

3rd Grade: EARTH

Planets

FOCUS: Intervention

Objective 3.8D: Identify the planets in our solar system and their position in relation to the Sun

Direct Instruction	Tips for the Teacher
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Understanding Key Concepts

- **Review these with the students in small groups or one-to-one.**
 - Students should be familiar with the terms planets, asteroids, comets and moons
 - The order of the planets from the Sun is Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.
 - The solar system's inner planets have similar characteristics.
 - The solar system's outer planets have similar characteristics.
 - The inner planets are smaller and closer to the Sun than the outer planets

- **Review Teacher Background for additional clarification**
Objects in the sky.

- **Essential questions to ask for student understanding.**
 - What composes our solar system?
 - Besides the eight planets, what else is included in our solar system?
 - Are all the planets the same?
 - Do some of the planets have similarities?
 - Do all planets rotate at the same speed when considering their size?
 - What is the boundary between the inner and the outer planets?
 - Do all of the planets have moons?
 - Do all of the planets have rings?
 - Are all of the planets about the same size and composition?

Possible Hang Ups and Tips (Why do students have problems with this topic?)

▪ Tips

- Students need to know the *order* of the planets from the Sun.
- The inner planets (Mercury, Venus, Earth, Mars) have similar characteristics such as size and rocky surfaces. They rotate slowly for their size and several have moons.
- The outer planets (Jupiter, Saturn, Uranus, Neptune) have similar characteristics. They are relatively large, are gaseous spheres and rotate very quickly. All have rings and have many moons.
- Pluto is now considered a "dwarf planet".
- It helps students to memorize a mnemonic to learn the order of the planets. (For example, *My Very Educated Mother Just Served Us Nachos.*)

▪ Focus on the verb

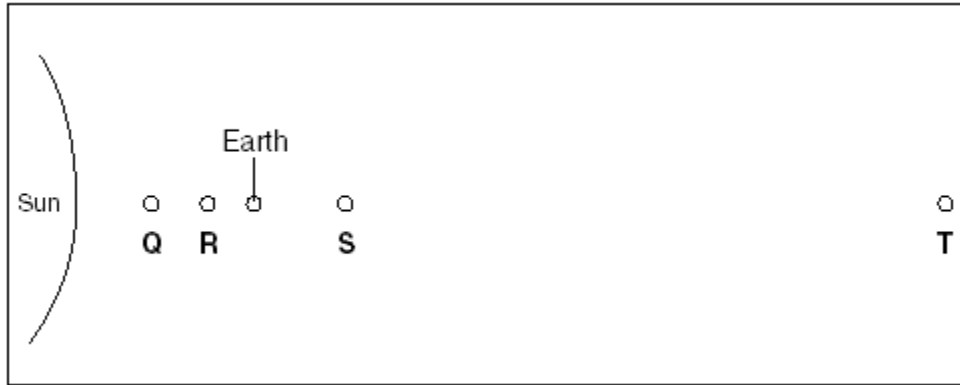
- Emphasize the verb used in the TEKS objective: "*identify*". The key here is for the students to "*identify*" the planets in order, and to compare the differences. For example, a model of the inner planets could be used to compare distance from the Sun. Students need to know if the model is an accurate representation.

▪ Additional points of consideration

- The solar system consists of the eight planets, dwarf planets, asteroids, comets and moons of the planets.
- All of the objects in the solar system orbit our Sun.
- Patterns help to understand the solar system:

	Inner planets	Outer Planets
Size	Relatively small	Relatively large
Composition	Rocky	Gaseous
Rotation	Slow for size	Fast for size
Moons	None, 1 or 2	Many moons
Rings	No known rings	Many rings
Sun's Role	Closer to Sun; Sun provides light and heat energy	Sun is small light; does not provide warmth

Released TAKS Test Example Spring 2003 Example



- F Q
- G R
- H S
- J T

26 Which of these best represents Mars?		
Right Answer	H. "S"	The 4 th planet from the Sun is Mars.
Wrong Answers	F.	These planets are not the 4 th from the Sun, but 1 st , 2 nd , and 5 th respectively. Earth is also a planet so is included as the 3 rd planet.
	G.	
	J.	

