

Level 2 Earth Science Review

Name _____

You will take the exam on _____ in _____ during your class period which is _____.

Introduction

1. What are the branches of Earth science, what is studied in each branch?
2. List and describe the layers of the Earth.

Measurement

3. What are the SI units of measurement based on?
4. What instruments are used to measure each? Know how to read each instrument.
5. Name the units and give their value.
6. How would you find volume of:
 1. regularly shaped object
 2. an irregularly shaped object
 3. a liquid
7. How would you find the mass of:
 1. liquid
 2. solid
 3. a sphere that rolls off the pan
8. What is the formula for density?
9. What 2 measurements do you need to find density?

Scientific Method

10. What are the meaning of these words, give an example of each:
 1. scientific method
 2. problem
 3. hypothesis
 4. experiment

5. data
 6. observations
 7. analysis
 8. conclusion
11. Distinguish between the control and variable in an experiment.

Class Safety: *Know the basic rules.*

Chemistry- *Now how to use the periodic table.*

12. What are the parts and locations of the parts of an atom?
13. What is the atomic mass? What is the atomic mass of Mg?
14. If an atom is neutral the number of electrons should. . .
15. If an atom is an ion the number of electrons could . . .
16. How is an isotope different from a neutral atom?

Moon

17. If you were to travel to the moon, what type of land structures would you see?
18. How do scientists think each feature was formed?
19. What is the most widely hypothesis describing the lunar formation?
20. List the eight phases of the moon. Be able to identify a drawing of each and the position in the moon's orbit around the Earth.
21. What side is the light on during the waxing phases?
.....during the waning phases?
22. What is an eclipse and what types are visible from Earth?
23. During what phase of the moon will each type of eclipse occur?
24. Draw the positions of the sun and moon for each eclipse.
25. Discuss the rotation and revolution of the moon and the period of each.

26. How is the umbra different from the penumbra?
27. What causes the high and low tides?
28. What is a neap tide? What is a Spring tide?

Solid Earth and its position and location.

29. Describe the earth's shape.
30. Describe the rotation and revolution.
31. How is the earth's axis tilted?
32. What is gravity and what is it dependent upon?
33. How are weight and mass different?
34. Where on earth would your weight be less? Why?
35. What is the shape of the earth's orbit and where is the sun located?
36. When are we closest to the sun?
..... farthest from the sun?
37. What are the perihelion and aphelion?

Seasons

38. What causes the seasons?
 - 1.
 - 2.
 - 3.
39. What and when are the equinoxes? Where on earth is the sun over head at noon on the equinoxes?
40. What does the word solstice mean? When are they? Where on earth is the sun over head at noon on these dates?
41. What are the vertical rays? What do they do for the earth?
42. Between what two lines of latitude are the vertical rays always found?
43. How many hours of daylight are there everywhere on the equinoxes?

44. How many hours of daylight are there at the North and South poles on the solstices?

Sun and Solar System

45. List, describe, and identify on a diagram the layers and features of the sun.

46. Where is the core of the sun and what happens there?

47. What is nuclear fusion?

48. Where is light made?

49. Describe sunspots.

50. How often is there a sunspot maximum?

51. What is a solar flare? What erupts from it?

52. What happens during a solar prominence?

53. What happens when solar wind particles reach the earth?

54. What are asteroids and where can they be found?

55. What is the difference between meteoroids, meteors and meteorites?

56. Describe the parts of a comet.

Light and telescopes

57. List and describe the types of electromagnetic radiation

58. What is the relationship between wavelength and frequency?

59. Which wavelength has the most energy? the least energy?

60. Which type of radiation has the longest wavelength?
..... the shortest wavelength?

61. What does a prism and a spectroscope do to light that passes through it?

62. What can scientist learn about a star by studying its spectrum?

63. What are the types of spectra?

- 64. What does the term optical mean?
- 65. What evidence do we have that the universe is expanding?
- 66. How does a reflecting telescope differ from a refracting telescope?

Stars and Galaxies

- 67. Describe the Big Bang theory.
- 68. Compare a km to an astronomical unit to a light year.
- 69. Distinguish between apparent magnitude to absolute magnitude.
Which numbers are the brightest? Which are the faintest?
- 70. What is a galaxy? What are the types of galaxies?
- 71. How was the solar system formed? (Protoplanet Hypothesis)
- 72. What steps did the earth go through as it changed from a protoplanet to the earth we know? What is the age of the Earth?
- 73. What is a star made up of and what can you determine from its color?
- 74. How are stars born?
- 75. Explain how a large star dies. What may it turn into?
- 76. Explain how a star the size of our sun will die.
- 77. What is the significance of red and blue shifts in the spectrum of stars?
- 78. Describe and identify the types of stars on the H-R diagram.

Physical Laws

- 79. Define the terms:
 - 1. force
 - 2. acceleration
 - 3. inertia
- 80. What did each of these men contribute to astronomy?

1. Copernicus

2. Galileo

3. Kepler

4. Newton

5. Tycho Brahe

81. List and describe Newton's 4 laws.

82. List and describe Kepler's Laws of planetary motion.

Weather and Earth's atmosphere

83. Distinguish between atmosphere, weather, and climate.

84. Differentiate between evaporation, condensation, and sublimation.

85. What is relative humidity and how did we measure it in class?

86. How do rain drops form?

87. List and describe the three ways heat is transferred.

88. List the most abundant gases in dry air.

89. Describe the Greenhouse Effect.

90. List and describe the layers of Earth's atmosphere.