

Earth Science Final Exam Study Guide

Be able to explain the difference between theory, law, fact, hypothesis, and belief.

Explain how the universe began.

About how long ago did the universe begin?

What were the first 2 elements to form in the universe?

What element is the most abundant in the universe?

When was our solar system formed?

Explain what there was before the Big Bang.

What are the pieces of evidence scientists have for the Big Bang Theory? Make sure to explain each one.

Explain the redshift effect.

Explain what a light year is. How fast does it travel?

Why do scientists use light years when describing distances in space.

A friend says to you, "my teacher said that the big bang was a giant explosion and that the universe is the same size now as it was when it began." Do you agree with your friend? Why or why not?

What is a star?

What is the closest star to us, besides the sun, and how far away is it?

Explain what a nebula is and how a nebula is the beginning of a star.

At what point does a nebula turn into a protostar?

Why are protostars not graphed on the HR Diagram?

What needs to occur in order for a protostar to turn into a star?

Explain what nuclear fusion is.

What is a main sequence star?

Explain the balancing act that occurs in main sequence stars. Make sure to use the words; nuclear fusion, pressure, gravity and equilibrium.

What nuclear fusion process occurs in a main sequence star? A red giant? A supergiant?

How are white dwarfs formed?

Explain what a supernova is.

What is a black hole?

Why are black holes so difficult to study?

Draw and label a HR Diagram that shows where red giants, main sequence, red supergiants and white dwarfs are usually located.

What are the 2 basic properties on an H-R diagram?

Why is the surface temperature of a star so much lower than that of the core?

Approximately what percentage of stars are main sequence stars on an HR Diagram?

What kind of star is the Sun right now? What will it eventually turn in to?

Be able to explain all of Earth's spheres.

Be able to relate the sphere to one another.

What are the 4 layers of the earth?

Be sure to know different characteristics of each layer.

What are 2 sub layers of the crust?

Compare and contrast the 2 sub layers of the earth. Be sure to specifically mention the composition, density and age.

What are the 2 sub layers of the mantle?

What does lithos mean and what does astheno mean?

Where is the lithosphere located?

What is so special about the asthenosphere?

Where does Earth's magnetic field come from?

What causes earth's magnetic field?

Why is the earth's inner core a solid? Seismic Waves and Inferences About the Layers of the Earth

What are seismic waves and where do they travel?

Draw a venn diagram comparing and contrasting P waves and S waves.

What does it mean if something is reflected? What does it mean if something is refracted?

What is the main reason as to why scientists are able to infer the characteristics of the layers of the earth? Continental Drift

Explain continental drift.

Who was Alfred Wegener?

What are the 6 pieces of evidence we discussed involving continental drift?

How were fossils a key piece of evidence in supporting continental drift?

How was rock evidence a key piece of evidence in supporting continental drift?

How were glacial deposits a key piece of evidence in supporting continental drift?

What scientist suggested that the seafloor might be spreading?

Explain how scientists know that the seafloor is spreading.

What is the Mid Atlantic Ridge and where is it located?

Where are the youngest rocks of the ocean floor located?

Where are the oldest rocks of the ocean floor located?

What does paleo mean?

What does paleomagnetism have to do with continental drift?

How do scientists know that the earth's magnetic field has reversed?

In what direction are the 2 oceanic plates moving that make the Atlantic Ocean?

What is plate tectonics?

About how many centimeters do the plates move per year?

How many major plates are there?

What are the 3 types of plate boundaries

What types of landforms occur at each type of boundary?

What are the differences between the 3 types of convergent boundaries?

Be able to name a place on Earth where each of the different types of plate boundaries occurs.

What is the difference between a continental rift and an ocean ridge?

What type of plate boundary were the Andes Mountains formed by?

Be able to explain how the graham crackers and frosting model plate tectonics.

What is convection?

How was convection displayed in the demo and the experiment?

Be able to EXPLAIN how the plates move by convection using words such as heat, hotter, colder, more dense, less dense, etc. Earthquakes

What are earthquakes and where do earthquakes occur?

Explain the difference between the focus and the epicenter.

Compare and contrast the 3 different types of earthquakes.

What are hanging walls and foot walls?

How are you able to tell the difference between the hanging wall and the foot wall?

Explain which way the hanging wall moves during each of the 3 types of earthquakes.

How do scientists use seismometers to determine the epicenter of an earthquake?

What is the difference between the Richter Scale and the Mercalli Scale?

Know what the difference between a magnitude 8 earthquake and a magnitude 2 earthquake is.

What is the Ring of Fire and where is it located?

Know how to calculate where an epicenter is.