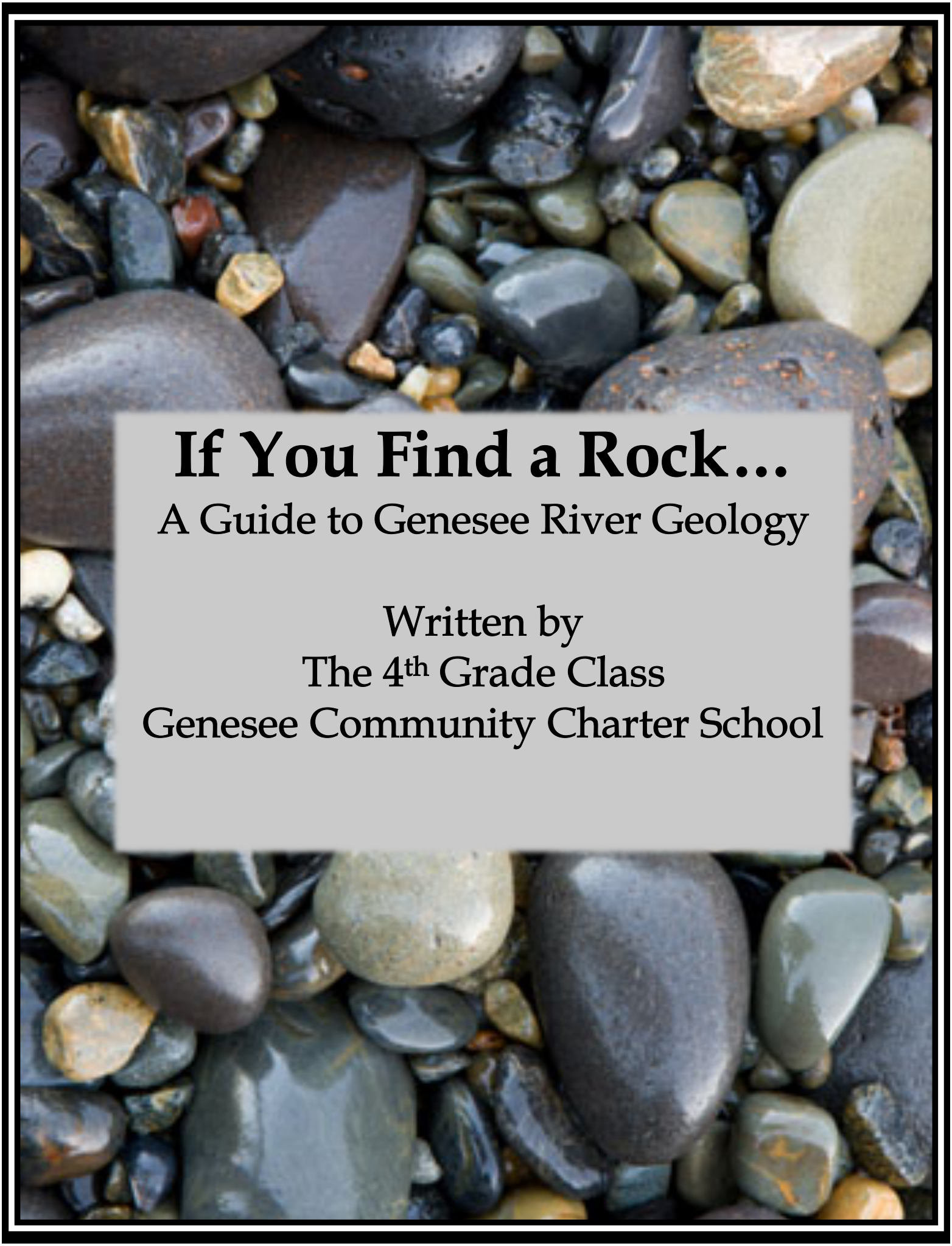

If You Find a Rock…

A Guide to Genesee River Geology

Written by
The 4th Grade Class
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Gold, PA (Source)

By Ian

If you find a rock in one of the springs at Mr. Slaybaugh's property in Gold, PA, then you are at the source of the Genesee River. The source is the beginning of the river. You may be surprised if you go there because it doesn't really look like a river at all. The source is very, very, very small! When I got there I was surprised to see it was so small because I thought it would look like the beginning of the Erie Canal. Some of it was just a few puddles. It also isn't as beautiful as other places along the river. It's kind of swampy there.

