

JANUARY	<i>Makauaiton</i>
FEBRUARY	<i>Mahigugmaon</i>
MARCH	<i>Matinabungan</i>
APRIL	<i>Matinahuron</i>
MAY	<i>Mahapsay og Malinpyog</i>
JUNE	<i>Maabtik og Musunod sa Oksaklong Oras</i>
JULY	<i>Maantigo og Maabilidad</i>
AUGUST	<i>Maginhunahunaon para sa Uban</i>
SEPTEMBER	<i>Madaginoton</i>
OCTOBER	<i>Matinud-anon</i>
NOVEMBER	<i>Masaligan</i>
DECEMBER	<i>Maalampon</i>



Republic of the Philippines  
 Department of Education  
 Regional Office IX, Zamboanga Peninsula



**6**



Zest for Progress

Zeal of

# Science

Quarter 4 - Module 6

Compare the Planets of the Solar System



Name of Learner: \_\_\_\_\_

Grade & Section: \_\_\_\_\_

Name of School: \_\_\_\_\_



## What I Need to Know

In this module, you will be able to do the following:

Identify and describe the outer planets of the solar system. [S6ES-IVg-h6](#)

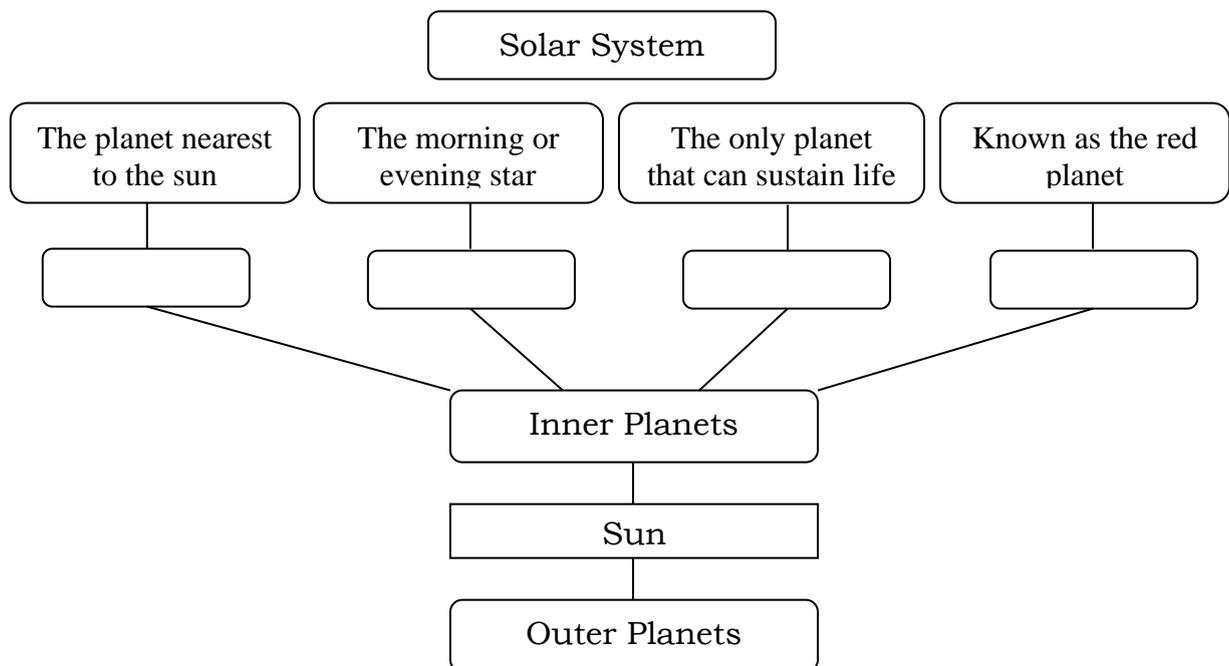
Compare and contrast the outer planets according to their features or characteristics. [S6ES-IVg-h6](#)



## What's In

### Activity 1

Direction: Complete the graph with the correct word.





