

Earth Science Facts

1. Density = the mass/volume. Units for density are grams/cm³ or g/ml.
2. Volume for irregular objects is found by water displacement.
3. Warm (air, water, magma) rises because it is less dense. Cold sinks.
4. As pressure increases so does density.
5. Water is most dense as a liquid. Density = 1 g/ml.
6. A hypothesis is an educated guess.
7. A variable is a changeable factor in an experiment.
8. Constants are factors that are the same. Independent variable is the only thing tested and the dependent variable responds to the independent variable.
9. A scientific theory is based on observations and is proven to be true.
10. Scientific law has proven to be true over time.
11. The altitude of Polaris equals your latitude.
12. Latitude lines go from east to west but are measured in degrees North and South of the Equator.
13. Longitude lines go from north to south but are measured in degrees East or West of the Prime Meridian.
14. The closer the contour lines, the steeper the slope.
15. The Earth is divided into 24 time zones each 15 degrees. The time gets 1 hour earlier every time zone

west until the International date line is reached. At this point the date changes.

16. The Earth rotates W to E once in 24 hours.
17. The Earth revolves counter-clockwise around the sun once in 365.25 days.
18. The Earth is the 3rd planet from the sun.
19. The moon has phases because of reflected sunlight and the angle at which we view it.
20. Foucault's pendulum and Coriolis effect prove the Earth rotates.
21. Parallax and seasonal constellations prove the Earth's revolution.
22. Two types of planets-inner are rocky and outer are gaseous.
23. Comet's tail is the result of the solar wind and points away from the sun.
24. Comets are known as dirty snowballs in space and originate in the Oort Cloud.
25. Asteroids are rocky or metallic iron objects and are found mainly between Mars and Jupiter.
26. AU= distance of Earth to Sun. We measure planet distances in AU's.
27. A light year is the distance light travels in a year. We measure star and galaxy distances with light years.
28. Apollo 11 was the 1st manned landing on the moon. Neil Armstrong was the 1st man on the moon.

29. The Big-Bang Theory is one of the origin of the universe. The Universe began as a dense sphere that expanded and condensed into galaxies.
30. The Solar Nebula Theory states that the planets formed from the condensing of our sun or solar nebulae.
31. Our Sun's Life Cycle is nebulae, protostar, main sequence star, red giant, white dwarf, and black dwarf.
32. Black holes are the death stage of stars.
33. We are located in the Milky Way Galaxy which is a spiral galaxy.
34. The 3 types of galaxies are spiral, elliptical, and irregular.
35. The Hubble Space telescope has improved our knowledge and understanding of the Universe.
36. Red Shift indicates the universe is expanding outward. This is used to support the Big Bang Theory.
37. Blue Shift indicates movement toward the Earth.
38. Hertzsprung Russell diagram shows the relationship between temperature and luminosity.
39. We have 2 high tides and 2 low tides approximately every 24 hours.
40. Tides are caused by the gravitational pull of the Earth, Sun, and the Moon.
41. Currents move from warm to cold areas.

42. Upwelling brings cold, nutrient rich water from the bottom of ocean to the surface. This water is rich in biological activity.
43. Estuaries are areas where salt water mixes with fresh water. Ex. Chesapeake Bay
44. Sea level rises when ice caps melt.
45. Cyanobacteria were responsible for the first oxygen on Earth. Presently Blue Green algae are an important source of oxygen.
46. The ocean is the largest reservoir of heat at the Earth's surface. It drives the weather of the Earth.
47. The continental shelf is closest to the land, followed by the continental slope, and continental rise.
48. The flat part of the ocean is called the abyssal plain.
49. Trenches are very deep cracks in the bottom of the ocean
50. Seamounts are underwater mountains or volcanoes.
51. Turbidity currents are masses of water and rich sediment that flow down the continental slope. Turbidity currents are like underwater avalanches.
52. Ocean water contains many salts and has not changed for billions of years.
53. The thermocline is a zone in the ocean in which temperature decreases rapidly.
54. The early atmosphere was mostly CO₂ and very little O₂.
55. The Earth's atmosphere is 21% oxygen, 78% nitrogen, and 1% trace gases.

56. Human activities such as burning fossil fuels have increased CO₂ levels.
57. High CO₂ levels produce the Greenhouse effect.
58. Chlorofluorocarbons are decreasing the ozone levels of the upper atmosphere.
59. Areas near the equator receive the most direct sunlight.
60. Clouds form when air is at or below its dew point and condensation nuclei are present.
61. Coriolis Effect causes deflections of the atmosphere and oceans due to rotation of the Earth.
62. A psychrometer (hygrometer) measures humidity in the air. A barometer measures air pressure.
63. Highs are warm and dry; lows are cool and wet.
64. Wind is due to the unequal heating that causes air pressure differences.
65. Winds blow from high pressure to low pressure.
66. Cold fronts move quickly and produce rain at the front.
67. Warm fronts move slowly and produce miles and miles of clouds.
68. The highest pressure is found at sea level.
69. High pressure moves clockwise and outward.
70. Low pressure moves counter clockwise and inward.
71. U.S. weather is dominated by prevailing westerlies. Weather moves west to east.

72. Summer solstice is around June 21st (longest day). Winter solstice is around December 21st (shortest day).
73. Solstice is when the sun is at its most Northern or Southern point.
74. Equinoxes is when the sun is directly over the equator. Approximately Spring (vernal) March 21st and Fall (autumnal) September 21st.