

Different versions of student companion materials for Mt. Etna VFE

Version	Inquiry Description	Sample companion questions
1	VFT-Guided with very low learner self-direction	<p>Stop #1: Sketch what you observe in the indicated box. Using the information found on p. 10 of your textbook, describe why it has the shape it does.</p> <p>Stop #2: Describe the sample you observe (indicated by an arrow). Using the magma identification chart provided, what does it tell you about the volcano?</p> <p>Stop#3: Describe the landscape features you observe (indicated by arrows). Are the natural or manmade? ___ Why do you think people live near volcanoes based on what you observed at this stop? (You may want to visit <a href="http://vulcan.wr.usgs.gov/LivingWith/PlusSide/framework.html">http://vulcan.wr.usgs.gov/LivingWith/PlusSide/framework.html</a>)</p> <p>Stop #4a: Describe the sample you observe (indicated by an arrow). Using the rock identification chart provided, what does it tell you about the volcano?</p> <p>Stop#4b: Sketch the shape of the sample you observe (indicated by an arrow). Using the information provided on p. 10 in your textbook, what does it tell you about the volcano?</p>

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2	VFE-Guided with low-moderate learner self-direction	<p>Use p. 10-12 in your textbook and your igneous rock identification chart.</p> <p>Stop #1: Is this volcano active or inactive? _____ How could you tell? Based on its topography, what can you infer about how it formed?</p> <p>Stop#2: What do you observe at this stop? Describe sample C. What can you infer about gas content of the magma from sample C? What does sample C tell you about the explosivity of the volcano? What evidence from sample C indicates its explosivity level?</p> <p>Stop #3: What do you observe here? What does that tell you about the reasons humans choose live next to a volcano? Do you think they should? ___ Explain.</p> <p>Stop #4a: Approximately how steep is the slope of the volcano? _____degrees Based on its slope, what type of volcano is it? _____ or _____ Based on its slope, how did the volcano form? Describe sample A: What can you infer about the composition of the magma that formed this volcano? How did you know that?</p> <p>Stop #4b: What type of volcanic feature is sample B? How did it form? What does that tell you about how this volcano formed?</p>

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3	VFE-Coupled with low-high learner self-direction	<p>Before you start: Looking at Mt. Etna from a distance, sketch its profile. (include a scale)</p> <p>Stop #1: Draw the profile of the volcano again, this time including the features (data) you observe at the peak of the volcano at this stop.</p> <p>What can you infer from this profile?</p> <p>How could you test that?</p> <p>Stop #2: Sketch and describe your sample.</p> <p>What can you infer from your sample?</p> <p>What evidence did you use?</p> <p>How could you further test that?</p> <p>Stop #3: Infer why the landscape looks the way it does.</p> <p>Defend your claim with evidence from the location.</p> <p>Stop #4a: Sketch the outcrop. Include scale, sampling location, and sample description.</p> <p>What can you infer from your outcrop and your sample?</p> <p>What evidence did you use?</p> <p>How could you further test that?</p> <p>Stop #4b: Sketch the outcrop. Include scale, sampling location, and sample description.</p> <p>What can you infer from your outcrop and your sample?</p> <p>What evidence did you use?</p> <p>How could you further test that?</p>

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4	Guided with high learner self-direction	<p>What is the geology (topography, rock type, features) of this area?            How did this volcano form?            What is likely to behave like in the future?            How do humans interact with this landscape?</p> <p>In your report, include any observation, inferences, and suggestions for further data to be collected (including a rationale why that data should be collected).</p>

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5	Open with high learner self-direction	<p>Explore this area and create a geologic analysis of the area. In your report, include any observation, inferences, and suggestions for further data to be collected (including a rationale why that data should be collected).</p>

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6	Guided problem-based with high learner self-direction	<p><b>Prompt:</b> The town of Taormina in Sicily has hired you to investigate their local mountain for volcanic activity and potential hazards to their town. Your report should address their concerns:</p> <ul style="list-style-type: none"> <li>– What type(s) of volcano is it?</li> <li>– How violent has it been in the past?</li> <li>– How violent will it be? What hazards could they expect?</li> <li>– Is it currently active?</li> <li>– Does it provide any visible benefits to the population?</li> </ul> <p>In your report, include any observation, inferences, and suggestions for further data to be collected (including a rationale why that data should be collected).</p>