



Comparing the Sun and the Planets

Our Sun is the largest body in the Solar System but it is still considered an average-sized star. It is the only star in our solar system. The Sun is over 93 million miles away from the earth. It's light takes about 8 minutes to reach the earth. Without its heat and light there would be no life on our planet.

A planet is a large body that shines by reflected light and travels in a stable path around a star. The Sun is the star of our Solar System and controls the motion of all the planets that travel around it. The planets are illuminated, or lit up by sunlight. Some planets may be mistaken as bright stars on a clear night. However, when carefully observed, planets shine with a steady glow of reflected light, whereas, stars appear to flicker or twinkle.

Size of Sun and Size of Planets

Materials: Bulletin board display

What To Do:

Observe the bulletin board your teacher has prepared showing the planet sizes.

Questions:

1. Which planet is the largest? _____
2. Which planet is the smallest? _____
3. Which two pairs of planets are about the same size?
_____ and _____ **AND** _____ and _____



Your teacher will fold the earth model in half so you can see the diameter.

4. Predict how many earths do you think would fit across the diameter of Jupiter? _____

Your teacher will have a volunteer measure it.

5. How many earths fit across Jupiter? _____

6. How many earths fit across of Saturn? _____

7. How many earths fit across Neptune? _____

Your teacher will show you how much bigger the sun is than the planets with a piece of string.

8. The sun's diameter on the same scale as these planets will be 11 meters across. The earth's diameter is 5 cm. How many earths can fit across the sun? Do the math in the box below.

How Close are the Planets?

Materials: calculator, toothpick (one per planet) modeling clay, tape, scissors, ruler, 25 cm Sun

What To Do:

1. Using the diameters of the planets in kilometers, calculate the scale sizes of the planets in centimeters using the chart on the next page.
2. Your teacher will assign your group a planet.
3. Get enough clay to form a sphere the size of your planet.
4. On a small strip of paper, write the name of your planet and attach it to your planet to label it.
5. Take your planet where your teacher has set up the sun and the scale for the solar system.



OUR SOLAR SYSTEM



6. One person in your group should stand with the planet where indicated and everyone else should stand back and observe how the planets are arranged.

Planet	Diameter (km)		Scale ratio	Scale Diameter (mm)
Mercury	4,878	÷	5568	
Venus	12,104	÷	5568	
Earth	12,756	÷	5568	
Mars	6,787	÷	5568	
Jupiter	142,800	÷	5568	
Saturn	120,000	÷	5568	
Uranus	51,200	÷	5568	
Neptune	48,600	÷	5568	

S D L X M K R N M W H V Q H N A V N L K
M K N D K E N V R M H S P M M V I G P N
N C T E T O L U C Z S O N U J O U J N R
A D I I J R A C X U S G A B P V S T A R
P K P K D Z V T M B I E O A F K P D P Q
D U S U N E V S C L A R A O E W N D L B
J B H Y A H R Z S Z L H A J O L N O U D
G N L G A S K O S I Y I L S O S P V R D
D D C Y F Y U F K N R X S H A L V N A Z
O X X H H T V N W U U K E Z A T N J N F
L M R W B T E I I S C E D N S H U R U G
V A O U X U R N K A R D E Q K M Q R S T
K Q U O J T S A A H E T Y W A Q L O N F
W R W T F C K Y E L M I S A A N B T J C
G K X U H Z I G H L P C X N J S N U B Y
N E P T U N E O T J L F Z D I R H L G A
C A L O I I A T F J X B R R Q K D P U O
J I G I Z W P I A A N Q E A W H S K C H
S V V N F Z P S I O D H H A W C X I S Z
N S S M S K M A U J B J Y Q F D V U O H

Questions:

1. Which planets are close together?

2. Which planets are far apart?

3. Which planets are large?

4. Which planets are small?

Dwarf Planet

Earth

Eris

Jupiter

Mercury

Neptune

Planet

Pluto

Saturn

Star

Sun

Uranus

Venus

Name _____ period _____

EXIT TICKET

Comparing the Sun and Planets

1. How is a star different from a planet?
 - A. A planet shines by its own light
 - B. A star shines by its own light
 - C. A star is smaller than a planet
2. How many stars are in our Solar System?
 - A. One
 - B. Two
 - C. Thousands
 - D. Millions
3. Which planet is farthest from the Sun?
 - A. Mercury
 - B. Earth
 - C. Neptune
 - D. Mars

Conclusion: (Uranus, Sun, star, Saturn, Mars)

The _____ is the largest body in our Solar System. It is the only _____ in this Solar System. Venus is about the same size as _____. Earth and _____ are close together while Jupiter and _____ are far apart.

Name _____ period _____

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