The source actually starts underground. Water that is underground is called groundwater. When the ground is jammed with water it bursts out and forms a spring. In Gold, PA it trickles out through a downhill meadow and forms a small stream. Make sure you wear boots because it's very, very muddy there. I made the mistake of not wearing boots and I almost sunk down!

If you visit the source, put an apple in the water. It will be carried away. The river gets bigger and bigger and bigger. Maybe after a few days, the apple will end up in the mouth of the Genesee River at Lake Ontario.

So, what rock will you find?

Waterfalls

Bouncing down
The waterfall
White misty magic
Creepy caves
Hiding mysteries
Lost treasures
Left behind
By the waterfall

Gold, PA (Store)

By Luisa

If you find a rock at the Gold Store, it may just be a little pebble. This area is not very wide or deep. However, it is wider than the source. It is only three feet deep. It is so shallow you can see the riverbed. The river banks in this area are covered in plants. Did you know that the river crosses under a bridge as it travels downhill from the source? The river goes through a big tube underground from a street. You know, if the river does not go through the tube, the water will eat away the dirt and minerals causing erosion. If the water eats away all the dirt and minerals, the street will collapse. And that would not be good.

Did you know that the river flows downhill? Many rivers start at the top of a hill or mountain. The Genesee River flows from south to north. Most of you know that Pennsylvania has many hills and mountains. That's one of the reasons why the Genesee River flows north. The elevation changes along the river. Gold, PA is higher in elevation than Lake Ontario.

Did you know that tributaries are one of the reasons why the Gold Store area of the Genesee River gets wider? It's true! Tributaries are creeks and streams that flow into a larger body of water like rivers. The tributaries add water to the river and push along the edges eating away at the edges, causing erosion. Erosion makes the river wider. So now you know more facts about the Genesee River at the store in Gold, Pennsylvania.

So, what rock will you find?

Movement

A river going towards
The end
Extraordinary bends
Splashing
Rippling
Running
Dropping
Wearing away
All through the way
You won't reach
The end
Until another day

Gazdag Road, PA

By Adrian

If you find a rock that is smooth with ripple marks on it, it might have come from a riverbed. And if it has layers in it, it might be a sedimentary rock. If you found this rock where the Genesee River gets wider it might be from a place called Gazdag Road. There are many steep hills at Gazdag Road.

When layers of sediment form, water pushes down on them until they turn into rock. That happens over millions of years. More and more layers of sediment form until they harden and become sedimentary rock. Sedimentary rocks can have fossils. There could be layers of plants, crinoids, trilobites, and much more.

So, what rock will you find?

High Falls

High Falls
Diving into his
Cool plunge pool
Rippling
Eroding
Full of sound waves
He is so noisy
That you can hear him
Scream
At the cold wind
He is digging
For treasure
In his plunge pool
Do you think
He will find treasures?
Big rocks
Little rocks
Fossil rocks
Do you think
You have treasures?

Genesee, PA

By Crystal

If you find a rock at Genesee, PA that is round and has layers, it might be a sedimentary rock. A sedimentary rock is a rock that has layers of sediment from the water. When sediment drops to the bottom of a river and hardens, it turns into a massive sedimentary rock with hidden magic.

But those rocks can shrink. Don't forget about erosion. Erosion is the breaking of rock. Rocks can erode faster in rushing water because the rocks could hit the banks or other rocks and crumble.

It's all about the water. Water does the eroding. The banks of the river erode. Also, the property starts to erode. People need to provide extra rock so the water won't erode the bridges and roads. In Genesee, people put rocks on the sides of the river under the bridges to protect the bridges from erosion. There are so many rocks you can find!

So, what rock will you find?

Earth's Clock

Rows and rows
A rocky wall
Looking at the falls
Days and years
Time ago
This wall wasn't the same
Fossils you will find in many of the layers
This wall may be weak
But the magic is strong

Erosion

By Duane

If you find a rock that is round and smooth, it has been eroded. Erosion is when wind, water, or ice eats away at rock. Some eroded rocks are egg shaped. When they are round and egg shaped water may have shaped them over time. Some eroded rocks can have sharp corners and jagged edges. Ice or wind can erode rocks too.

