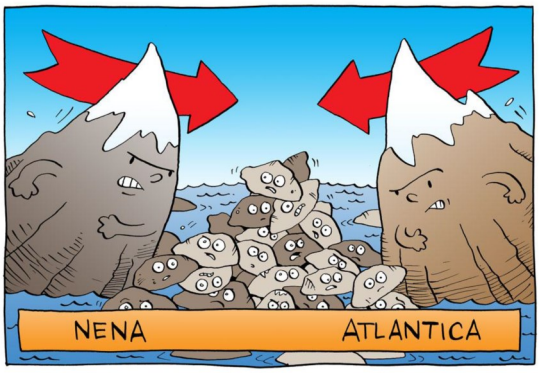
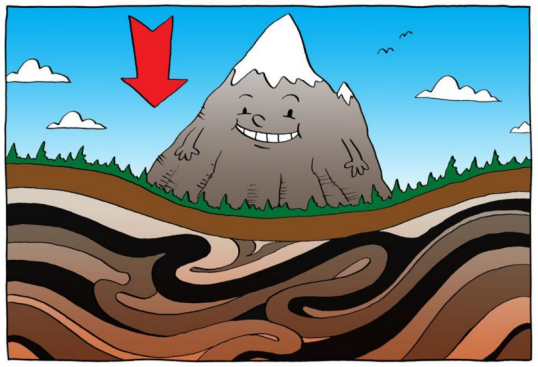
# Rocking & Rolling

GEORGIAN BAY BIOSPHERE
MNIDOO GAMII

1.3 billion years ago, in what is now the Georgian Bay Biosphere, two continents were moving together on a collision course. These weren't continents we have today, continents are always changing. In between those two land masses, one called *NENA* and the other *Atlantica,* were thousands of islands.




As they collided, the islands were pushed together and forced upwards. The *Grenville Mountains* were created; mountains that could rival the present day Himalayas in size. About 25 kilometres under the mountains, heat and pressure were twisting and banding the rock.



Where are those mountains today? They've been knocked down by the agents of weathering, creators of soil: *water* taking apart the rock drop by drop; *sand* using its abrasive power; *frost* getting into cracks and wedging rocks; *heat/cold* expanding and contracting rock causing breaks; *lichen* using enzymes to eat away rock; *plant roots* squeezing into cracks, pushing rock apart. Weathering took those mountains down to a flat plain!

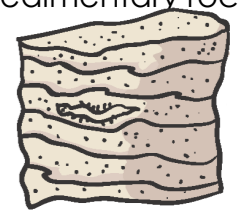

From about 400-500 million years ago, the area was covered by a warm sea. There were many cool creatures swimming in those waters, but where is evidence of these animals? Where have their fossils gone?

Mother nature's bulldozers, *glaciers*, swept through this area three times. These mighty forces were over a kilometer thick, scouring the landscape and dumping most of our soil in southern Ontario.

As the glaciers began to melt they left smooth, scoured rock outcrops; sandy beaches; boulders scattered through forests; and the largest freshwater group of islands in the world… the 30,000 islands of the Georgian Bay!

**Culinary Class Rocks**

Did you know there are three types of rocks? Each is created in a completely different way!

| Igneous Rock | Sedimentary Rock | Metamorphic Rock |
|---|---|---|
| Made from the cooled lava of volcanoes. Deep in the earth, rocks are melted and become magma. When magma comes out of a volcano it's called lava. | Made from sand and other materials called sediment. Sediment builds up in layers, each layer adding more pressure to the bottom and over time turning into rock! | Made beneath the earth's surface, immense heat and pressure creates ribbon like layers. This is the most common rock type in the Georgian Bay Biosphere! |
| Melt some chocolate in the microwave or a pan, ask an adult for help! Spoon the melted chocolate into candy molds or onto a plate. You've made chocolate igneous rock! Once cool, name a weathering agent as you break up the chocolate rock.  | Use several crackers and cheese slices, these represent your sedimentary layers. Stack them together as high as you can, then add some pressure to the top. You're turning the bottom layers into sedimentary rock!  | Take three pieces of toffee, and warm them in the palms of your hands. Then press them together and twist to make one giant toffee. This large toffee represents a metamorphic rock.  |

**The Friendly Rock Walk**

Everyone loves to collect rocks! But if we take too many rocks there starts to be less to enjoy. Plus, some species which depend on rocks in their habitat, like the *five-lined skink*, would suffer.

1. Go on a rock walk with your family!
2. See if you can fill an empty egg carton with a rock collection.

3. Make your rock collection friendly by selecting small rocks, less than the size of your hand, and only collecting the most important ones.
4. Check your collection once in a while to see if any of rocks can be put back outside.

A five-lined skink, Credit: R. Bolton

**Rock Knock Down**

Inuksuks are the historical rock messengers of Northern Canada. These landmarks were built by people as a message: come this way. Today, people build inuksuk's for decoration. A local animal would prefer these rocks to be on the ground for shelter: *five-lined skinks*, Ontario's only lizard and a *species at risk*.

Time to be an *agent of weathering* yourself! Give a skink a hand by taking these structures down. Always ask permission if it is on someone's property.