Review Questions Topic 4: Continental Drift

Define “theory” the way scientists do

How does this definition notably differ from the way we use the term in everyday language?

How does this lead to misunderstanding and confusion about scientific conclusions?

Explain how a scientific theory is a bit like a Greek temple

Why can a theory NOT be toppled by simply showing that one or a few of its supports are wrong?

Explain the “wrinkled apple theory” about the origin of the Earth’s surface features

How did early earth scientists explain that the Earth’s distribution of flat versus crumpled areas was not quite like that of an apple?

What was first noted and put into writing by Abraham Ortelius in the 16th century?

What was Alfred Wegener’s chosen career and what nationality was he?

Explain how Alfred Wegener used the ideas, first described by Ortelius, to support his argument for continental drift?

Which Atlantic landmass did Alfred Wegener notably leave out of his explanation of how the Atlantic came to be? Why?

Carefully explain how Alfred Wegener used evidence of southern hemisphere glaciations to argue for continental drift

The same rocks, of the same age are found both in South America and Africa. How did geologist explain this distribution before Wegener used it to argue for continental drift? How did his explanation differ?

How did Wegener argue that mountains chains on both sides of the North Atlantic are evidence of continental drift?

Prior to Wegener, what were the four explanations traditionally used to explain why fossils of the same species could be found on continents that are otherwise thousands of miles from each other, separated by vast ocean basins?

By the 20th century, which explanation for the odd fossil distributions across continents, was favored?

How did Wegener use, what appeared to be a random distribution of similar-aged rocks, to argue for the former existence of a single landmass

How did Wegener use the rocks to reconstruct climatic zones of this landmass?

What was the name that Alfred Wegener gave to this landmass?

Using four lines of reasoning, why did Wegener fail to convince the geological community of continental drift?

What did Arthur Holmes' "convection current hypothesis" envision about how continents might be drifting?

What particular assumptions did Holmes make about the nature of the Earth's layers, that we now know to be incorrect?