

A Family of Planets

Draw or Download a picture showing the order of the planets

Name: _____ Pd _____

Parent Signature of completion:

Science Number:

Section 1: The Nine Planets (452-462)

Read "Measuring Interplanetary Distances" and look at figure 2 on pg 452.

1. What is an astronomical unit? _____

2. What is another unit used to measure distance in space? _____

3. Why are the inner planets also called terrestrial planets? _____

1. Complete the chart below by writing 2 facts about each INNER planet in the box and fill in the statistics table.

INNER PLANET	FACTS	STATISTICS
Mercury		Distance from Sun: 3.2 light minutes Per. of Rotation: 58 days, 16 hours Per. of Revolution: _____ Surface Gravity: _____ of Earth's
Venus		Distance from Sun: _____ light min. Per. of Rotation: 243 days Per. of Revolution: 224 days, 27 hours Surface Gravity: 91% of Earth's
Earth		Distance from Sun: 8.3 light minutes Per. of Rotation: _____ days, _____ hrs Per. of Revolution: 365 days, _____ hrs Surface Gravity: 100% of Earth's
Mars		Distance from Sun: 12.7 light min. Per. of Rotation: 24 _____, 37 min. Per. of Revolution: 1 year, 322 days Surface Gravity: _____ of Earth's

4. Why are the outer planets also called terrestrial gas giants? _____

TRUE or FALSE (circle one): Venus rotates in the opposite direction of Earth. Earth has prograde rotation (counterclockwise) and Venus has retrograde rotation (clockwise).

5. TRUE or FALSE (circle one): The gas giants are very large planets that don't have any known solid surfaces.

6. Complete the chart below by writing 2 facts about each OUTER planet in the box and fill in the statistics table.

OUTER PLANET	FACTS	STATISTICS
Jupiter		Distance from Sun: 43.3 light min Per. of Rotation: __ hrs __ min. Per. of Revolution: 11 yrs, 313 days Surface Gravity: _____ of Earth's
Saturn		Distance from Sun: ___ light hrs Per. of Rotation: 10 hours, 30 min. Per. of Revolution: __ yrs, 155 days Surface Gravity: 92% of Earth's
Uranus		Distance from Sun: 2.7 light hours Per. of Rotation: __ hrs, __ min. Per. of Revolution: 83 yrs, ___ days Surface Gravity: 89% of Earth's
Neptune		Distance from Sun: 4.2 light hours Per. of Rotation: 16 _____, 7min. Per. of Revolution: 163 yrs, 263 days Surface Gravity: _____ of Earth's

7. Read page 462: *Pluto – A double Planet?* What makes Pluto so unique?

The Planets of Our Solar System

Complete this worksheet after you finish reading the sections "The Inner Planets" and "The Outer Planets." Write your answers in the spaces provided on the next page.

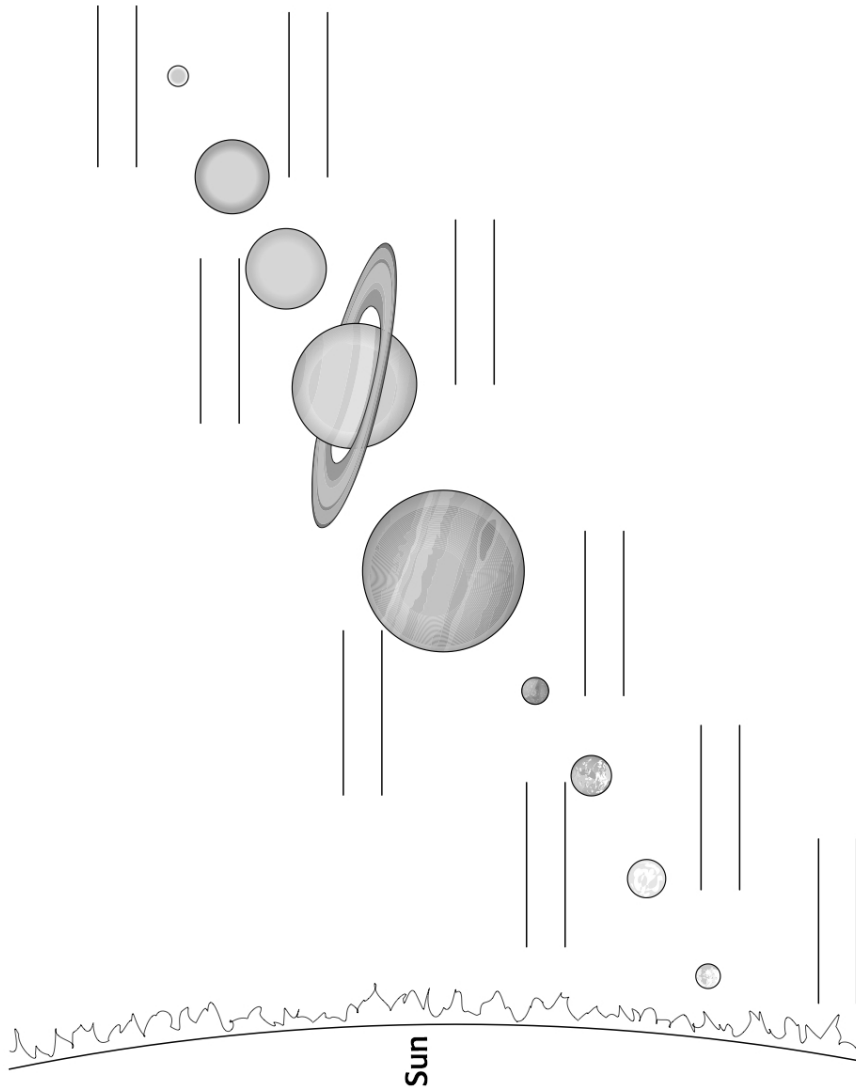
- Write the name of each planet on the line next to the picture of the planet on the diagram.
- Draw a red circle around the group of terrestrial planets.
- Draw a green circle around the group of gas giants.
- Using a brown-colored pencil, draw the asteroid belt in its proper place.
- Draw the location of the Kuiper belt in blue.
- The following is a list of some of the moons in our solar system. In the space provided on the diagram, write the name of each moon next to the planet it orbits.