## What's New

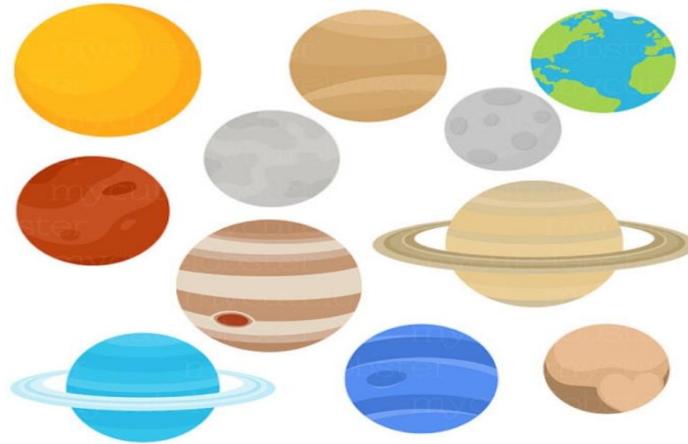
### Activity 2

Direction: Use your knowledge of the Solar System to solve each riddle.

1. With over 67 moons, you might say I have a lot  
Look with a telescope to see my big, red spot  
The spot is a wind, storm, swirling around  
High in the night sky is where I can be found  
What planet am I? \_\_\_\_\_
2. I am the sixth planet from the sun  
Also considered a gas giant  
I have a largest moon called Titan  
The only planet visible to the naked eye of human  
What planet am I? \_\_\_\_\_
3. Mostly made up of frozen water, ammonia and methane  
My atmosphere comprises helium and hydrogen  
These gases make my appearance blue-green  
Considered ice giant since then  
What planet am I? \_\_\_\_\_
4. I was discovered using mathematical calculation  
I have a moon called Triton  
Known as the giant blue planet  
And has no solid surface in it  
What planet am I? \_\_\_\_\_



## What is It



## The Solar System

### Jovial Planets

The outer planets such as Jupiter, Saturn, Uranus and Neptune are called Jovian planets because, like Jupiter, these planets are large and gaseous. (Jove is another name for the Roman god Jupiter.)

### Jupiter

Jupiter is the biggest planet system. It is bigger and heavier than all other planets combined. It has an equatorial diameter of 142 984km. Its average distance from Sun is 774 million km.

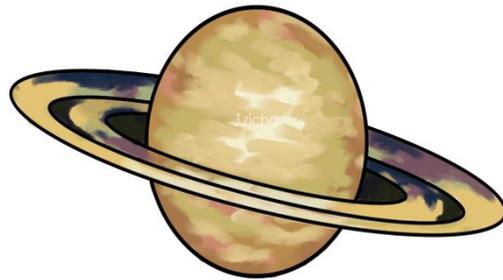
Jupiter is covered with thick clouds. There is no solid ground on Jupiter. It is called a gas giant planet which is made up mostly of hydrogen and helium rather than rocks and metal as Earth. The average surface temperature at the top of its clouds can reach about  $-149^{\circ}\text{C}$ .



Jupiter takes 12 Earth years to complete one revolution and 10 hours to complete its rotation. It has a huge storm in its atmosphere called the Great Red Spot. Jupiter has 50 moons (with an additional of 17 moons recently discovered and currently being confirmed). One of its moons, Ganymede, is the largest in the solar system.

### Saturn

Saturn is the sixth planet from the sun, which has an average distance of 1.4 billion km from it and is the farthest planet visible to the naked eye. Saturn has an equatorial diameter of 120536 km. It takes 10.7 Earth hours for Saturn to complete a rotation and 29 Earth years to complete a revolution.



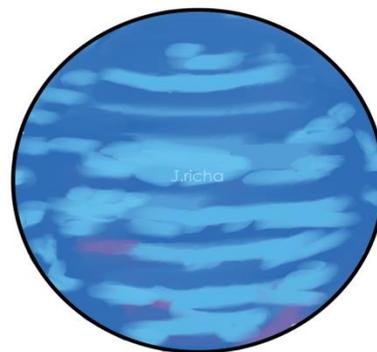
Saturn is a cold planet. The temperature at the top of Saturn's clouds can reach about  $-176^{\circ}\text{C}$ . Like Jupiter, Saturn is also a gas giant without a solid surface. It is composed mostly of hydrogen and helium.

There are 53 known moons surrounding Saturn. Its largest moon is Titan. It is the second largest moon in the solar system.

## **Uranus**

Uranus is the seventh planet of the solar system and is the first planet discovered by means of a telescope. Its average distance from the sun is 2.99 billion km.

This planet is considered an ice giant because it is mostly made up of frozen water, methane and ammonia. Its atmosphere is mostly hydrogen and helium. Its average surface temperature can reach  $-215^{\circ}\text{C}$ .

