Welcome to Earth and Space Science

Unit Study Guide

13 Multiple Choice Questions (2 point each)

1. What are the four branches of Earth and Space Science and what do they study?
    a. Astronomy – Space
    b. Meteorology – Atmosphere
    c. Hydrology – Water
    d. Geology – Earth's structure

2. What are the five spheres that make up the Earth and what do they include?
    a. Geosphere – All the land
    b. Hydrosphere – All the water
    c. Atmosphere – Air
    d. Magnetosphere – Magnetic Field
    e. Biosphere – All the living things

3. What would happen if one of the spheres was eliminated from the Earth system
    a. Earth system would no longer function properly and life could not survive

4. Give three examples of science and three examples of nonscience
    a. Science – Classifying rocks by how they form, Comparing the densities of different metals, Analyzing the relationship between temperature and light intensity
    b. Not Science – Collecting rocks, Measuring the density of metal, Looking up weather data in a book

5. What is the correct way to classify things
    a. There is no correct way to classify things

6. Explain why patterns are important to scientists
    a. They help scientists make predictions

7. A system is _____
    a. A group of parts working together to complete a job

8. Give five examples of a system
    a. Solar System
    b. Ecosystem
    c. Earth
    d. Bicycle
    e. Car

9. Define a model, describe the four types of models, and give an example of each
    a. Model is a simplified view of reality
    b. Physical – Globe
    c. Spatial – Map
    d. Mental – Description
    e. Mathematical – Formula for circumference of the Earth

5 True or False Questions (1 point each)

10. Define theory, law, hypothesis, and fact
    a. Fact – Accepted or measured observation
    b. Hypothesis – Tentative explanation
    c. Theory – Well tested and accepted explanation
    d. Law – Description of natural phenomenon
11. Given an example of a theory, law, hypothesis, and fact
    a. Fact – Water boils at 100 C
    b. Hypothesis – Boys like Pizza
    c. Theory – Theory of Plate Tectonics
    d. Law – D = M/V
12. Compare theories and laws
    a. Theories Explain, Laws Describe
    b. Theories NEVER become Laws
    c. Neither theories nor laws can be proven
13. Compare hypothesis and theories
    a. Hypothesis is tentative, Theory is well-tested
    b. Hypothesis usually do not become a theory but a bunch of hypothesis together can become a theory

5 Matching Questions (1 point each)

14. Compare direct and indirect observations
    a. Direct observations we make ourselves, Indirect observations we infer from direct observations
    b. Direct observations are more accurate, more time consuming, and therefore more expensive
    c. Indirect observations are less accurate but also less time consuming and less expensive

3 Short Answer Questions (3 points each)

15. What are the three key ingredients of science
    a. Process
    b. Nature
    c. Repetition

16. List 3 science skills and give examples of how you have used them in a science class

17. STEM is an acronym for _____
    a. Science, Technology, Engineering, Math

1 Essay Question (5 points)

18. Over the last month and a half we have completed a number of activities. These included, but were not limited to, the rainbow lab, Earth system Jenga, the article summary, calculating the crust lab and poster, modeling the solar system, CTE and STEM paper, and counting rice lab. Choose your favorite activity from this unit, explain why it was your favorite, and what you learned by doing that activity (5 points).