Charon	Triton	Deimos
Ganymede	Phobos	Miranda
Europa	Luna	Titan
- Match each of the following characteristics with the correct planet, and write the corresponding letter in the space provided on the diagram. Each planet has two of the listed characteristics.

- | | |
|--|--|
| <p>A. It is the smallest planet.</p> <p>B. It is the least dense of the planets.</p> <p>C. Its year is only 88 Earth days long.</p> <p>D. This inner planet has retrograde rotation.</p> <p>E. It has sulfuric acid clouds.</p> <p>F. It can support life.</p> <p>G. It has the most visible ring system.</p> <p>H. It has the Great Red Spot.</p> <p>I. It is the gas giant farthest from the sun.</p> <p>J. It has Olympus Mons, the largest mountain in the solar system.</p> | <p>K. It has a moon more than half its size.</p> <p>L. It is tilted on its side.</p> <p>M. It is known as the red planet.</p> <p>N. It is closest to the sun.</p> <p>O. It has winds that travel at more than 1,000 km/h.</p> <p>P. Its period of revolution is approximately 365 days.</p> <p>Q. It has a greenish tinge.</p> <p>R. It is the largest planet.</p> |
|--|--|

Additional notes: _____

Be sure to write your answers to pg 4 questions here AND color!



Section 2: Moons (p 463-470)

8. What is a **satellite** (page 463)? _____

Turn to page 466 and skim through the section titled *Eclipses*. Copy figures 24 and 27 in the boxes below.

Solar Eclipse	Lunar Eclipse

Section 3: Small Bodies in the Solar System (p 471-475)

9. A) What is a **comet** made of? _____

B) Copy figure 34 in the box →. Be sure to label the parts of the comet.



10. TRUE or FALSE (circle one): The *perihelion* is the point in an orbit *farthest* from the sun and the *aphelion* is the point in the orbit *closest* to the sun.

11. What is an **asteroid** made out of? _____

Glenco Virtual Lab: you can also access them off my web pg: Distances in Space
http://www.glencoe.com/sites/common_assets/science/virtual_labs/E28/E28.html

Distances in Space

What are the dimensions of the solar system?

Watch the video. Complete the table by traveling to each planet/body. Answer questions

Planet	Average Distance from the Sun (AU)	Approximate Travel Time (years)	Approximate Diameter (km)	Order of Planet from Sun (1-9)
Mercury				
Venus				
Earth				
Mars				
Jupiter				
Saturn				
Uranus				
Neptune				
Pluto				

Questions: 1. How do the sizes of the inner planets compare to the outer planets?

2. How do the distances between the orbits of the inner planets compare to the distances between the orbits of the outer planets?

Virtual Lab 2: **Virtual Flight through the Solar System**: click on from web page
 Site 2: http://www.classzone.com/books/earth_science/terc/content/visualizations/es2701/es2701page01.cfm

- How fast was the simulation moving through space? _____
- At the speed of today's fastest spacecraft (~20 km/s) how long would it take to travel this distance: _____
- Even at light speed, how long would this trip take? (~300,000,000 m/s) _____


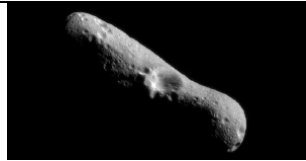

Virtual Lab 3: **Astronomical Distance Calculator**: (complete the table)
 Site 3: <http://janus.astro.umd.edu/astro/distance/> You can pick 3 additional speeds

Speed	Estimated Time of Arrival at...					
	Our Moon	Mars	Pluto	Proxima Centauri (closest star)	Center of the Milky Way	Andromeda Galaxy (closest galaxy)
100 mph	3.31 months					

Small Body Classification

Part 1: Asteroid, Meteor, or Comet?

Place an "X" in the appropriate boxes to indicate characteristics of asteroids, comets, and meteors. USE YOUR NOTES!

	Asteroid	Meteor, Meteoroid, Meteorite	Comet
1. Appears as a streak in the sky			
2. Orbits the sun			
3. Also called "shooting stars" or "falling star"			
4. Made of ice			
5. Made of rock			
6. Contains metals such as nickel & iron			
7. Formed outside of the solar system from the Kuiper Belt and/or Oort Cloud			
8. Possess a long coma or tail			
9. Leftover pieces from the formation of the solar system			
10. Orbits between Mars & Jupiter			
11. Have predictable appearances in the night sky			
12. Typically burn up in the Earth's atmosphere			
13. May strike the Earth's surface			
14. Categorized into short-period or long-period			
15. Separates the inner planets from the outer planets			
16. Ceres, Vesta, Ida, Dactyl			
17. Hale-Bop, Halley's, Hyakutake			
18. 			
19. 			
20. 			

Look at page: 474 titled "Meteoroids". Complete the chart below.

	Definition	Picture
meteoroid		
meteorite		
meteor		

Moon Phases: Draw and Label. Do them in order

1. New moon	2.	3.	4.
5.	6.	7.	8.

Vocabulary: Section 1-2-3

Word/pg	Definition: From the Chapter NOT the glossary
Prograde rotation	
Retrograde rotation	
Phases	
Eclipse	
Perihelion	
Aphelion	
Asteroid belt	

Additional Notes: _____