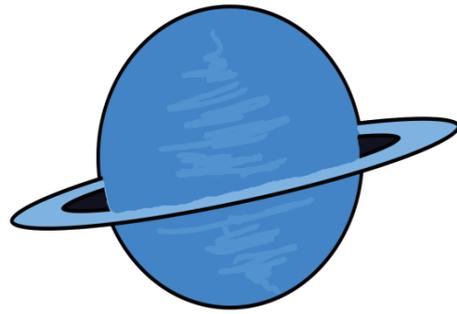


Uranus is the only planet that rotates on its side. It takes 17 hours to complete its rotation and 84 Earth years to complete its revolution. Its equatorial diameter is 51 118 km.

Uranus has rings, too. There are 11 rings around it. The rings are dark, narrow, and widely spaced. The planet also has 27 moons, the largest is called Titania.

## **Neptune**

Neptune is the eighth planet from the sun and is the first planet to be discovered using mathematical calculations before being confirmed by a telescope. Its average distance from the sun is 4.5 billion km. Neptune's rotation lasts about 16 Earth hours. It completes one revolution around the sun every 165 Earth days.



This planet also has no solid surface and is a gas giant. Its surface temperature is  $-214^{\circ}\text{C}$ . Its equatorial diameter is 49 532 km. Neptune and Uranus are called twin planets because they have about the same size and mass. They also both look blue green because of methane gas in their atmosphere.

Neptune has six dark rings made up of very fine particles. It has 13 moons, the largest of which is called Triton.



### What's More

#### Activity 3

Fill in the table to compare and contrast the outer planets according to their features or characteristics.

Features	Jupiter	Saturn	Uranus	Neptune
rings				
moons				
distance from the sun				
surface temperature				
equatorial diameter				
ground				



### What I Have Learned

### Activity 4

Supply the missing word to complete the sentence. Choose your answer from the box.

rings	27	hydrogen	biggest	helium	-176°C
Ganymede	2.9 billion km.	telescope	13	red spot	

1. Saturn is a cold planet. The temperature at the top of the Saturn's clouds is \_\_\_\_\_.
2. The atmosphere of outer planets is mostly \_\_\_\_\_ and \_\_\_\_\_.
3. Jupiter has a huge storm in its atmosphere called as great \_\_\_\_\_.
4. The planet Uranus has \_\_\_\_\_ moon, the largest of which is called Titania.
5. The average distance of Uranus from the Sun is \_\_\_\_\_.
6. Neptune has six dark \_\_\_\_\_ made up of very fine particles.
7. Jupiter is the \_\_\_\_\_ planet in the solar system, bigger and heavier than all other planets.
8. Neptune has \_\_\_\_\_ moons, the largest of which is called Triton.
9. One of Jupiter's moons is \_\_\_\_\_, the largest moon in the solar system.
10. Uranus is the first planet discovered by means of a \_\_\_\_\_.



### Activity 5

Read and analyze the question. Write your answer in the space provided.

1. Why are Jupiter, Saturn, Uranus and Neptune called gas giants?

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2. Based on what you know about outer planets, do you think these planets can sustain life just like Earth? Support your answer.

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3. Why is Neptune called Uranus' twin planet?

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## Activity 6

### A. Encircle the letter of the correct answer

1. Which planet has an equatorial diameter of 120 536 km.?
  - a. Neptune
  - b. Uranus
  - c. Jupiter
  - d. Saturn
  
2. Which describe the planet Uranus?
  - a. The seventh planet in the solar system.
  - b. The sixth planet in the solar system.
  - c. The only planet that rotates on its side.
  - d. The planet that has 13 moons.
  
3. What is the second largest moon of the solar system and Saturn's largest moon?
  - a. Titan
  - b. Triton
  - c. Titania
  - d. Ganymede
  
4. What is the other term for outer planets?
  - a. Terrestrial
  - b. Jovian
  - c. Titania
  - d. Triton
  
5. Which planet has six dark rings made up of tiny particles?
  - a. Jupiter
  - b. Saturn
  - c. Uranus
  - d. Neptune

### B. Write the correct word/s in the blank to complete the sentence.

1. \_\_\_\_\_ is the biggest planet in the solar system.
2. The outer planets such as Jupiter, Saturn, Uranus, and Neptune are called \_\_\_\_\_.
3. Saturn is the \_\_\_\_\_ planet from the sun.
4. Neptune has 13 moons, the largest of which is called \_\_\_\_\_.
5. \_\_\_\_\_ is the first planet discovered by means of telescope.

