Name: Key
Earth Science L1/L2

Date:
Mrs. Nork

Use PPT notes, your text (L1 Ch 22,23 and L2 Ch 29) and your brain to answer these.

1. What is the difference between geocentric and heliocentric views of the solar system? Who developed these theories? geocentric - Earth centered solar system, developed by Ptolemy
heliocentric - Sun centered solar system, developed by Copernicus

2. What are Kepler's three laws of planetary motion?
1.) Planets move in elliptical orbits around the sun. 2) Equal area law
3) Harmonic law ($p^2 = d^3$)

3. What is an elliptical orbit? How is eccentricity determined? What is the shape of an ellipse with an eccentricity of 0?
1? Ellipses have two central points called foci. Eccentricity = $\frac{\text{distance bet. foci}}{\text{length of major axis.}}$
Eccentricity of "0" - perfect circle. "1" - straight line.

4. Explain which orbit is the least/most eccentric and why.
Mercury 0.2056 Venus 0.0068 Saturn 0.0560 Uranus 0.0461
least eccentric (most circular) is venus.
most eccentric (least circular) is Mercury.

5. How is distance measured in astronomy? What is an AU? Light year?
AU: astronomical unit equals the avg. distance bet. Earth + Sun. 150,000,000 Km
light year = the distance light travels in one year; equals 9.5×10^{12} Km.

6. What are asteroids? Where in our solar system are they found? (between which 2 planets?)
Rocky chunks that orbit the sun between Mars + Jupiter in the Asteroid Belt.

7. Why does the asteroid belt exist? What prevented it from becoming a planet?
Perhaps Jupiter's large mass + gravity prevented a planet from forming

8. What are comets? Where in our solar system are they found? Why does a comet's tail always point away from the sun? What are the parts of a comet? (Sketch if you want)
comets - icy, dusty chunks found in Oort cloud (outside of Pluto). The tail is formed by solar wind, so it always points away from sun.

9. What is the difference between a meteor, meteoroid, and meteorite?
meteoroid - small, rocky chunk from an asteroid.
meteor - flash of light created as meteoroid burns up in atmosphere.
meteorite - meteoroid that has struck a planet's or moon's surface.

10. What are micrometeroids? How often do they hit earth? Can they be dangerous?
very tiny fragments of meteoroids. Sand or dust sized. They strike Earth continuously. Yes, they can be dangerous to spacecraft at high speeds.

11. What is the difference between planetary rotation and revolution? (Which is a day? Year?) What is the ecliptic?
rotation - spinning on an axis, causes day / night
revolution - orbiting around another planet or star, causes year.

12. Which planet has retrograde spin? What does this mean?
Venus - it spins backwards (clockwise)

13. What is the solar nebula theory of planet formation? What is the approximate age of the solar system?
About 5 billion years ago, the sun + planets + their moons formed from a collapsing, spinning disc of gas + dust.

14. How/where did the terrestrial (inner) planets form? Name them.
Inner, or "earthlike" planets formed closer to the 
Mercury, Venus, Earth, Mars

Name:

Date:

