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Earth/Space: Final Exam Review

**Important Vocabulary:**

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| **Unit 1: Rocks and Volcanoes** IgneousCrustMagmaTheoryFaultComposite coneBasalt  | SedimentaryFoldLavaAnticlineCinder coneExtrusive rockGraniteStrataMountain  | MetamorphicVolcanoSyncline Shield coneIntrusive rock Mafic Core Felsic Mantel | IgneousCrustMagmaTheoryFaultComposite coneBasaltFelsic Mantel  |
| **Unit 2: Plate Tectonics**CrustCore MantleConvection currentWegenerVolcanoDivergent Magnetic reversal | Plate SeismologyStrike/slip boundaryOcean crust Mid-ocean ridge Subduction Fault Sonar MarsupialsPlate boundary Magma  | Convergent TrenchGeochronologyGeographyRichter scaleRidge Hot spot Theory of plate  tectonics transform faultMesosaurus | Continental driftLithosphereLavaSeafloor spreadingMountain VolcanologyTransform boundaryContinental crustContinental shelfFossil  |
| **Unit 3: Sun and Solar System**ConstellationLaw of Universal  Gravitation Astronomical UnitLunar eclipsePlanet MoonComet  | Kepler’s LawsMassSolar flare Sun Orbit AxisSolar eclipseTerrestrial planet sGiant Impact Theory Meteor | SundialTritonSolar wind Gravitational Force Solar systemRotation Tide Gas planetsAsteroid Meteorite  | CoronaPtolemy modelWeight Kuiper beltPhotosphere ChromosphereAuroraCopernicus Model Sun spot Star |
| **Unit 3: Stars and Space Exploration**BrightnessRed giantTelescopeMilky Way galaxyBig Bang theory | LuminositySupergiantRefracting telescopeBlack holeDoppler shift | Main sequence starUniverseReflecting telescopeInverse square law of lightPlanetary system | White dwarfScientific notationGalaxyStandard Candle |

**Unit 1: Rocks and Volcanoes Review Questions:**

1. What is an anticline? A syncline? How do they form? Include a diagram.
2. What are the three types of rocks?
	1. Which rock is formed at extreme temperatures?
	2. Which rock is formed when molten rock cools and hardens?
	3. Which rock is formed from cemented sand and dirt?
3. What type of rock holds fossils?
4. What atom is located in the Earth’s core?
5. Know the three different types of volcanoes, characteristics, and examples of each. Study your volcano activity, quiz, and science notebook notes.
6. The type of lava may affect the shape of the volcano. Shield volcanoes are low to the ground and composite volcanoes are tall. Explain this difference using a labeled diagram. Use the terms: low viscosity and high viscosity in your explanation.
7. Which volcano is largest in width?
8. Mt. St. Helen’s is an example of what kind of volcano? What year did Mt. St. Helen’s erupt?
9. Paricutin is an example of what type of volcano?
10. Mauna Loa is an example of what type of volcano?

**Unit 2: Plate Tectonics Review Questions:**

1. Who came up with the Theory of Continental drift?
2. Explain the Theory of Continental Drift and the pieces of evidence that support the theory. (Explain at least 3 pieces of evidence).
3. What term was given to Wegener’s “supercontinent?”
4. Why do Asia, Africa, and Australia have few volcanoes compared to North America and South America? Is the distribution of volcanoes around the world random? Explain.
5. What are 3 differences between rock on the continent and rock on the seafloor?
6. What is a magnetic reversal? Which type of rocks respond to the Earth’s magnetic pull?
7. Explain seafloor spreading. Include a diagram. (Use page 11 in your science notebook if you need help).
8. Which ocean is getting larger?
9. Are rocks closest to the mid-Atlantic ridge younger or older? Explain.
10. What is the Theory of Plate Tectonics?
11. Explain the 3 types of plate boundaries (convergent, divergent, transform). Include a diagram of each to aid in your explanation.
12. What is a hot spot and how does it form volcanoes?
13. What 3 plate interactions form volcanoes?
14. Diagram the following and show how they relate. Mid-oceanic ridge, trench, oceanic plate, continental plate, convection current, mantle, convergent boundary, divergent boundary, volcano. In the diagram, show where the mantle is denser and where it is less dense. (Use your science notebook page 20 if you need help).
15. Where are convection currents located? Explain how convection currents move the tectonic plates.

**Unit 3: Sun and Solar System**

1. List the planets in order from closest to the sun to furthest away.
2. Define solar system.
3. What does the Greek word “planet” mean?
4. What is an AU and how is it define? How far is 1 AU?
5. Explain the Earth-centered model vs. the Sun-centered model. Include scientist name for each model .
6. What two discoveries did Galileo make that helped to overturn Ptolemy’s model?
7. What are Kepler’s two laws?
8. Restate the universal law of gravitation in your own words.
9. What is the force of attraction between two objects called?
10. Define orbit.
11. How far is the earth from the sun in astronomical units?
12. What is a constellation?
13. Define axis and rotation. What is the difference?
14. What is a leap year? How often do they occur? How many days would be in a leap year compared to a non-leap year?
15. Define year.
16. Define lunar cycle.
17. What is the difference between a lunar eclipse and a solar eclipse?
18. Does the Moon rotate? How do you know?
19. What is the difference between mass and weight?
20. Explain what causes the seasons.
21. Explain what causes the tides. What two forces are involved?
22. Do we always see the same side of the Moon? Explain.
23. Is one side of the Moon forever in darkness? Why or why not?
24. List the terrestrial planets. List the gas planets.
25. What is the difference between terrestrial and gas planets?
26. Explain the Giant Impact Theory? Discuss two pieces of evidence that supports the Giant Impact Theory.
27. What is the region outside of Neptune called?
28. What is the difference between a meteor and a meteorite?
29. What is an asteroid? What is the asteroid belt and where is it located?
30. What is a comet made out of? What direction does the tail of a comet face in relationship to the sun?
31. Which former planet is now considered a dwarf planet?
32. What is star? How is it different from a planet or moon?
33. The sun is made mostly of what element?
34. What two elements come together to form the core of the sun?
35. What occurs at the center of the sun to form energy?
36. Define sun spots, solar winds, solar flares.
37. What causes auroas?
38. Know the different parts of the sun including the corona, chromosphere, photosphere, convention zone, radiation zone, and core. Indicate where the hottest areas are location and where nuclear fusion takes place.

**Unit 4: Stars and Space Exploration**

1. Name the 4 categories scientists use to classify starts.
2. What are two differences between red giants and blue giants? Why are they referred as “supergiants?” Where would they appear on a H-R diagram?
3. List the following colors in order of least energy to most energy.
4. Define brightness and luminosity.
5. What is a main sequence star?
6. Define light year.
7. What does an H-R diagram used for? What is on the X-axis? The Y-axis?
8. Locate the position of the main sequence, red giants, super giants, and white dwarfs on a H-R graph.
9. What are white dwarfs? Where would they appear on a H-R diagram?
10. List the sequence of events a star goes through in its lifetime.
11. Explain how scientific notation is different from standard notation.
12. Convert 268,000,000 into scientific notation.
13. Convert 8.9 x 106 into standard notation.
14. Diagram the refracting and reflecting telescope.
15. Define universe.
16. What is a standard candle? How is a standard candle used to measure the distances from Earth to other bodies in space? What are some examples of standard candles that are used?
17. What is the Doppler Effect?
18. What is the red shift? What is the blue shift? What do they tell you about how the galaxies are moving?
19. Which galaxy do you live in?
20. What is the central black hole theory and what are the evidence to support this theory?
21. What is the big bang? Diagram the big bang including times and events that occurred during those times?