

Honors Earth Science Study Guide

1st Semester Exam 2008

Water Resources

1. How does the water cycle replenish and clean the available water on the Earth?
2. How does a change in one part of the water supply system influence a change in other parts of the system?
3. What are our community's sources of fresh drinking water, the environmental threats to the local water supply, and what is being done to protect this valuable resource?
4. How does Florida's karst topography affect the ground water system?
5. What are the best methods of water conservation that would most benefit your school and your community?

Oceans

1. How do technologies (i.e. sonar, satellites and submersibles) help scientists map the ocean floor?
2. How are the following features identified on a seafloor map:
 - Continental shelf
 - Continental slope
 - Continental rise
 - Trenches
 - Plains
 - Sea mounts
 - Guyots
 - Mid-ocean ridge
3. What are the processes that affect salinity of ocean water?
4. How does temperature vary in the ocean according to its latitude and depth?
5. How do temperature and salinity affect the density of ocean water?
6. How do wind and the Coriolis effect cause surface circulation and influence the climate of adjacent landforms?
7. Explain how changes in density cause deep ocean circulation.

8. What are three factors that affect ocean surface waves?
9. What changes occur as waves move toward the shore?
10. Based on sea surface data in the equatorial Pacific, when does an El Niño event occur?
11. How are upwelling, phytoplankton abundance and fish catches in the equatorial Pacific connected during an El Niño event.
12. What are the global impacts during an El Niño event?

Plate Tectonics

1. Identify Earth's interior layers. What are their relative sizes to each other?
2. How can speed and direction of a tectonic plate be determined from GPS data.
3. Explain the evidence that led to the hypothesis of continental drift. Why was it subjected to criticism?
4. Classify the motions at plate boundaries and label examples of each type of motion on a tectonic map
5. How would you model the interactions between plates at convergent, divergent, and transform boundaries?
6. What are the features that result because of actions at plate boundaries?
7. Compare the pattern and distribution of earthquakes and volcanic activities to plate boundaries. How would you make predictions regarding future activity?
8. Explain the effects of temperature on the density of a material as the mechanism for plate motion.
9. Compare/contrast continental drift with the current theory of plate tectonics.
10. Compare the relationship between magma composition and type of volcano formed
11. How do you identify volcanic landforms on a topographic map? How does that predict where lava flows will occur?
12. What are the causes of earthquakes?
13. Compare and contrast the various waves associated with earthquakes.
14. How can seismographic data be used to pinpoint an earthquake's location on a map.

Astronomy

1. How do the discoveries made by scientists such as Copernicus, Kepler, Galileo, Newton, and Einstein relate to our modern day understanding of the universe?
2. Explain the relative distance between planets and the sun.
3. Calculate the distance to objects in the solar system in astronomical units and light years.
4. How does Earth's motion cause day and night and the changes in seasons?
5. How do the orbital paths of objects in the Solar System differ?

6. How do S-E-M relationships produce lunar phases and eclipses?
7. How are phases of the moon and tidal patterns related?
8. How was the Earth's moon created and why is its surface different from the Earth's?