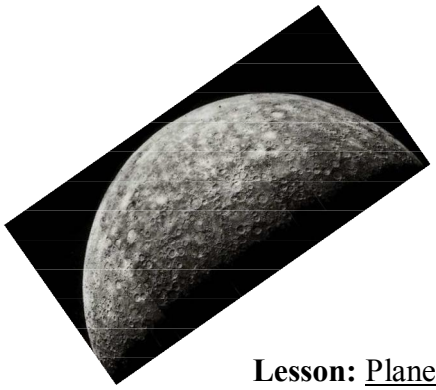
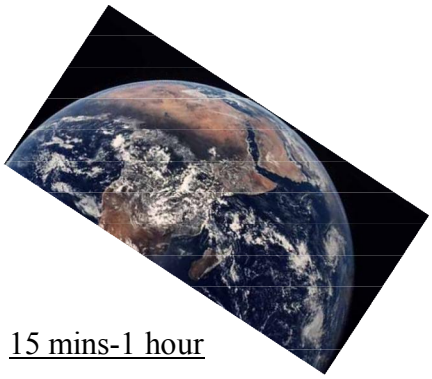




MANCHESTER COLLEGE
Education Department

LESSON PLAN by: Daidra Jagger

Lesson: Planets in our Solar System **Length:** 15 mins-1 hour

Age or Grade Intended: 6th Grade

Academic Standards:

6.3.1 Compare and contrast the size, composition, and surface features of the planets that comprise the solar system, as well as the objects orbiting them. Explain that the planets, except Pluto, move around the sun in nearly circular orbits.

Performance Objective(s):

♥ Given a class discussion on the eight planets, the students will draw a picture that illustrates what they already know about the orbit of the planets around the sun in our solar system with 100% accuracy.

♥ Given a class discussion on the eight planets, the students will list the planets in the correct order from the sun with 100% accuracy in groups on a worksheet.

♥ Given a class discussion on the eight planets, the students will fill in the name of the missing planets in order of their size with 85% accuracy.

Advanced Preparation by Teacher:

- Make the different worksheets that the students will use.
- Make up the different sentence strips.
- Make up the Myth and Legend sheets
- Make up another set of strips that have the size in miles on them for each planet.
- Take "The Book of Planets" by Clint Twist to reference in class
- Go through the book being used and make sure that Pluto is blocked

Procedure:

Introduction/Motivation: To begin this lesson I will show the students different myths and legends about each planet. After reading each myth and legend, we will have five minutes as a class to match them to the correct planet. Once we are finished with the myths and legends the student's will have five minutes to draw a picture that illustrates what they already know about the orbit of the planets around the sun in our solar system.

Questions: How many planets did you include? Could you name the planets? Do you think you placed the planets in the right order from the sun? Are the orbits of the planets all the same distance apart?

Step-by-Step Plan:

1. First you will select 10 students to represent the major bodies in the solar system. Each one will get a labeled sentence strip to hold.
2. Select a starting place at one edge of the playground (go outside if weather permits) or at the end of a very long hall.
3. Have sign holding students follow these instructions for constructing the model solar system.
    a) The "sun" stands at one end of the area.
    b) Mercury takes 4 small steps from the sun.
    c) Venus takes 3 small steps outward from Mercury.
    d) Earth takes 2 small steps beyond Venus.
    e) Mars takes 5 small steps beyond Earth.
    f) Jupiter takes 34 small steps beyond Mars.
    g) Saturn takes 40 small steps beyond Jupiter.
    h) Uranus takes 90 small steps beyond Saturn.
    i) Neptune takes 100 small steps beyond Uranus.
4. Tell the class that the positions of the students with the signs represent the average distance between the planets' orbits.
5. Have all the holders remain in their places and hold up their signs.
6. The student's should observe the spacing and think about the following questions: Which planets' orbits are closest together? Which ones are really spread out? Are the planets' orbits spaced at equal distances from the sun?
7. After discussing the questions above we will move into talking about the size of the individual planets.
8. Select 10 different students to represent the different sizes of the 8 planets.
9. Have the student's stand to one side of the room/hallway. After I call out a planets name then the student with that planet will come forward.
10. Once that student has come forward they will tell the group what the size of their planet is in miles. After telling the group what the size of their planet is, they will attempt to make a number line.
11. This number line will be based on the size of their planets. They are trying to put them in the correct size order before knowing exactly where each planet falls.

