

<b>4th Grade</b>			
<b>Earth &amp; Space Science</b>			
<b>Chapter 8 Lesson 2</b>			
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273	What does the order in which model “fossils” are buried and exposed tell us about the sequence of real rock layers?	As long as nothing catastrophic moved the real rock layers around, then the oldest layers should be at the bottom.	
273	If rocks were somehow turned on their side, how would scientist view them differently?	If a scientist is sticking to the theory that the bottom has to be the oldest, then having rocks turned sideways would really mess up their understanding.	
273	Are the oldest fossils always in the lowest rock layers?	No. If scientist have not observed for hundreds/thousands of years that layers of earth have not been disturbed, then it is inaccurate to assume the bottom is the oldest.	
274	Give examples of molds and casts people use every day.	A cookie cutter could be a mold and the cookie a cast.	
274	Why are fossils only found in sedimentary rock?	Sedimentary rock is formed by pressure; so dead animals can get trapped in a layer where they petrify. The heat needed to create a metamorphic or igneous rock would destroy any animal remains, so they aren't found in those rocks.	
275	Would a Christian paleontologist always interpret fossil evidence in the same way as a scientist with a different worldview	No. Christians are free to employ pure scientific empiricism, where only observations are counted as true science, where non Christian scientist mix empiricism with rationalism and fight over “logical explanations” of cherry-picked data.	
275	How is the formation of a fossil in amber different from a mold or cast?	Plants and animals trapped in tree sap, that eventually turned into amber, were not exposed to the elements of decay. The animal or plant in amber, is the actual creature.	

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276	How would a world-wide flood be helpful in forming fossils?	Plants and animals would quickly be trapped in layers of mud. This mud eventually becomes sedimentary rock with fossils inside.	
276	In the hoodoos of eroded sedimentary rock, where would you expect to find the fossils that were buried first?	Traditionally speaking, in the very bottom of the stone column. From a Christian perspective, they all got buried at the same time and it is only density differences that separated the layers while it was all still mud.	
277	Why is it important for Christian to be careful thinkers and to study both the Bible and science for themselves?	The Bible is God's record of salvation from sin that contains tidbits of scientific data we are expected to base our faith on. It is important to study the science because "the glory of kings is to search out a matter." The more we know about our world, without resorting to human theories, the more we get to see of God's handiwork.	
277	How might the long body of a brachiosaur been an advantage as an herbivore?	It could eat leaves that grew high within the trees that no other animal could reach. Likewise, it could also reach down into the water deeper than any other land animal could find food. This means it had less competition for food.	
278	Why might the structures that some scientists have identified as feathers be something else?	Because feathers don't really fossilize. They leave cast fossils or simple imprints that show something was there, but the feather itself has decomposed leaving nothing in its place.	
278	Think about how fossils form. Would feathers be easily preserved?	No. The thin strands that make up feathers are easily decomposed. Finding fossil feathers is very rare.	
279	#2 How are trace fossils and petrification different?	Trace fossils are like footprints in mud. Petrification happens to animal bones.	
279	#3 How does this [fossils in sedimentary rock] relate to the Genesis Flood	C. Sedimentary rocks usually form in water.	

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279	#4 How are mold and cast fossils the same? How are they different?	Mold and cast fossils both tell us about ancient plant and animal life. Mold fossils however are like empty egg shells where cast fossils are like a hard boiled egg.	
279	#5 Are fossils being formed today?	Of course. With all the natural disasters we have in the world around us, plants and animals will be buried in mud that will eventually turn to stone.	
279	#6 What can you infer about what type of environment is best for forming fossils?	Fossils need natural disasters. When an animal dies in the forest, other animals and insects immediately eat it. When animals die in a swamp, they will decompose to nothing even if they are not eaten. The regular process of weathering and deposition is not strong enough to create fossils, therefore for fossils to exist, we need catastrophic change.	