

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 http://vulcan.wr.usgs.gov/LivingWith/PlusSide/framework.html)</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?</p> <p>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?</p> <p>How did this volcano form?</p> <p>What is likely to behave like in the future?</p> <p>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>Prompt: 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"> – What type(s) of volcano is it? – How violent has it been in the past? – How violent will it be? What hazards could they expect? – Is it currently active? – Does it provide any visible benefits to the population? <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>