Reference: **Science Beyond Borders Textbook 6**

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Publish by **Vibal Group, Inc.**

**Answer Key**

**What's In**

**Activity 1**

Mercury Venus Earth Mars

**What's New**

**Activity 2**

Jupiter

Saturn

Uranus

Neptune

**What's More**

**Activity 3**

Features	Jupiter	Saturn	Uranus	Neptune
rings	1	many	11	6
moons	67	53	27	13
distance from the sun	774 million km.	1.4 billion km.	2.9 billion km.	4.5 billion km.
surface temperature	-149°C	-176°C	-215°C	-214°C
equatorial diameter	142 984 km.	120536 km.	51 118 km.	49 532 km.
ground	No solid ground	No solid ground	No solid ground	No solid ground

**What I have Learned**

**Activity 4**

-1. 176°C

2. hydrogen, helium

3. red spot

4. 27

5. 2.9 billion km.

6. rings

7. biggest

8. 13

9. Gamynede

10. telescope

**What I Can Do**

**Activity 5**

Answers may vary

**Assessment**

**Activity 6**

**B.**

1. Jupiter

2. Jovian Planets/outer planets

3. sixth

4. Triton

5. Uranus

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## Region IX: Zamboanga Peninsula Hymn – Our Eden Land

Here the trees and flowers bloom  
Here the breezes gently Blow,  
Here the birds sing Merrily,  
The liberty forever Stays,

Here the Badjaos roam the seas  
Here the Samals live in peace  
Here the Tausogs thrive so free  
With the Yakans in unity

Gallant men And Ladies fair  
Linger with love and care  
Golden beams of sunrise and sunset  
Are visions you'll never forget  
Oh! That's Region IX

Hardworking people Abound,  
Every valleys and Dale  
Zamboanguenos, Tagalogs, Bicolanos,

Cebuanos, Ilocanos, Subanons, Bohalanos, Ilongos  
All of them are proud and true  
Region IX our Eden Land

Region IX  
Our...  
Eden...  
Land...

## I Am a Filipino, by Carlos P. Romulo

I am a Filipino—inheritor of a glorious past, hostage to the uncertain future. As such I must prove equal to a two-fold task—the task of meeting my responsibility to the past, and the task of performing my obligation to the future.

I sprung from a hardy race, child many generations removed of ancient Malayan pioneers. Across the centuries the memory comes rushing back to me: of brown-skinned men putting out to sea in ships that were as frail as their hearts were stout. Over the sea I see them come, borne upon the billowing wave and the whistling wind, carried upon the mighty swell of hope—hope in the free abundance of new land that was to be their home and their children's forever.

I am a Filipino. In my blood runs the immortal seed of heroes—seed that flowered down the centuries in deeds of courage and defiance. In my veins yet pulses the same hot blood that sent Lapulapu to battle against the first invader of this land, that nerved Lakandula in the combat against the alien foe, that drove Diego Silang and Dagohoy into rebellion against the foreign oppressor.

The seed I bear within me is an immortal seed. It is the mark of my manhood, the symbol of dignity as a human being. Like the seeds that were once buried in the tomb of Tutankhamen many thousand years ago, it shall grow and flower and bear fruit again. It is the insignia of my race, and my generation is but a stage in the unending search of my people for freedom and happiness.

I am a Filipino, child of the marriage of the East and the West. The East, with its languor and mysticism, its passivity and endurance, was my mother, and my sire was the West that came thundering across the seas with the Cross and Sword and the Machine. I am of the East, an eager participant in its spirit, and in its struggles for liberation from the imperialist yoke. But I also know that the East must awake from its centuried sleep, shake off the lethargy that has bound his limbs, and start moving where destiny awaits.

I am a Filipino, and this is my inheritance. What pledge shall I give that I may prove worthy of my inheritance? I shall give the pledge that has come ringing down the corridors of the centuries, and it shall be compounded of the joyous cries of my Malayan forebears when first they saw the contours of this land loom before their eyes, of the battle cries that have resounded in every field of combat from Mactan to Tirad Pass, of the voices of my people when they sing:

“I am a Filipino born to freedom, and I shall not rest until freedom shall have been added unto my inheritance—for myself and my children and my children's children—forever.”