Closure: Discuss the questions above. Next go over the following ideas:

- The first four planets do not have much space between their orbits. These planets are called the inner planets. They are MERCURY, VENUS, EARTH, & MARS.
- The rest of the planets have rather large distances between their orbits. These planets are known as the outer planets. They are JUPITER, SATURN, URANUS, & NEPTUNE.
- The planets aren't usually lined up as in our model. This model doesn't show the actual positions of the planets, but the relative spacing of their orbits.

In the next class period we are going to be building mobiles of our solar system. Don't forget to bring in your hanger.

Assessment: Before beginning the lesson students will draw a picture that shows what they already know about the orbits of the planets around the sun in our solar system. This will just be recorded as a completion grade. After the lesson, students will be given two worksheets that they will work on in groups of three. After everyone is finished with their worksheets we will go over them in class. I will continue to work on the planets during free time with students who don't meet the goal stated in the above objectives. I will use different methods of teaching the planets

in order help those students. This may mean we make mobiles, use different websites, or let the students come up with an idea that they think will help. About a week after this lesson (after we have talked more about the planets) the students will be tested using the same worksheets done in class.

Adaptations/Enrichment: One adaptation that has to be made is I must wear a microphone because one of the students has trouble hearing and wears headphones. I also must make sure that I speak clearly. For the gifted and talented students they will take this lesson a step further by making a brochure for a planet other then Earth. They will get to see an example, but then must make one of their own.

Self-Reflection: Refer to the back of assignment break down sheet.

Gardner's Multiple Intelligences being used
Logical Mathematical, Visual/Spatial, Bodily/Kinesthetic, Intrapersonal, Interpersonal, and Verbal/Linguistic

Bloom's Taxonomy being used
Knowledge, Comprehension, Synthesis, and Application

References: http://www.nineplanets.org/, Our Activities for Teaching Science as Inquiry book, and "The Book of Planets" by Clint Twist

