

Grade 8				
Ch. 10 Lesson 3				
Earth and Space Science				
Page #	Question	Answer(s)	Links/Sources	Student Resources
387	Which type of evolution do you think is more likely? Why?	*Answers will vary, but should be supported.		
387	What characteristics make it a useful index fossil?	*Fossil A is found in all the columns but only in one layer.		
387	What is the basic claim of evolution?	Sample answer: That living organisms evolve from simpler organisms.		
387	What things have you learned that would be necessary for that claim to be true?	Sample answer: There would have to be examples that show this in the fossil record.		
387	How are microevolution and macroevolution different?	Sample answer: They differ on the scale of change that takes place.		
387	What kind of evidence in the fossil record would be consistent with this idea?	Sample answer: There should be examples the show this direct development with no gaps.		
387	What kind of evidence would be consistent with this idea?	Sample answer: Fossils should show evidence of widespread rapid burial and preservation.		
388	Why might the corresponding layers be at different depths in each location?	*Sample answer: Different elevation of the landscape		
388	How much of a 100-g sample would remain after three half-lives?	*12.5 g		
389	What the advantages of showing the decay with the use of a bar graph?	*Sample answer: It is easier to see the reduction of the isotope.		
389	How many different body plans can you describe?	*Answers will vary. Students might suggest creatures with radial symmetry like jellies (phylum Cnidaria) or sea stars and sand dollars (phylum Echinodermata) or animals that exhibit bilateral symmetry like butterflies (phylum Arthropoda), crocodiles, and humans (phylum Chordata). Sponges (phylum Porifera) have no symmetry.		
389	Why is it significant that most known body plans, as well as some that have gone extinct, are found so early in the geologic column?	*Sample answer: It is significant because this is not what we would expect to find if evolution had occurred. All the body plans with no ancestors is more consistent with the biblical account of Creation and the Flood.		
389	Why must a fossil contain organic matter for it to be dated using carbon-14?	Sample answer: Because organic material contain carbon.		
389	What other possibilities might there be to explain the presence of carbon-14 in fossils that are supposed to be millions of years old?	Sample answer: The fossils may be much younger than it appears by their position in the Geologic Column.		
390	What are some examples of data and interpretation in the song?	*Sample answer: The different creatures mentioned in the song would be data, the repeated phrase, "all life is in the ocean" reveals an evolutionary interpretation of the song.		
390	How does the Cambrian explosion contradict the theory of phyletic evolution?	*It happened in a short period of time not gradual.		

390	How does an index fossil help scientists?	*Sample answer: It provides them with the relative age of the rock layers that are found in different places around the world.		
390	Why was the word <i>explosion</i> likely used in the term <i>Cambrian explosion</i> ?	*Sample answer: The most phyla to ever occur happened all at the same time frame. It was an explosion of animals being created.		
390	Why must a fossil contain organic matter for it to be dated using carbon-14?	*Organic matter takes in carbon all through its life. For thousands of years after it dies, the carbon remains and can be used to date the fossil.		
390	Why do you think the word explosion was included in the name?	Sample answer: Because a diversity of animals appeared suddenly with not ancestors found previously.		
390	Is macroevolution's prediction of phyletic gradualism verified by the fossil record?	Sample answer: No. There is not good evidence for gradual change, there are many missing examples that would be needed to provide sufficient evidence for this.		
390	Is the evidence of found in the Cambrian explosion consistent with the theory of evolution?	Sample answer: No. The sudden appearance of diverse life forms contradicts the idea of slow gradual development.		
390	Is it consistent with the biblical stories of Creation and the Flood.	Sample answer: Yes. The sudden appearance of diverse life supports the Creation account.		
391	How might Genesis 7:21-22 be related to the fossil record?	*Genesis 7:21-22 describes the death of all air-breathing animals except in those in the ark during a the worldwide Flood. The fossil record is more consistent with the biblical account of Creation and the Flood than with macroevolution's prediction of phyletic gradualism and extinction.		
391	What does the fossil record actually show regarding simple and complex organisms?	*Sample answer: Some complex organisms existed before simple organisms.		
392	Why would macro evolutionists not expect these types of organism before the Cambrian explosion?	*Sample answer: Arthropods are too complex.		
393	How should creationists respond to the claims of scientists regarding these morphological intermediates?	*They should recognize claims about "missing links" as interpretations of data based on a naturalistic worldview and consider other interpretations that are consistent with the biblical record of Creation.		
393	How likely would it be for an entire system to evolve all at once from mutation?	*Even evolutionary scientists do not claim that evolution of an entire system all at once is possible.		
393	If it evolved only part of the way, how likely would it be to survive while the rest of the system evolved?	*A partially evolved system would not work, so it would not be advantageous to the organism. It is more likely that natural selection would select against it.		
393	How is this creature an example of a morphological intermediate?	*Sample answer: There is evidence of different animal groups on this creature like an reptile and a bird.		
393	How many times does the phrase "after its kind" or "after their kind" appear?	*Seven different times the Creation account in Genesis 1 describes God creating something "after its kind" or "after their kind"		

394	Which fossil sample is the youngest?	The fossil that appears highest up in the geologic column.		
394	What other explanations might there be for these creatures that share physical characteristics with more than one grouping of animals?	Sample answer: These fossils may demonstrate the idea of conservation of design and that the animals just display a collection of features of other animals.		
394	Do you think God might have created some animals with shared characteristics that have since gone extinct?	Sample answer: Yes.		
394	Are these data more consistent with macroevolution or Creation and the Flood?	*Sample answer: Complex creatures early in the fossil record are more consistent with the Creation account. Morphological intermediates can be interpreted as created organisms, but their interpretation as missing links assumes a degree of biological change that extends beyond the evidence.		
394	Can either macroevolution or Creation be proven scientifically?	*No. The scientific process studies things using observation and experimentation in the present. Neither Creation nor macroevolution can be observed or repeated.		
394	What role does faith play in accepting either idea?	*Going beyond the observable evidence to accept either Creation or macroevolution requires faith.		
397	What if oceanic plates were less dense than the continental plates?	*Consider showing students a video of a conveyor belt and packages being moved along it. Ask students to draw their own interpretation of the tectonic plates being pulled beneath Earth's crust?		
398	Why is looking for fossils important?	*Students may answer that it may be to help our understanding of Earth long ago, or that it may provide insights into plants and animals of today.		
398	In what ways might fossil hunting be dangerous to paleontologists?	*Students should note that areas are often inhospitable.		
	* Means the answer is found in the TE.			