

Earth Science Chapter 20: Observing the Solar System

Match the observations or discoveries with the correct scientist. Answers may be used more than once. Answers that cannot be read will be counted as incorrect.

- a. early Greek astronomers
- b. Ptolemy
- c. Nicolaus Copernicus
- d. Galileo
- e. Tycho Brahe
- f. Johannes Kepler

_____ 1. thought the earth was at the center of the solar system and the planets move on small circles that move on bigger circles

_____ 2. found that Mar's orbit was a slightly flattened circle of ellipse

_____ 3. developed the heliocentric model

_____ 4. used the telescope to discover four moons revolving around Jupiter

_____ 5. were the first to think that Earth was at the center inside a rotating dome, which is the geocentric model

_____ 6. found that the orbit of each planet is an ellipse

_____ 7. carefully observed the positions of planets for twenty years without the use of a telescope

_____ 8. discovered that Venus goes through a series of phase similar to those of Earth's moon

_____ 9. was able to work out the arrangement of the known planets and how they around the sun

_____ 10. used the newly invented telescope to make discoveries that supported the heliocentric model

Earth Science Chapter 20: The Sun

Fill in the blanks in the chart below. Answers that cannot be read will be counted as incorrect.

| Vocabulary | Definition |
|-------------------|--|
| Corona | |
| | Areas of gas on the sun's surface that are cooler than the gases around them |
| Radiation zone | |
| | Center region of the sun |
| Solar wind | |
| | Eruptions of gas into space |
| Photosphere | |
| | The outermost layer of the sun's interior |
| Chromosphere | |
| | Huge, reddish loops of gas |

Earth Science Chapter 20: The Inner Planets

Answer the following questions in complete sentences. Answers that cannot be read will be counted as incorrect.

1. What are the four inner planets? _____

2. What is the only planet in our solar system to have liquid water? _____

3. Describe the atmosphere of Mercury. _____

4. How are Venus and Earth different? _____

5. What evidence exists that suggest that water used to flow on Mars? _____

Earth Science Chapter 20: The Outer Planets

Circle the letter that best answers that question. Answers that cannot be read will be counted as incorrect.

1. Which of the following is NOT an outer planet?
 - a. Neptune
 - b. Mars
 - c. Jupiter
 - d. Saturn

2. What is a thin disk of small particles of rock and ice?
 - a. ring
 - b. meteor belt
 - c. asteroid
 - d. gas flares

3. Which statement concerning Jupiter is FALSE?
 - a. it is the largest and most massive planet
 - b. it has a thick atmosphere made up mainly of hydrogen and helium
 - c. it has no moon
 - d. it probably has a dense core of rock and iron as its center

4. What space probe discovered that Saturn's rings are divided into thinner rings?
 - a. *The Eagle*
 - b. *Friendship 7*
 - c. *Apollo 12*
 - d. *Voyager*

5. Who discovered the existence of Uranus?
 - a. John Glenn
 - b. William Herschel
 - c. Buzz Aldrin
 - d. Galileo

Earth Science Chapter 20: Comets, Asteroids, and Meteoroids

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

_____ loose collections of ice, dust and small rocky particles whose orbits are usually very long, narrow ellipses

_____ a fuzzy outer layer formed from clouds of dust and gas

_____ a doughnut-shaped region that extends from beyond Neptune's orbit to about 100 times Earth's distance from the sun

_____ a spherical region of comets that surrounds the solar system out to more than 1000 times the distance between Pluto and the sun

_____ rocky objects that are too small and too numerous to be considered full-fledged planets

_____ the region of the solar system between the orbits of Mars and Jupiter and contain asteroids

_____ a chunk of rock or dust in space

_____ a streak of light in the sky

_____ meteoroids that pass through the atmosphere and hit Earth's surface

Earth Science Chapter 20: Is There Life Beyond Earth?

Answer the following questions. Answers that cannot be read will be read will be counted as incorrect.

Define extraterrestrial life.

Draw what you think an extraterrestrial would look like.

Earth Science Chapter 20: Study Guide

Section 1

- Vocabulary

Geocentric

Heliocentric

Ellipse

- Know the differences and similarities between the geocentric and heliocentric models
- Know the following scientists and what each discovered or hypothesized

Greeks

Nicolaus Copernicus

Johannes Kepler

Romans

Galileo

Ptolemy

Tycho Brahe

- Know all eight planets in the solar system in order (Pluto was down-graded)
- Know what devices were used to study the solar system

Section 2

- Vocabulary

Core

Photosphere

Sunspot

Nuclear fusion

Chromosphere

Prominence

Radiation zone

Corona

Solar flare

Convection zone

Solar wind

- Know the characteristics of the sun and its three interior zones
- Know the layers of the sun's atmosphere
- Know the features of the sun (refer to page 709)

Section 3

- Vocabulary

Terrestrial planets

Greenhouse effect

- Know the four inner planets
- Know the characteristics of Earth, Mercury, Venus and Mars
- Know how the inner planets compare to each other
- Know the space probes *Magellan*, *Mariner 10*, *MESSENGER*, *Spirit*, *Opportunity*, and *Olympus Mons* was and what planets they explored

Section 4

- Vocabulary

Gas giant

Ring

- Know the outer planets
- Know the characteristics of Jupiter, Saturn, Uranus, Neptune and Pluto
- Know the space probes *Voyager*, *Voyager 2* and what planets they explored
- Know who William Herschel is and what he discovered
- Know the following moons: Io, Europa, Ganymede, Callisto, Titan, Triton, and Charon

Section 5

- Vocabulary

Comet

Nucleus

Oort cloud

Coma

Kulper belt

Asteroid

Asteroid belt

Meteor

Meteoroid

Meteorite

- Know the differences between comets, asteroids and meteors
- Know the structure of a comet and how they originated
- Know what asteroids are and where they can be found
- Know what meteors are and the difference between meteors, meteoroids and meteorites

Section 6

- Vocabulary

Extraterrestrial life

- Know what evidence exists to suggest that life may exist on other planets
- Know what the “Goldilocks conditions” are
- Know why animals that live in extreme conditions here on Earth lead us to believe that extraterrestrial life may exist
- Know what the space probes *Viking*, *Spirit*, *Opportunity* and *Galileo* discovered in terms of extraterrestrial life and where
- Know the conditions on Mars in the past that suggest life may have been present
- Know the similarities between Mars, Europa and Earth that suggest possible conditions for life