- **KEY POINT:** Students need to "identify" the planets in our solar system and know their order from the Sun.

Materials

- Concept Activity ***Planetary Hunt*** (see attached sheet)
- Concept Assessment Quiz (see attached sheet)
- Scissors

Concept Activity

- **Directions:**
 1. Using the descriptions of the planets on the attachment, Planetary Hunt, fill in the blanks so that all planets are named. Be sure to include each planet's place from the Sun.
 2. In the table below the planet descriptions, fill in characteristics of the planets by comparing the inner and outer planets.
- **Guiding questions:**
 1. What do you know about the planet Earth? What is unique about it? Find its description and fill in the blanks.
 2. Which are the largest planets? Find the description of the four largest planets and fill in all the blanks.
 3. What common characteristics make up the larger planets? Do you have any clues in the descriptions?
 4. What common characteristics make up the smaller planets? Do you have any clues in the descriptions?

I. Vocabulary Matching

- _____ These are large, gaseous planets with rings and many moons
- _____ First planet from the Sun
- _____ Fourth planet from the Sun
- _____ Asteroid Belt
- _____ This is unique to the planet Earth

<p><i>Word Bank:</i></p> <p>A. Outer planets</p> <p>B. Can support life</p> <p>C. Boundary between inner and outer planets</p> <p>D. Mercury</p> <p>E. Mars</p>

II. Identification: What Planet is it?

1. This is the smallest planet in the solar system. _____
2. This planet looks like a red star in the sky and space probes have landed here.

3. This planet is as big as 1400 Earths, making it the largest planet. It has a large red storm on part of it.

4. This planet is similar in size to Earth. It is the brightest planet and second from the Sun.

5. These four planets are called the inner planets:

6. One of the outer planets, this planet is the second largest planet and is sixth from the sun. It has distinctive rings.

7. This is the fourth largest planet and farthest away from the sun. _____
8. These four are the outer planets:

I. Vocabulary Matching

- ___A___ These are large, gaseous planets with rings and many moons
- ___D___ First planet from the Sun
- ___E___ Fourth planet from the Sun
- ___C___ Asteroid Belt
- ___B___ This is unique to the planet Earth

<p><i>Word Bank:</i></p> <p>A. Outer planets</p> <p>B. Can support life</p> <p>C. Boundary between inner and outer planets</p> <p>D. Mercury</p> <p>E. Mars</p>

II. Identification: What Planet is it?

1. This is the smallest planet in the solar system. ___Mercury___
2. This planet looks like a red star in the sky and space probes have landed here.
___Mars___
3. This planet is as big as 1400 Earths, making it the largest planet. It has a large red storm on part of it.
___Jupiter___
4. This planet is similar in size to Earth. It is the brightest planet and second from the Sun.
___Venus___
5. These four planets are called the inner planets:
___Mercury, Venus, Earth, and Mars___
6. One of the outer planets, this planet is the second largest planet and is sixth from the sun. It has distinctive rings.
___Saturn___
7. This is the fourth largest planet and farthest away from the sun. ___Neptune___
8. These four are the outer planets:
___Jupiter, Saturn, Uranus, and Neptune___

Clues for Planetary Hunt

1. Famous for distinct rings
Lots of moons
Second largest planet
My name is _____
I am _____ from the Sun
2. Polar ice caps
Probes have landed here
Looks like red star in sky
My name is _____
I am _____ from the Sun
3. Named for Goddess of love
About same size as Earth
Brightest planet
My name is _____
I am _____ from the Sun
4. Fourth largest planet
Named for God of Sea
I have at least 8 moons
My name is _____
I am _____ from the Sun
5. Lots of moons
3rd largest planet
I have rings which are not as thick as those of my neighboring planet
My name is _____
I am _____ from the Sun
6. Smallest of the planets
Little bigger than Earth's moon
No moons
My name is _____
I am _____ from the Sun
7. Supports life
Atmosphere mostly nitrogen
About 2/3 of surface covered by water
My name is _____
I am _____ from the Sun
8. Largest of the planets
Has a large red spot scientists think is a storm
Covered by bands of thick clouds
My name is _____
I am _____ from the Sun

Inner Planet Characteristics

Outer Planet Characteristics
