Handout 2 (pink) Earth's Formation Name_____ Period_____
Standard 2.1

Chapter 8: Section 2: Directed Reading Pages 191-196

Section: Determining Absolute Age (page 191)

1. What is absolute age?

RADIOMETRIC DATING (page 193)

_____ **2**. Small amounts of what type of materials in rocks can act as natural clocks?
a. sedimentary materials **b.** intrusive materials **c.** radioactive materials **d.** igneous materials

_____ **3**. Atoms of the same element that have different numbers of neutrons are called
a. varves. **b.** isotopes. **c.** radioactive particles. **d.** alpha particles.

_____ **4**. Radioactive isotopes emit particles and energy
a. at a constant rate regardless of surrounding conditions.
b. at differing rates regardless of surrounding conditions.
c. at differing rates depending on surrounding conditions.
d. at a constant rate if conditions remain the same.

_____ **5**. In what way is the natural breakdown of radioactive elements most useful to scientists?
a. It can provide an estimate of the absolute age of rocks.
b. It can accurately measure the absolute age of rocks.
c. It can provide an estimate of the relative age of rocks.
d. It can accurately measure the relative age of rocks.

_____ **6**. The method of using radioactive decay to measure the absolute age of rocks is called
a. blind dating. **b.** radioactive dating. **c.** radiometric dating. **d.** decay dating.

_____ **7**. The original radioactive isotope in a rock is called
a. the parent isotope. **b.** the daughter isotope. **c.** the breakdown isotope. **d.** the clock isotope.

8. What are daughter isotopes?

9. What is a half-life?

10. What is the half-life of carbon-14?

11. Why does radioactive carbon-14 begin to decay after a plant or animal dies?

12. Explain how radiometric dating is used to estimate absolute age.

Chapter 28 Section 4: Directed Reading Pages 739-744

Section: Asteroids, Comets, and Meteoroids (page 739)

1. In addition to the sun, planets, and their moons, what occupies the space in our solar system?

ASTEROIDS (page 739)

____ **2.** What are asteroids?
- **a.** small stars outside the solar system
- **b.** rocky bodies that orbit the planets
- **c.** fragments of rock that orbit the sun
- **d.** small bodies of rock and ice with tails

____ **3.** Most asteroids are found in the asteroid belt located
- **a.** between the orbits of Mars and Jupiter.
- **b.** beyond the orbit of Neptune.
- **c.** in orbit around Earth.
- **d.** between the orbits of Mercury and Venus.

____ **4.** The composition of asteroids is similar to that of the
- **a.** inner planets.
- **b.** gas giants.
- **c.** comets.
- **d.** outer planets.

____ **5.** For what reason do many astronomers think that asteroids in the asteroid belt were not able to form a planet?
- **a.** because of the strong gravitational force of Mars
- **b.** because of the strong gravitational force of Jupiter
- **c.** because of the tidal forces of the outer planets
- **d.** because of the inertia of the inner planets

COMETS (page 741)

____ **6.** What is a comet?
- a. a natural body that revolves around a planet
- b. a ring of pieces of rock and ice around a planet
- c. the largest of the smaller bodies in the solar system
- d. a small body of ice, rock, and cosmic dust that orbits the sun

____ **7.** A comet's spectacular tail forms when
- **a.** sunlight changes the comet's ice to gas.
- **b.** sunlight is reflected from the coma.
- **c.** moonlight is reflected from the comet.
- **d.** gravity pulls gas form the comet.

METEOROIDS (page743)

In the space provided, write the letter of the term or phrase that best completes each statement or best answers each question

____	**8.** meteor	**a.**	a large number of meteoroids entering Earth's atmosphere in a short period of time.
____	**9.** meteor shower	**b.**	a bright streak of light that results when a meteoroid burns up in Earth's atmosphere
____	**10.** iron meteorite	**c.**	a meteorite similar in composition to rocks on Earth that may contain carbon compounds
____	**11.** stony meteorite	**d.**	the rarest type of meteorite
____	**12.** meteorite	**e.**	a meteoroid or any part of a meteoroid that is left when it hits Earth
____	**13.** stony-iron meteorite	**f.**	a meteorite with a distinctive metallic appearance

14. Why are the oldest meteorites important?