

# Pre-Visit Lesson: Pinnacles Geology

\*Use with the Pinnacles Formation [Video](#) and [Website](#)\*

**Think about it:** Do landscapes (mountains, valleys, fields, rivers, etc.) change over time or do they always look the same?

What do you think causes them to change? \_\_\_\_\_

<b>Essential Question:</b> What geologic processes are responsible for the creation of the Pinnacles rock formations?	
Question:	Notes:
<b>Source 1:</b> Use the <a href="#">VIDEO</a> to answer the questions below. <i>*Hint: Use the closed captions to help you.</i>	
How are the rocks at Pinnacles different from the surrounding area?	
What formed the Pinnacles rocks many years ago?	
Why do the Pinnacles rocks look the way they do today?	
What forms the caves at Pinnacles National Park?	
What did miners turn Pinnacles into when they did not find gold?	
What does Pinnacles National Park protect?	
How big are the California Condors?	
How long have the Pinnacles Rocks been here and how much longer until they are gone?	
What will cause the Pinnacles rock formations to disappear?	
<b>Source 2:</b> Use the Pinnacles National Park <a href="#">WEBSITE</a> to answer the questions below. <i>*Hint: Be sure to READ the diagrams.</i>	
Plate Tectonics: What do geologists believe about the Earth's crust?	
Describe the 2 tectonic boundaries that are important to the story of how Pinnacles formed.	Subduction Zones: Transform Boundaries:
Which 2 tectonic plates began subducting 60 million years ago?	1. 2.

What is the name of the mountain range this subduction formed?	
What caused the "Pinnacles Volcanic Field" to form?	
How old do scientists believe the Pinnacles Volcanic Field is and WHERE did it form?	Approximate Age: Location of formation:
How many eruptions created the layers of volcanic rocks?	
When the Pacific Plate began to grind against the N. American Plate, what type of tectonic boundary formed?	Type of tectonic boundary: Name of the fault:
What is the San Andreas Fault zone?	
How far north has two-thirds of the Pinnacles formation moved and why has it moved?	
Will the Pinnacles rocks continue to move north? What is the rate?	
What caused the Pinnacles rocks to look the way we see them today?	
Will the Pinnacles rocks look the same in the future? Why or why not?	

**Summary:** *What geologic processes are responsible for the creation of the Pinnacles rock formations?*

About 60 million years ago, the \_\_\_\_\_ tectonic plate began to subduct under the \_\_\_\_\_ tectonic plate, resulting in the formation of the \_\_\_\_\_ Mountain Range. Then, approximately \_\_\_\_\_ years ago, the \_\_\_\_\_ Volcanic Field formed due to multiple \_\_\_\_\_ from multiple \_\_\_\_\_. Next, when the \_\_\_\_\_ Plate met with the North American Plate, a \_\_\_\_\_ boundary formed, resulting in the creation of the \_\_\_\_\_ Fault zone. The San Andreas Fault has moved about \_\_\_\_\_ - \_\_\_\_\_ of the Pinnacles Volcanic Field 195 miles \_\_\_\_\_ to where we find it today. It will continue to move north along the fault at a rate of approximately \_\_\_\_\_ per year. Finally, \_\_\_\_\_ from water, wind, and ice has shaped the Pinnacles Volcanic Field into the rock formations we see today.

**Word Bank:** San Andreas, Farallon, 23 million, north, eruptions, one inch, erosion, transform, Coast, Pinnacles, volcanoes, Pacific, two-thirds, North American