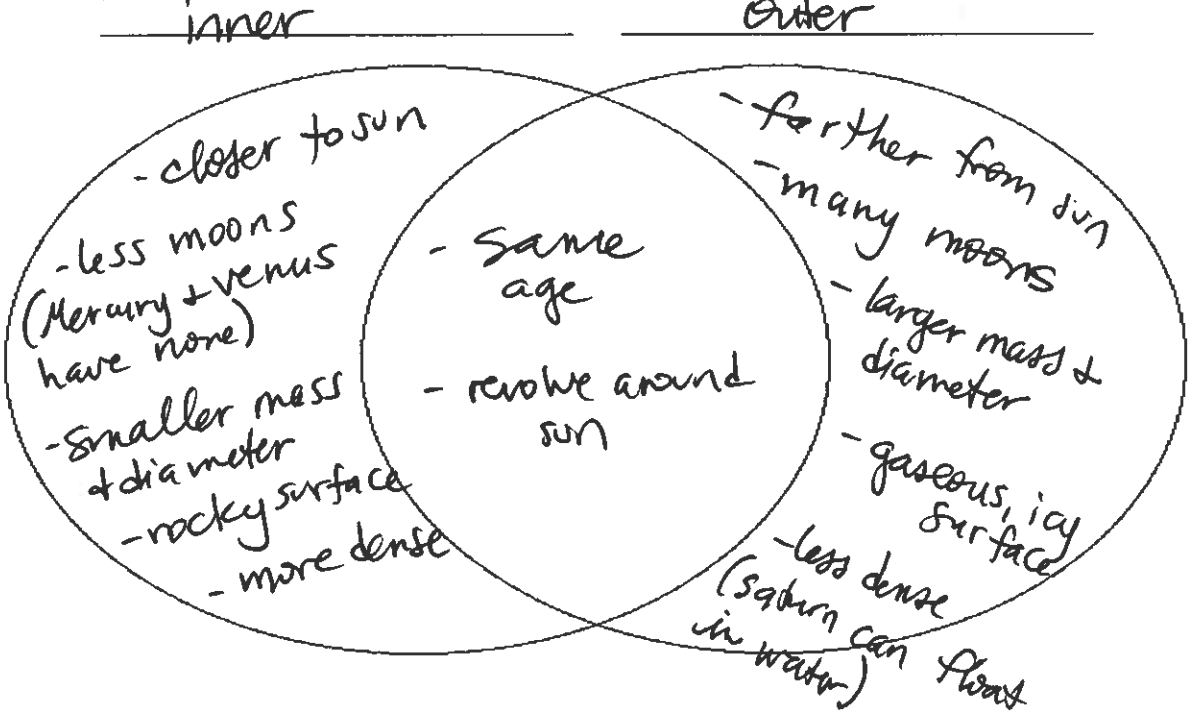
Earth Science L1/L2

Mrs. Nork

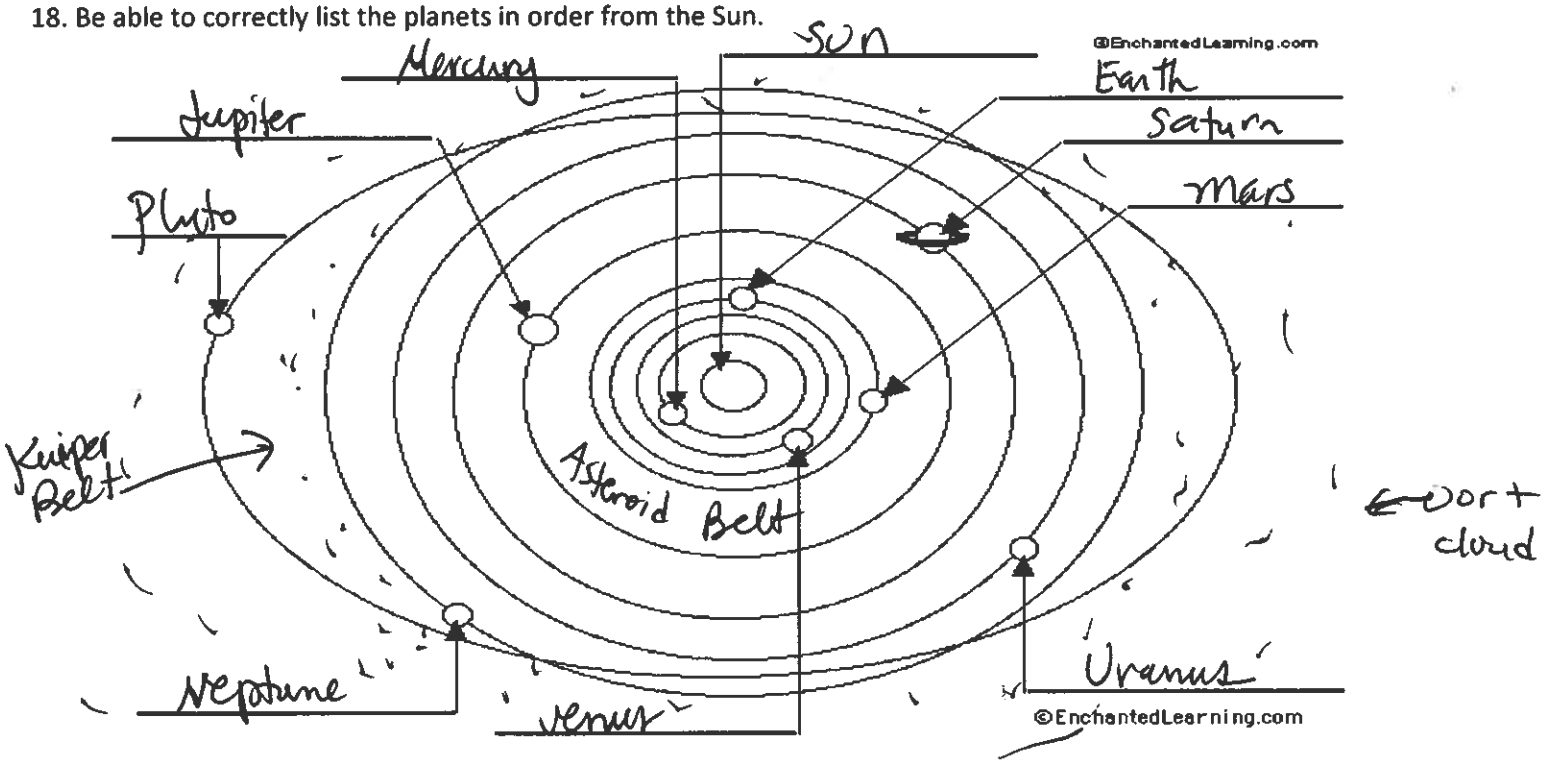
15. How/where did the Jovian (outer) planets form? Name them.

