CHAP 18:

A Family of Planets

Draw or Download a picture showing the order of the planets

Name:	Pd	
Parent Signature of completion:		Science Number:

	al unit?
2. What is another unit u	sed to measure distance in space?
3. Why are the inner plan	nets also called terrestrial planets?
=	t below by writing 2 facts about each INNER plant 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: 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 minute : 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? ______

-2-

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: hrsmin. 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 pag	ge 462: Pluto – A double Pla	net? What makes Pluto so unique?

7.Read page 462: <i>Pluto – A double Planet?</i>	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.

- **1.** Write the name of each planet on the line next to the picture of the planet on the diagram.
- 2. Draw a red circle around the group of terrestrial planets.
- **3.** Draw a green circle around the group of gas giants.
- **4.** Using a brown-colored pencil, draw the asteroid belt in its proper place.
- **5.** Draw the location of the Kuiper belt in blue.
- **6.** 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.

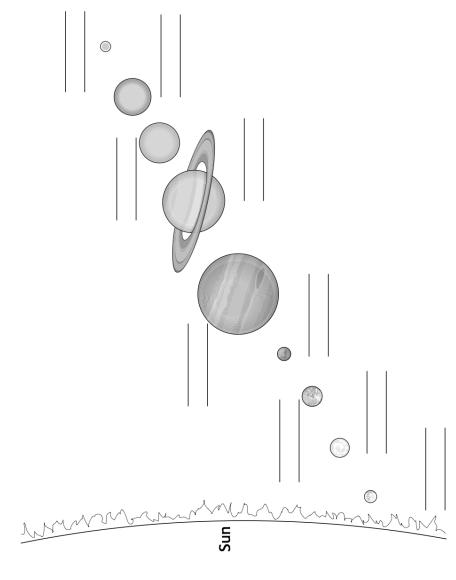
Charon	Triton	Deimos
Ganymede	Phobos	Miranda
Europa	Luna	Titan

- **7.** 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.
- **A.** It is the smallest planet.
- **B.** It is the least dense of the planets.
- C. Its year is only 88 Earth days long.
- **D.** This inner planet has retrograde rotation.
- **E.** It has sulfuric acid clouds.
- **F.** It can support life.
- **G.** It has the most visible ring system.
- **H.** It has the Great Red Spot.
- **I.** It is the gas giant farthest from the sun.
- **J.** It has Olympus Mons, the largest mountain in the solar system.

- **K.** It has a moon more than half its size.
- **L.** It is tilted on its side.
- **M.** It is known as the red planet.
- **N.** It is closest to the sun.
- **O.** It has winds that travel at more than 1,000 km/h.
- **P.** Its period of revolution is approximately 365 days.
- **Q.** It has a greenish tinge.
- **R.** It is the largest planet.

Additional no			

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



Section 2: Moons (p 463-470)

Solar Eclipse	Lunar Eclipse
ection 3: Small Bodies in th	e Solar System (p 471-475)
	-
A) What is a comet made of?	
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A) What is a comet made of?	
B) Copy figure 34 in the box - 0. TRUE or FALSE (circle one):	

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

- 1. How fast was the simulation moving through space?
- 2. At the speed of today's fastest spacecraft (~20 km/s) how long would it take to travel this distance:
- 3. 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	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 LISE VOLIR NOTES!

		Asteroid	Meteor, Meteoroid, Meteorite	Comet
1. Appears a	s a streak in the sky			
2. Orbits the	sun			
3. Also calle	d "shooting stars" or "falling star"			
4. Made of ic	ce			
5. Made of r	ock			
6. Contains	netals such as nickel & iron			
	utside of the solar system from the Kuiper or Oort Cloud			
3. Possess a	long coma or tail			
9. Leftover p system	pieces from the formation of the solar			
10. Orbits bet	ween Mars & Jupiter			
11. Have pred	lictable appearances in the night sky			
12. Typically	burn up in the Earth's atomosphere			
13. May strike	e the Earth's surface			
14. Categoriz	ed into short-period or long-period			
15. Separates	the inner planets from the outer planets			
16. Ceres, Ves	sta, Ida, Dactyl			
17. Hale-Bop,	Halley's, Hyakutake			
18.				
19.				
20.				

Part 2: Planet, Dwarf Planet, or Asteroid (minor planet)?

Below are the official IAU definitions of a dwarf planet, planet, and asteroid.

A PLANET is a celestial body that

- (a) is in orbit around the Sun,
- (b) has sufficient mass for its self-gravity to overcome rigid body forces so that it assumes a hydrostatic equilibrium (nearly round) shape,
- (c) has cleared the neighborhood around its orbit, and
- (d) is not a satellite.

A **DWARF PLANET** is a celestial body that

- (a) is in orbit around the Sun,
- (b) has sufficient mass for its self-gravity to overcome rigid body forces so that it assumes a hydrostatic equilibrium (nearly round) shape,
- (c) has not cleared the neighborhood around its orbit, and
- (d) is not a satellite.

An ASTEROID (or minor planet)

- (a) orbits the Sun inside the orbit of Jupiter
- (b) does <u>not</u> have sufficient mass for its self-gravity to overcome rigid body forces so that it assumes a hydrostatic equilibrium shape (it is <u>not</u> round shaped),
- (c) has not cleared the neighborhood around its orbit, and
- (d) is not a satellite.

Use background knowledge to state whether each object is a planet, dwarf planet, or asteroid. Then, provide at least 3 reasons to support the classification, as shown in the example.

	Picture	Classification	Support
1. Earth			1. It orbits the sun 2. It's round 3. Has cleared its neighborhood 4. Has its own moon
2. Ceres			1. 2. 3. 4.
3. Vesta	500 km		1. 2. 3. 4.
4. Pluto			1. 2. 3. 4.
5. Ida			1. 2. 3. 4.

Teach a parent: This chapter's 2 concepts to teach! Worth 10 pts!

1. Lunar and Solar Eclipses: What they are, how they are different

2. What are Comets, Asteroids & Meteors, meteoroids & meteorites

Help your parent become an expert!

Be sure they write what they have learned from your teaching

Parent Kesponse
1 I'm not sure my child really understands, therefore, I don't either.
Please work with him/her and let's try again.
2 The concept was explained thoroughly with effective examples he/she created.
"By golly, I think they've got it!"
3 WOW! My child did an exceptional job! It was logically explained, therefore I caught
on immediately and feel confident about teaching it to others. The self-created examples
were a perfect fit. My child even asked me a question at the end to make sure I understood.
I believe my child could effectively teach this concept to others.
Parent Signature: Date:
Parent Signature: Date: Mom or Dad Comments: Please explain how your student taught you this concept an * what you learned in 3-5 sentences! * This is critical for them to receive full points 1. The plantage of the plantag
1. Explain: Lunar and Solar Eclipses differences:
2. Explain: Comets, Asteroids & Meteors, meteoroids & meteorites:

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

	Definition	Picture
meteoroid		
meteorite		
meteor		

Moon Phases: Draw and Label. Do them in order

MOON TRAJES. DI WAS AND EASELY DO CHEM ON OTHER			
1. New moon	2.	3,	4.
<i>\$</i> .	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 I	Notes: