

Fillmore Glen State Park Field Experience- TEACHER PLAN

Objectives:

1. Students will use GPS technology to mark points of geological or biological significance that they have studied.
2. Students will follow GPS headings to find significant areas already marked by the teacher.
3. Students will collect weather data at marked locations along the Gorge Trail. This data will include canopy measurement, dew point, relative humidity and cloud type.
4. Students will identify sedimentary rock layers formed in shallow vs. deep seas.
5. Students will calculate the change in elevation from the start to the end of the trail.
6. Students will practice their ELA skills.
7. After the trip, students will build a Google Earth tour of their path complete with their data and pictures.

Prior to the Field Experience:

A team of two teachers travelled to Fillmore Glen State Park to hike the Gorge Trail and locate study areas. A total of 10 locations were marked for study.

Description	Latitude N	Longitude W
1. Log Cabin/ Plaque (take elevation reading) ELA Writing	42.69	76.42
2. Cow Shed Trail (Tully limestone cap rock) Weather Station #1 ELA Writing	42 41.886	76 24.769
3. Open area at the top of the stairs on the Gorge Trail (near bathrooms) Weather Station #2	42.69749	76.41497
4. Tree Stump along trail Weather Station #3	42.69616	76.40469
5. Rock Wall lining the trail (acid test for limestone)	42.69590	76.40375
6. Kettle Pool Drawing Station	42.69604	76.40215
7. Sedimentary rock layers (identify shallow vs. deep sea sections)	42.69547	76.40008
8. Tectonic Plate Collisions ELA Writing	42. 41.718	76. 23.938
9. Pinnacle Overlook Bridge Weather Station #4	42.69487	76.39857
10. Top of the Gorge (take elevation reading)	42.69508	76.39964

Pictures	Latitude N	Longitude W
Tully limestone cap rock	42 41.886	76 24.769
Shagbark hickory tree	Multiple places	
Geotropism	Multiple places	
Limestone fracturing near bridge #4	42 41.858	76 24.527
Kettle Pool	42.69604	76.40215
Waterfall	42.69592	76.40195
Perpendicular fractures	42 41.718	76 23.938
Boulder in the middle of stream	42.69510	76.39889
Black Shale	42. 41.861	76.24.465

ELA Activities

1. Point #1 What is unique about Millard Fillmore's birth?
What jobs did he hold before becoming president?
2. Point #2 Pretend that you are stranded on the Cow Shed trail without a working GPS. Look around you. What do you see, hear and smell that could help people locate you? Write one paragraph describing your surroundings.
3. Point #8 What evidence can you see that supports the idea that this gorge was formed by tectonic plate collisions? Take pictures to support your answer.

Drawing Activity

1. Point #6 Here you will find a kettle pool. It is a plunge pool created from an ancient waterfall that has been eroded away. Draw a picture of what the area around the kettle pool looks like now and another picture of what you think this part of the gorge might have looked like 500 years ago.

Materials: GPS for each group of students, weather station data sheet, digital camera, ruler, small bottle of acid, sling psychrometers, thermometers, student data sheets

Weather Station Data Sheet

	Station #1	Station #2	Station #3	Station #4
GPS Unit				
Air Temperature				
Dry Bulb Temp.				
Wet Bulb Temp.				
Relative Humidity				
Dew Point				
Canopy Measure				
Cloud Types				

Names of Group Members _____



Student Sheet for Fillmore Glen

Directions:

1. You will be travelling along the Gorge Trail with a GPS unit in a small group with one teacher. You will be given a sequence of points to find as well as a list of job assignments.
2. At the start and end of your hike, record the elevation on your data sheet.
3. You will be taking pictures and marking the locations of specific objects that you have been given a description of. (Scavenger Hunt)
4. At four locations, marked in your GPS, you will record the weather data on the data sheet.
5. You will perform the following activities: ELA activities at Points 1,2 and 8; a drawing activity at Point 6; an acid test for limestone at Point 5; and you will identify sedimentary rock layers at Point 7.
6. Upon completion of the field trip, you will build a Google Earth tour that shows all the points you travelled to as well as the pictures of the Scavenger hunt items.

My group will be finding the GPS locations in this order (only 1 of these will be circled):

Start at 1 and end at 11

OR

Start at 11 and end at 1

Scavenger Hunt Items to be taken pictures of.

Item	Check when found	Latitude and Longitude	
Tully limestone cap rock			
Shagbark Hickory tree			
Geotropism			
Kettle pool			
Waterfall			
Perpendicular rock fractures			
A boulder in the middle of the creek			
Limestone fracturing near bridge #4			
Black Shale			

Point 1- At Point 1 record the elevation at this point of your hike.

Elevation = _____

Use the plaque to answer the following questions.

1. What is unique about Milliard Fillmore's birth?

2. What jobs did he hold before becoming president?

Point 2- This is Weather Station #1 (record data)

After taking down your weather data, pretend that you are stranded on the Cow Shed trail without a working GPS. Look around you. What do you see, hear and smell that could help people locate you? Write one paragraph describing your surroundings.

Point 3- This is weather station #2 (record data)

Point 4- This is weather station #3 (record data)

Point 5- Acid Test

What type of rock makes up the rock wall along the path? To find out if it is limestone, place 3-5 drops of acid on the rock. Describe what you see.

Think back to the acid rain lab we did in class, is this rock limestone?

Point 6- Drawing Station

Here you will find a kettle pool. It is a plunge pool created from an ancient waterfall that has been eroded away. Draw a picture of what the area around the kettle pool looks like now and another picture of what you think this part of the gorge might have looked like 500 years ago.

Now



500 years ago



Point 7- Sedimentary Rock Layers

Look at the wall of rock around you. It is composed of many sedimentary rock layers that formed underwater. Sometimes the water was very shallow, while at other times it was very deep. When the water was deep, the layers would be thick. When the water was shallow, the layers would be thin.

Find a section of the wall containing thick layers of sedimentary rock. Measure the distance from the bottom of 1 thick layer all the way to the top of the next thick layer. _____ cm

Find a section of the wall with thin layers and measure a 4 cm thickness with a ruler. Try to count how many distinct layers you can see in 4 cm.

_____ layers

Point 8- Tectonic Plate Collisions

What evidence can you see that supports the idea that this gorge was formed by tectonic plate collisions? Take pictures to support your written answer.

Point 9- This is weather station #4 (record data)

Point 10- At Point 10 record the elevation of this point of your hike.

Elevation= _____