Practice Quiz: Order from the Sun

Name: _____ Date: _____

1st Planet from the sun

2nd Planet from the sun

3rd Planet from the sun

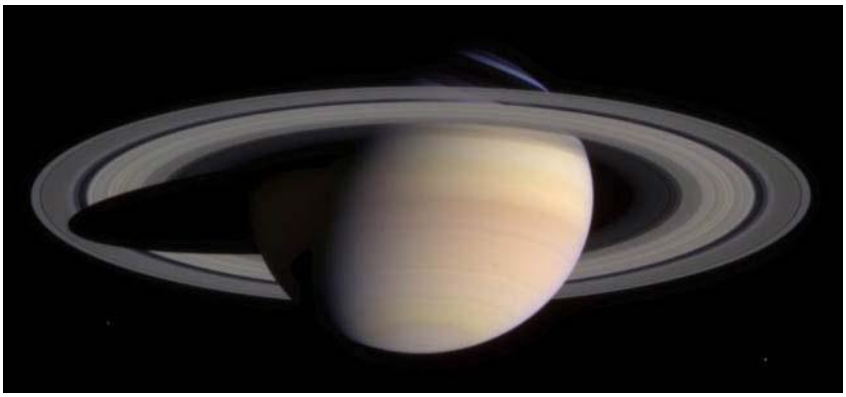
4th Planet from the sun

5th Planet from the sun

6th Planet from the sun

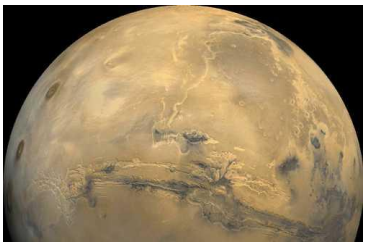
7th Planet from the sun

8th Planet from the sun



Practice Quiz: Planet Size

Name: _____ Date: _____



SIZE

3,032 miles- _____

4,222 miles- _____

7,520 miles- _____

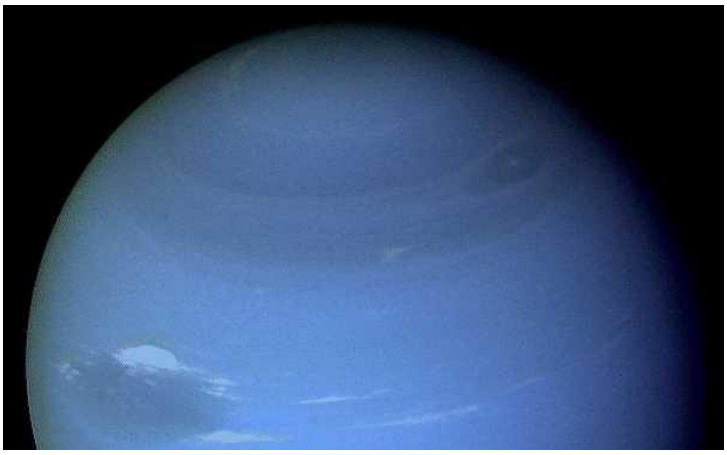
7,926 miles- Earth

30,775 miles- _____

31,763 miles- _____

74,898 miles- Saturn

88,846 miles- _____



SENTENCE STRIPS

Jupiter Takes 34 small steps beyond Mars

Venus Takes 3 small steps outward from Mercury

Neptune Takes 100 small steps beyond Uranus

Uranus Takes 90 small steps beyond Saturn

Saturn Takes 40 small steps beyond Jupiter

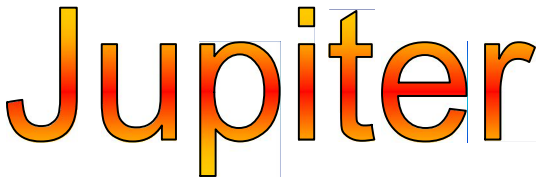
Sun Stands at one end of the area

Mars Takes 5 small steps beyond Earth

Earth Takes 2 small steps beyond Venus

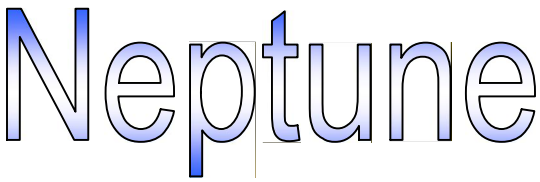
Mercury Takes 4 small steps from the sun

Size Strips



88,846 miles

7,520 miles



30,775 miles

31,763 miles

74,898 miles

4,222 miles

7,926 miles

3,032 miles

Myths and Legends: Which Planet Is It?

1. This planet seems to move very quickly from one side of the Sun to the other, so the ancient Greeks and Romans regarded the planet as a messenger of the gods. The name of this planet was the messenger's Roman name, while the Greeks knew him as Hermes.

2. This planet was the ancient Greek and Roman goddess of love. The name of this planet was her Roman name, while the Greeks knew her as Aphrodite. She is usually portrayed as a beautiful young woman and is often accompanied by her infant son, Cupid. This planet's name is also associated with good luck.

3. According to many myths, the oceans existed long before there was any land on this planet. In Alaska, native people once believed that a raven made the land by diving into the ocean and bringing up a clump of mud in its beak. An alternative version of this myth describes how a coyote created the land from a floating bird's nest.

4. The astronomer Giovanni Schiaparelli studied this planet in the 1870's. He observed straight features on this planet that he called canali. This word means channels in Italian, but it was incorrectly translated to canals in English, which suggested intelligent life. The idea that this planet was inhabited caused a sensation, but the canali turned out not to exist.

5. Although ancient people did not know the exact size of this planet, they referred to it as the "king" of the planets. In mythology, this planet was the ruling god of the ancient Romans. The ancient Greek name for this planet was Zeus Pater. The ancient inhabitants of India knew him as Dyaus Pita.

6. This planet was the ancient Roman god of the countryside and crop farming. The festival of this planet, called Saturnalia, was a major event in the Roman calendar. The festival was filled with days of feasting and entertainment. Saturnalia gave people the opportunity to relax and have fun.

7. According to an ancient Greek myth, this planet was the god of the sky and the father of the Titans, who ruled the world before there were gods. This planet was also the father of the monstrous, one-eyed Cyclops. This planet was not the first-choice name for the new planet; Herschel wanted to call it George's Star in honor of Kind George III. Other astronomers insisted on a name from ancient mythology to match the other planets.

8. This planet was the ancient Roman god of the sea. The ancient Greeks knew him as Poseidon. This planet is often depicted driving a chariot pulled by sea horses. This planet was also the god of earthquakes, whose anger was supposed to make the ground tremble. His symbol was the three-pronged trident traditionally used to catch fish. The trident is sometimes also used as a symbol for this planet.