Jovian, or "Jupiter-like" planets formed farther away from the sun. Jupiter, Saturn, Uranus, Neptune

16. Compare/contrast the inner and outer planets in terms of: a) distance from the sun, b) number of moons, c) relative diameter/mass, d) surface features, e) density.



18. Be able to correctly list the planets in order from the Sun.



Name:

Earth Science L1/L2

Date:

Mrs. Nork

14. Where are the Kuiper Belt and Oort cloud located in our solar system? What lives in both of these? Where would they be located on the diagram above?

15. What does our solar system consist of? (Who are our "neighbors"?) Are stars inside or outside of our solar system?

we only have 1 star in our solar system

our sun, planets, their moons, asteroids, meteoroids, comets.

16. Provide one or two unique features for each of the planets.

Mercury- resembles our moon, rocky + cratered.

Venus- rotates backwards, huge greenhouse effect

Earth- life + mostly water

Mars- ice caps, seasons + similar tilt to Earth, appears reddish in color.

Jupiter- largest planet, Great Red Spot

Saturn- spectacular, easily visible rings, can float in water.

Neptune- Blue due to methane, windy, dark spot

Uranus- Bluish/green due to methane, spins on its side.

17. Why is Pluto no longer considered a planet? What is its new classification?

Too small + has not "cleared" its orbital path. Has 5 moons, but one is almost as big as it is. Dwarf Planet.

18. Match the spacecraft/ probe with its correct mission.

C 1. Mariner

E 2. Magellan

F 3. Voyager I and II

A 4. Viking I and II

B 5. Cassini/Huygens

D 6. Galileo

a. sent 2 landers to the Martian surface and took photos, recorded temperatures, and conducted chemical tests of Martian soil

b. currently studying Saturn and its moon Titan

c. took extensive photos of Mercury in 1975

d. first spacecraft to intensely study Jupiter's atmosphere; crashed into Jupiter in 2003

e. spacecraft sent to study Venus

f. were initially sent to study Jupiter and Saturn, but were allowed to continue on and visit the outer solar system; are currently 110.7 and 89.7 AUs from our sun and are still functioning