Erosion changes the shape of the land over thousands of years. Water takes rocks, loose soil, and sand and carries it to different places. The rocks are deposited in a place where the water is moving slowly.

Erosion happens on the outside of a meander. Where can you find the fastest eroding place along the Genesee River? In Cuylerville, of course! Over the past 100 years, it has eroded so fast it washed a road away. That is pretty fast in geologic time!

So, what rock will you find?

River Story

Water falling
Loud and fast
Water jumping
Over rocks
Rocks blocking
The way
Rocks getting eaten
By water
Water splashing
Into the river
And bouncing back
Into the air

Deposition

By Ronan

If you find a rock that is round and smooth, you have found a rock that has probably been deposited there by the river. This is called deposition. Deposition is when sediment is carried by water or wind and added to another place on land.

Where do you think deposition happens? When there is a meander or curve in the river, the water moves slowly on the inside. The water carries sediment and drops it on the inside as it moves along.

Where can you go along the Genesee River to see deposition? Cuylerville is north of the Mt. Morris Dam. The river deposits sediment that looks like a sandy beach on the inside of a meander. Oramel Hill Road is south of Letchworth State Park. The river is dropping rocks along the inside of a meander.

So, what rock will you find?

Mist

Waterfall
Mist rises
At the meeting of a river
Steam rising
From the river
Water flying away
As something
Man calls mist

Wellsville, NY

By Rachel

If you find a rock in Wellsville, New York it may be a small rock that is smooth and has been stirred up in the water. If you are truly in Wellsville, you shouldn't see strata. If you don't know what strata is - strata is a huge wall of rock layers, full of hidden secrets.

Wellsville is located very close to Scio, New York, Graves Crossing, and Shongo. There is a tributary there called Dykes Creek. A tributary is a stream or creek that feeds into a river. There is a dam there. It is only four or five feet deep. Why is it you ask? Well, I'll tell you why! The dam is there to slow down the water so they could gather it and use it at a water treatment plant. The flow of Dykes Creek has no major effect on the river.

There are cement walls on the outside of the river that were installed after the flood of 1972 for flood control purposes. Also, the river was moved to the east a little to keep the Genesee away from the local hospital. The town of Wellsville put the cement walls on the outside of the river because the outside of a meander erodes quicker than the inside. Think of a pinwheel. The inside is going slower than the outside. The outside is going faster than the inside.

So, what rock will you find?

This is the Genesee

Chipping away
slowly
Rocks
Of all sizes
Picking up rocks
And depositing them
Twisting
Around meanders
Eroding all the rocks
Traveling through
valleys
Changed
By a glacier
Shaping time slowly
Flowing
Instead into a bay
Now
Into something that
we call
Lake Ontario

Oramel Hill Road, NY

By Caleb

If you find a rock at Oramel Hill Road, it may be a huge rock on top of a tower that looks like fingers reaching out from underneath. Is this a giant hand? It may look like it, but it isn't. They are giant rock towers covered with wire called gabians. The gabians are at least 6 feet high. I don't know because I haven't measured, but I still know they are at least 6 feet high. Humans made gabians because the river was so crazy that it almost destroyed a house that was on the outside of the meander. The gabians help protect the house from eroding because when the water hits them it slows down and deposits sediment that it is carrying. When you look at them you think they are hills, but they are not. They are in disguise! The gabians look like hills because all th n e sediment got dumped on them.

Look around you. You will see THOUSANDS of rocks that got deposited from the river. You might notice that some of the rocks are very smooth. That is because when the rocks get carried along the Genesee River they might have gotten smashed against each other and all the jagged edges got cut off. You will probably notice that some rocks have fossils in them! That is because when a sea animal died a long time ago, it fell on the sea bed and the sediment covered it. The sea animal dried out and walla, you have a fossil!

Look at the other side of the river. You will see a river bank that looks impossible to climb. The river bank is only about 4 feet high, so you might be wondering why I said that it was impossible to climb. I said that because it looks like it will crumble any second. When you look more closely at the river bank, it looks like dirt piled up. But, really the river bank is made of shale. Shale is very soft rock that breaks very easily. When shale gets wet it seems like it's mud. It's that soft! Even water can break it. It's actually on the outside of a meander at Oramel Hill Road, so it is getting eaten away.

