

Name: _____

Class/Period: _____

Ch 24 - The Earth's Moon

Lesson I - Lunar Exploration

1. Distance to moon: _____ km (~240,000 mi)
2. _____ spacecraft - carried people to the moon; each mission involved three people
3. _____ - first person walks on the moon
4. _____ - the last time a person walked on the moon
5. Apollo astronauts brought back rocks and lunar soil samples; left behind instruments to measure moon quakes, moon's magnetic field; solar wind particles, and gases present at the moon's surface
6. _____ - reusable spacecraft that can carry people and equipment into orbit and return to Earth

Lesson II - Properties and History of the Moon

1. Moon's diameter - 3476 km (more than _____ Earth's 12,756 km equatorial diameter)
2. The moon has a layered structure - 60 km crust; 800 km mantle; and a core that may consist of iron
3. The moon's orbit and rotation are synchronized so that the same side of the moon always faces Earth
4. Lunar surface appears to have light and dark areas
5. lunar _____ (terra) - mountains and highlands of lighter colored rock and dust that reflect more sunlight; heavily cratered from meteoroid impacts; oldest portion of the moon's surface, possibly moon's original crust;
6. _____ - darker areas of the moon's surface; great basins formed by large meteoroids, later filled with molten lava that hardened to form level plains of dark basalt-like rock; youngest portion of the lunar surface; originally thought by Galileo to be seas
7. _____ - tiny objects that bombard the moon; major cause of erosion on the moon
8. lunar rocks differ from Earth's rock: contain no water, greater proportions of elements with high melting points (aluminum & titanium), lesser amounts of elements with low melting points (sulfur and lead), and lesser amounts of elements that exist as gases (nitrogen and chlorine)

Lesson III - The Moon's Surface Features

1. _____ - "mass concentrations"; areas of the moon's surface with higher gravity indicating material beneath the surface is of greater density; found in some of the moon's maria
2. _____ - long deep clefts or cracks running through maria bedrock; best known is Rima Hadley.
3. Most mountain ranges on the moon are located along the edges of _____ and are thought to have originated from material thrown up by the impact of _____
4. _____ - hollows on the moon's surface; the smallest are microscopic and the largest is about 240 km; most craters were formed by the impact of meteoroids
5. feature of lunar craters - roughly circular; _____ with rugged cliffs; crater _____ that may be thousands of meters lower than the surrounding plains
6. _____ - bright streaks radiating from lunar craters formed by ejecta (rocks and debris thrown out by the impact that formed the crater
7. _____ - loose rock materials that forms the lunar "soil"; ranges in thickness from 1 to 20 meters; contains no water or organic material; formed by the smashing impact of meteoroids; Earth's soil was formed by weathering (precipitation & temperature), erosion (water & wind), biological processes (plant growth & decay), and tectonic activity (earthquakes & volcanoes)

Lesson IV - The Moon's Motions and Phases

1. The moon's orbit around the Earth is elliptical; its period of revolution is _____ days
2. **perigee** (peri = near, gee = Earth) = when the moon is _____ Earth
3. _____ = when the moon is farthest from Earth
4. The moon's orbital plane is angled _____° from Earth's orbital plane around the sun; important in determining when eclipses occur (reason we don't have eclipses each month)
5. Sun and moon appear about the same size in the sky - sun diameter is 400 times the moon's, but it is also _____ times farther from Earth
6. Earth rotates west to east; the moon also moves eastward in its orbit around the Earth
7. moonrise and moonset occur about _____ minutes later each day
8. _____ = daily changes in the moon's appearance
9. _____ = phase in which the moon is all dark
10. _____ = phase in which the side of the moon facing Earth is all light
11. _____ = two week period from new moon to full moon (the amount of the moon facing Earth that is reflecting light from the sun is increasing)
12. _____ = the two week period in which a decreasing portion of the the side of the moon facing earth is reflecting sunlight diminishes
13. _____ = only one edge of the lighted half of the moon is facing Earth
14. _____ = half of the moon facing Earth is lighted, half is dark
15. _____ = a majority of the the moon's surface facing Earth is lighted
16. _____ = the time from one new moon to the next (lasts _____ days); moon's period (one revolution) only takes _____ days
17. _____ = occurs when the moon passes into Earth's umbra.
18. _____ = occurs when the moon's umbra reaches Earth's surface
19. Identify (name) the following lunar phases. (*The white portion represents that part of the moon illuminated by the sun during each phase. The black represents that part of the moon that is not reflecting sunlight.*)



Lesson V - Sun, Moon, and Tides

1. _____ - the daily rise and fall of the ocean waters
2. _____ **high tide** occurs on the side of the Earth facing the moon
3. _____ **high tide** occurs on the side of the Earth opposite the moon
4. tides are a result of the gravitational attraction/force of the moon; it may be strengthened or weakened by the position of the sun relative to the Earth and moon.
5. tides occur approximately _____ minutes later each day (the same time delay in the moonrise and moonset)
6. _____ **tide** - extreme high and low tides caused by the alignment of the Earth, moon and sun; occur twice a moon at new and full moons
7. _____ **tide** - minimal tidal ranges that occur at quarter phases of the moon; the result of the sun and moon's gravitational influence opposing one another
8. _____ - the difference in level between high tide and low tide; affected by the size of the body of water and the shape of the shoreline