SI Geology - Full Discipline Demo

Stratigraphy

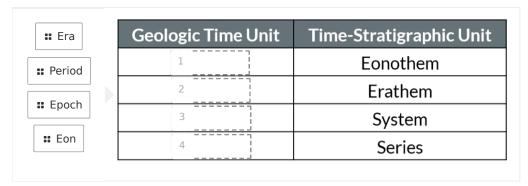
Final Report - Answer Guide

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Test Your Knowledge

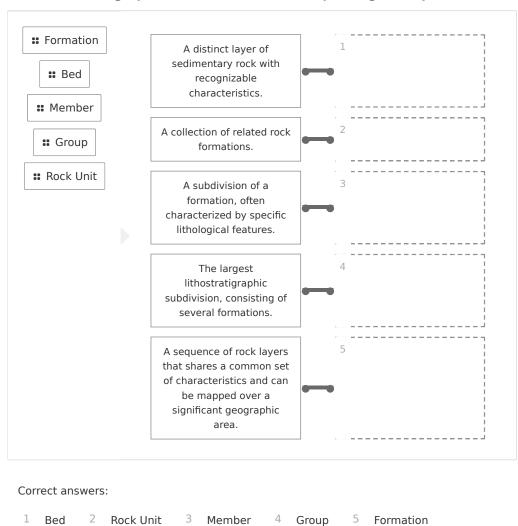
Match each term to the correct counterpart.



Correct answers:

1 Eon 2 Era 3 Period 4 Epoch

Match the stratigraphic terms with their corresponding descriptions:



Exploration

Geologists create stratigraphic columns to depict the vertical order of rock layers.

O True			•
False			

	is a body of rock which can be identified by its lithological haracteristics and stratigraphic position.	
	O group	
	bed	
	formation	✓
	member	
	Thich of the following options represents the appropriate time-tratigraphic unit for a Period?	
	Eonothem	
	Series	
	Erathem	
	○ System	~
-		
C	he Principle of Succession is a geologic law that states that fossils ontained in sedimentary rock strata succeed each other in time in a redictable and reliable manner.	
C	ontained in sedimentary rock strata succeed each other in time in a redictable and reliable manner.	~
C	ontained in sedimentary rock strata succeed each other in time in a	
C	ontained in sedimentary rock strata succeed each other in time in a redictable and reliable manner. Faunal	
C	ontained in sedimentary rock strata succeed each other in time in a redictable and reliable manner. Faunal Biostratigraphic	
со р	ontained in sedimentary rock strata succeed each other in time in a redictable and reliable manner. Faunal Biostratigraphic Vertical	
со р	ontained in sedimentary rock strata succeed each other in time in a redictable and reliable manner. Faunal Biostratigraphic Vertical Chronostratigraphic	
со р	pontained in sedimentary rock strata succeed each other in time in a redictable and reliable manner. Faunal Biostratigraphic Vertical Chronostratigraphic river is considered a depositional environment.	

Exercise 1



Would you have been able to complete the chronostratigraphic cross-section without the ash layers? Why or why not?			
Do your chronostratigraphic correlations (timelines) cut across lithology or follow it? Why is this the case?			
What type of depositional environment do you think this stratigraphic cross-section represents?			
Photo 1: Completed Columns (SAMPLE ANSWER BELOW)			
No sample answer provided			
Photo 2: Lithostratigraphic Cross-Section			
(SAMPLE ANSWER BELOW)			
No sample answer provided			
Photo 3: Chronostraigraphic Cross-Section (SAMPLE ANSWER BELOW)			
No sample answer provided			



Competency Review

different locations? Radiometric dating of fossils found within the layers. Measuring the thickness of sedimentary layers. Analyzing the color variations of rocks. Identifying the mineral composition of rock layers. Which principle is reflected by the statement that a vertical change in facies within a stratigraphic column corresponds to a lateral change in environments over time? Stratigraphy Walther's law Transgression Regression True or False? Time units are divisions of geologic time, while rock units are subdivisions of rock layers based on lithological and fossil content. True False True or False? Correlating stratigraphic layers allows us to infer the ancient geography of an area in Earth's past. True False

Which of the following methods is commonly used for stratigraphic correlation, helping geologists match and correlate rock layers across



columns?
 Determining the absolute ages of rock layers.
 Depicting the vertical succession of rock layers in a graphical representation.
 Identifying the shifts in lithologies caused by tectonic activity.
 Analyzing the mineral composition of sedimentary rocks.
Geologists often rock layers in various places and then analyze the information to learn about Earth's history and past environments.
predict
invent
None of the above
Which geological principle states that fossils contained in sedimentary rock strata follow a predictable and reliable pattern, allowing for the identification and dating of rock layers based on their fossil content?
Law of Superposition
 Principle of Faunal Succession
Law of Original Horizontality
Principle of Cross-Cutting Relationships

Which of the following tasks is associated with constructing stratigraphic

Extension Questions

Explain how geologists correlate rock layers from different locations. Provide three examples of methods they use for this purpose, and briefly describe each method's principle. (SAMPLE ANSWER BELOW)

Answers will vary.

Geologists correlate rock layers from different places using methods like fossil correlation, lithostratigraphy, and chronostratigraphy.

Fossil Correlation: Geologists match the same fossils in different rock layers to determine their relative ages. Fossils unique to specific times help identify when rocks were formed.

Lithostratigraphy: Similar rock types in separate areas suggest they were deposited around the same time. Comparing rock characteristics helps establish connections between different locations.

Chronostratigraphy: Geologists use dating techniques to find the absolute ages of rocks. If rocks with the same age are found in different places, it implies they were formed during the same time.



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