So, what rock will you find?

Eating Away

Water
Eroding away rock
Over time
Leaving a huge wall of sturdy strata
Ready to make more

Waterfall

Misty air
Rippling water
Mountains crumpling
Under the ledge
Powerful water
Falling
Into the deep dark
Plunge pool

Fossils

By Miles

If you find a special type of rock, you might have found it near the Genesee River. I'm sure the rock would be just as big as both of your hands. If you happened to break open the rock, you might find cool things inside. There might be different patterns, which have been imprinted within them. These designs or patterns might actually be fossils.

Fossils are living creatures that died and got compressed into sedimentary rock. It happened over thousands and thousands of years. It has to be at least 10,000 years old to be known as a fossil. Fossils are all different sizes.

Sometimes when creatures or plants die they rot away to nothing. But if the temperature and light are just right, and the living creature is buried quickly and a fossil could be formed. Fossils are formed if the sediment around the dead creature gets thick and turns to stone.

Fossils can be found anywhere there used to be water on the earth's surface. The rock wears away because of wind and rain, and the fossil can then be seen. Fossils can be found in the Genesee River Gorge. Most fossils are animals that once lived in water.

A deep sea once covered this whole area many millions of years ago. Fossils are formed in sedimentary rock, which are formed from erosion and found under the layers of rock near the Genesee River. There is a lot of sandstone near Rochester, which has hardened over time to form fossils.

So, what rock will you find?

