the aircraft to use it later.

### **Columbia**

Columbia was the oldest orbiter in the Shuttle fleet. She was named after the Massachusetts ship captained by Robert Gray. Gray maneuvered the Columbia

past a dangerous sandbar at the mouth of a river at the Washington-Oregon border with Canada. The river was later named after this ship.

“Columbia” is considered to be the feminine personification of the United States. It is derived from the famous explorer, Christopher Columbus.

The Shuttle Columbia was the first space shuttle to fly into Earth's orbit in 1981.

On February 1, 2003, the Columbia and crew were lost as a failure of damaged heat shields caused external damage to the craft upon re-entry. The Columbia was scheduled to touchdown at 9:16 a.m. EST; communication was lost at 9:00 a.m.

### Questions:

1. What was the Space Shuttle Enterprise originally going to be named?  
*Constitution*
2. How did it then get the name Enterprise?  
*Star Trek fans started a write-in campaign to the White House to lobby for the name.*
3. The Enterprise was a space shuttle orbiter, but it never went into space. What did it do?  
*It was used in the Approach and Landing Test program.*
4. Where is the Enterprise now?  
*In a flight museum*
5. How did the Columbia get her name?  
*From the Massachusetts ship that explored the Washington-Oregon border*
6. What was named after the ship, Columbia?  
*The Columbia River*
7. What happened to the Columbia? When did it happen?  
*Damaged head shields caused extensive damage to the spacecraft; it was lost on February 3, 2003*

### Discovery

The Discovery was NASA's third orbiter. It was named after one of two ships used by British explorer James Cook. His exploration led to the discovery of the Hawaiian Islands. During the American Revolutionary War, Benjamin Franklin made a request for safe conquest of the Discovery because of the scientific importance of its research. (Another of Cook's ships, the Endeavour, has become NASA's newest shuttle orbiter.)

Many other historic ships have been called Discovery. One Discovery was used by Henry Hudson to explore the Hudson Bay in Canada, another one was used on an Antarctic expedition.

Space Shuttle orbiters also have number designations. Discovery is commonly referred to as OV-103, meaning Orbiter Vehicle-103.

### **Atlantis**

The Atlantis is the fourth orbiter and was named after the primary research vessel for the Woods Hole Oceanographic Institute in Massachusetts from 1930 to 1966. This vessel was the first U.S. vessel to be used for oceanographic research.

The spaceship Atlantis has flown several important voyages, including the Galileo Planetary Explorer Mission in 1989 and the deployment of the Gamma Ray Observatory in 1991.

### **Challenger**

The Challenger spacecraft was the second NASA orbiter and was named after an American Naval research vessel that sailed in both the Atlantic and Pacific during the 1870's. The Challenger had flown nine successful Space Shuttle missions when the Challenger and its seven-member crew were lost 73 seconds after launch when an O-ring on one of the solid rocket boosters failed. The liquid fuel in the main tank ignited, causing a fire and explosion.

### **Questions:**

1. How did the Discovery get her name?

*It was named after one of two ships used by British explorer James Cook who later discovered the Hawaiian Islands.*

2. Who made a request for safe conquest of the sailing ship, the Discovery, during the American Revolution?

*Benjamin Franklin*

3. Why did he make such a request?

*Because of the importance of its scientific research*

4. What is OV-103?

*The Discovery's "number" name; Orbiter Vehicle-103*

5. How did the Atlantis get its name?

*It was named after the primary research vessel for Woods Hole Oceanographic Institute.*

6. Name two important missions that Atlantis has flown.

*The Galileo Planetary Explorer Mission & the Gamma Ray Observatory*

7. How did the Challenger space shuttle get its name?

*From an American research vessel*

8. How many successful missions had the Challenger flown before it crashed?

*Nine*

9. What caused the Challenger crash?

*Defective O-rings on the solid rocket boosters caused the liquid fuel in the main tank to ignite, causing a fire and explosion.*