Upper Falls – Letchworth State Park

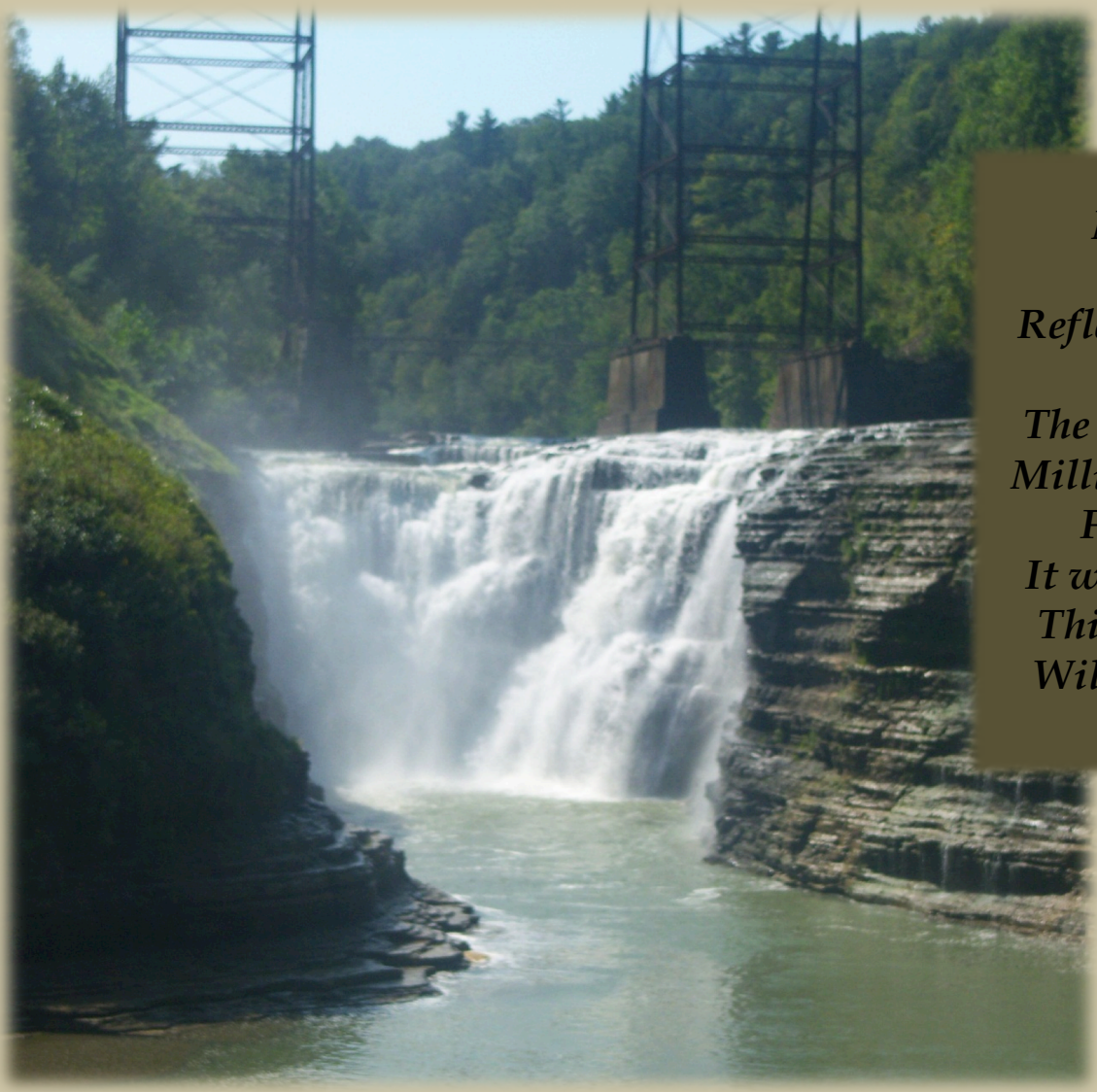
By Shawn

If you find a rock in Upper Falls in Letchworth State Park with thin layers that you can break in your hands, you have found shale. This shale is black and brownish in color. If you break it you could find something special inside like a very thin fossil.

Upper Falls is gravity defying. It is 71 feet high. As the water flows it hits the plunge pool and undermines the gorge wall behind it. Undermining occurs when water from a waterfall hits the plunge pool and flows back up against the gorge wall.

The gorge walls are humungous. There are millions of layers of shale. Many layers of rock and sediment are called strata.

So, what kind of rock will you find?



Mystery

Reflective water
Hitting
The plunge pool
Millions of years
From now
It won't be here
This waterfall
Will disappear

Middle Falls - Letchworth State Park

By Kaydra

If you find a rock at Middle Falls in Letchworth State Park, you might find shale under your feet and in the strata. It might have come from the Middle Falls waterfall. The rock will be easy to break and it looks pail gray like clay. Did you know that the Middle Falls waterfall is 101 feet tall? Its crest is 200 feet tall. Its plunge pool is really deep. The mist looks like a ghost floating high up.

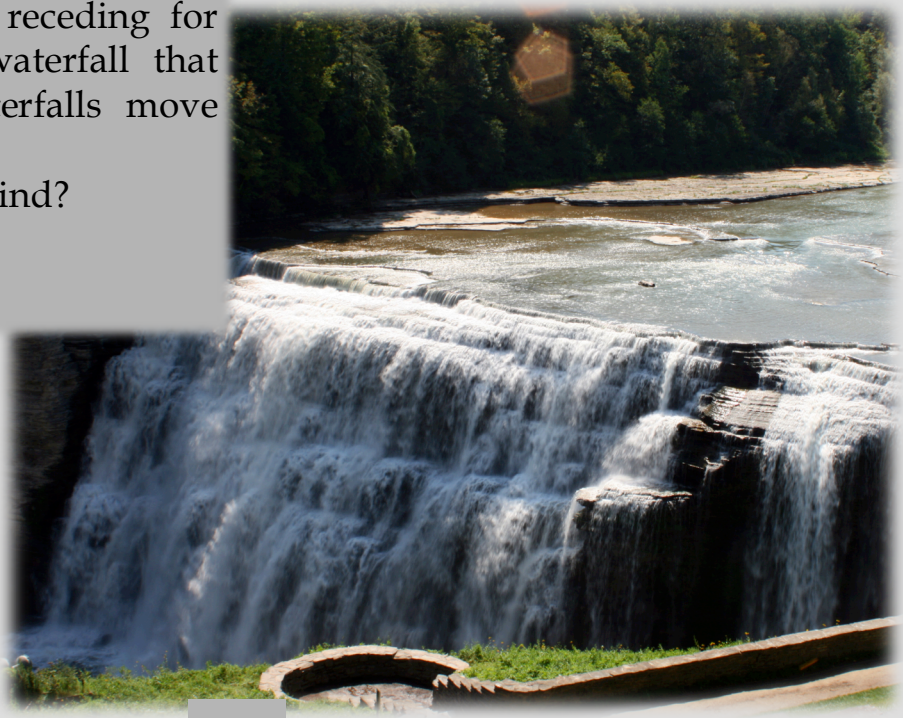
The water rushes down into the plunge pool and comes back up. This is called undermining. The plunge pool gets deeper and deeper. The soft rock erodes faster than the hard rock. The water washes up against soft rock and it erodes away. When the soft rock has eroded enough the top layer can't hold itself up so the hard rock falls.

Did you know that Middle Falls waterfall recedes? It's been receding for years! It's not the only waterfall that moves backward. All waterfalls move backward.

So, what rock will you find?

River

Water drifting
Leaves sitting still
Shallow water
Wind blowing
Mist in my face
Rushing water
Racing to its destiny
Water trickling
Ever so sweetly
Logs waiting for the
Right time
Rocky river beds
Sitting ever so still



Lower Falls – Letchworth State Park

By Derick

If you find a rock from Lower Falls in Letchworth, you probably found shale. Shale is a type of rock. Anyone can break it, even a baby. You can put your hand on the gorge walls and break off a piece of shale. Shale is so slippery when it's wet. You can slip on it and fall. The shale gets wet when it is misty. When it is wet, the shale forms into clay.

You may be hiking in the woods at Letchworth on a trail with a lot of shale, and when you turn you'll see a dazzling waterfall. Lower Falls is 55 feet high. Be quiet and listen as hard as you've ever listened before. Splash! Ka-boom! After the big fall, the water splashes over rocks and looks like mini-falls. At Lower Falls, you'll see a bridge. You can stand on it to look at the waterfall.

While you're walking you can see bumpy, rocky layers. These layers are called strata. As the river got older, it dug out the land. This is erosion. The strata can help to explain different time periods like the Ordovician, Silurian, and Devonian time periods.

So, what rock will you find?

Waterfall Story

Mist goes on me like rain
Coming from a noisy waterfall
Fast rapids splashing
Water on logs
Pouncing over the edge
100 miles per second
Landing in a hole
Of deep mist

Strata

By Leanna

If you find a rock in Letchworth State Park, look at the color. What kind of rock is it? It's a bird…it's a plane…no….it's a rock! But not any rock…you and JUST you have found the one and the only sedimentary rock.

Sedimentary rock is made of sediment. Sediment is bits and pieces of rock and sand that is found in rivers and streams. A lot of sediment settles at the bottoms of lakes too. It settles into layers and gets hard over thousands of years.

Sedimentary rock is actually found in strata. Strata are layers of sedimentary rock. This can be seen in gorge walls. Eventually, the gorge wall gets very tall. Have you ever seen a gorge? It is huge! Strata can be different colors depending on the type of sedimentary rocks that are in it. Sometimes animals and plants that lived long ago died in the layers of sediment and became fossils.

So now all I would like to ask you folks out there….what rock will you find?

My River Poem

Shiny river
Glowing in the sun
Trees swaying gently
Gracefully
In the breeze

Great Bend – Letchworth State Park

By Emma

If you find a rock at the huge Great Bend in Letchworth Park, it might be the rock that fell off the gorge and rolled into the river on 9/14/11. The 4th grade class saw that erosion happen! Great Bend is in Letchworth State Park and some people call this park the "Grand Canyon of the East." That's a cool name for a place along the Genesee River! In the slow, shallow moving water, there is a very big meander. That's why it's called Great Bend.

The river is known for its beautiful gorge that reaches so high I can barely see. The gorge is so high because the river was once that high, but the water eroded the ground so it kept gradually moving down. You would have to be very tall to see the whole river there because the gorge that you stand on is so tall. It blocks your view almost entirely. When you think about how many years it took to get that gorgeous gorge you probably think it took forever! If you do, you're right! It takes millions of years to get a tall gorge like that.

Up at the top of the greenery covered hill is a rock wall for visitors that provides a nice view. If you look past the sparkling water you will see a gorge (in other words what the river is known for) all covered in jagged rock that is layered with pounded sediment. These layers are called strata. It is sort of hard to see because it's covered in greenery.

The thing I like about Great Bend is that almost every angle is a different view. So now that you have all my information, what rock will you find?

Water Drops

Floating from the ground far below
Open your arms
The breeze takes them high
Watch those little drops fly
On your legs, your arms, your face
As the water pounds ground
Put your arms down
Walk away
Remember to come back another day