

# Stonehammer Geopark™ Challenge

No crests are available for this challenge.

Please choose 3-6 items from different categories to complete your Stonehammer challenge.

If you live within the wide boundaries of the Stonehammer Geopark, you are hereby challenged to "adopt a geosite". There are 60 Geosites documented so far by the Stonehammer Geopark, meaning areas with interesting rock formations. There are countless more in all the corners of the Geopark boundaries. Find one that you can spend time in and choose some of the following or your own ideas on how to adopt the site. Use it as a base for some of the activities in this challenge. Have fun and enjoy time outside in a Stonehammer Geopark place to call your own. If you live outside of the Stonehammer Geopark, maybe you'll be inspired to find your own natural place with interesting rocks to call your own.

## Arts

### Art

- Do an art project with stones and pebbles that you find, piling them up and arranging them or gluing them together. Plain white glue works for lighter, flatter rocks. Try adding shells, acorns, birch bark, feathers, seaweed, and other natural materials.
- Make a pet rock. Give him/her lots of character! very young: Go to a rocky beach or safe roadside site and pick one favourite rock. Compare how the other rocks you see are different and how they are the same as yours. Wash and dry it or brush it clean with a microfiber cloth. Glue googly eyes on rock with white glue. Draw the rest of a face with markers. Name your pet.
- Paint a rock to look like an animal, scene, flower etc. Work with the natural shape of your rock to make it even better! (is there a part that looks like a chin, ears, a bunny tail?) Helpful hints: clean your rock well first. You can use nail polish, tempera paint, or acrylic paint. If you want to have better, brighter results with washable paint, then prepare the rocks beforehand by painting them all white with any thick paint such as art acrylic or household latex paint. Varnish afterwards.
- Use a traditional method of making art using stone: Advanced: do a sculpture in purchased soapstone or Indiana limestone with hand tools or a dremel tool. You could practice first carving bars of soap. Experiment with ways to make a lithograph. Draw a design on a flat stone surface in grease pencil, lipstick, oil pastels or a similar medium and print it onto paper.
- Visit a museum or public place such as New Brunswick Museum, Saint John Trade and Convention Centre, or Quispamsis Arts and Culture Park that has stone sculpture on display . Learn about the type of stone used and how the artist made the work. Be sure to look at it from all sides.

### Drama

- Act out one of the "human stories" from the Stonehammer Geopark. Advanced: research an early pioneer of geology such as Will Matthew, Marie Stopes , or Abraham Gesner and write a monologue for an actor to portray him or her. Very young: a group can do a guided drama together while reading "Fossil Hunter: Will Matthew and the Giant Trilobite" by Randall Miller. Read the story together and

then imagine something that might happen now. For example, pretend to find the first dinosaur fossil in the Stonehammer Geopark! Jump around with excitement! Get your hammer and carefully tap it out of a big rock face. Carry the heavy stone to the museum. Or do a freeze tag game where you have to scuttle low on the ground like trilobites and scrunch into a burrow when tagged. When everyone is tagged, the "it" has fossilized all the trilobites!

- Make up a way to show the violent earth science processes of the Geopark in drama: the opening and closing of the Iapetus Ocean and the opening and spreading of the Atlantic Ocean; the glaciers melting and dragging across the landscape; the rocky terranes tearing off continents around the world and slamming together to form the folds, upheavals, and ancient mountains of the Geopark; erosion of cliffs from the pounding of the waves on the shore.

### Creative Writing

- Write a story, poem, play, or blog post about a Stonehammer Geopark topic of your choice. Some suggestions to get you started:
  - What was it like when your part of Stonehammer Geopark was at the equator? Describe the typical day in the life of a lizard 300 million years ago.
  - What was it like 100 years ago when 11 year old Will Matthew discovered the first giant trilobite fossil?
  - Write about a family enjoying the Stonehammer Geopark today.
  - Does one of the rocky landscapes in the Stonehammer Geopark inspire you? Write about what you see.
  - What fossils will be left behind from our era? Write about them being discovered in 50,000 years.

### Photography

- Use your creativity to capture the beauty of stone somewhere in the Geopark. Advanced: be sure you focus well on the rock surface. This is a good time to practice with manual focus and f-stop, since your rock is staying still! As well, if you have a macro setting on your camera, can you capture crystal structure in a picture? Very young: try making paper and crayon rubbings of different rock outcroppings you can find on a beach walk or hike. Is your rock rough or smooth?

### Visual literacy

- Look out for rocks! During one day, note down every time you see something made of stone. How long is your list? Advanced: can you even begin to list all the things you use in a day that contain products of mining? From the calcium carbonate in your toothpaste to the graphite in your pencil, to the potash that fertilized your bread, this is going to be a long list! Very young: look all around your house, meeting place or class for something that is made of stone. Look at different materials and learn to recognize which ones are stone.
- Go for a walk in the Trinity Royal Heritage District of Uptown Saint John. Look way up and stop at all the buildings that have stone ornamentation. Advanced: Look up Acanthus leaves before you go. Hunt for Acanthus leaves carved on the buildings of Trinity Royal. Reward yourself with a treat when you find your third leaf!

- Over time, make a virtual collection (in photos or notes and drawings or your favourite way to keep track) of rock formations in as many colours as you can find: try to slot in one for each of the colour families of the rainbow.
- Collect a range of colours in small stones and display them in water or rub them with a little oil to enhance their colour. Display in a pleasing way, or put on a small sand tray to make a zen garden.
- Look at rocky outcroppings you can find at the Geosites (information pages for each are in the download centre of the Stonehammer Geopark website) and around the Stonehammer Geopark. Can you see a face, an animal, or a recognizable shape outlined in the rocks? Draw it and name it!  
Advanced: research the traditional names of some rock faces you are familiar with. Do you have a sugar loaf, minister's face or castle rock near you?

#### Cultural Uses of Stone

- Find your favourite stone sculpture on a building or freestanding somewhere indoors or outdoors within the Stonehammer Geopark and sketch it.
- Find ornaments or decorations carved from stone in the City, Towns, or Villages in the Stonehammer Geopark.. How long ago was it carved? Is it still in great condition or does it need some repair work?  
Advanced: research restoration methods for stone buildings, such as Dutchman Repairs.
- Find a monument made of stone in the Geopark. What does it commemorate? How long ago was it mounted? Look in King or Queen Square in Saint John or in your local area. Very young: Find a stone statue. Does it show a person, a thing, or a shape? Walk around it, touch it, try to pose the same way. Draw a picture of the statue and/or model your own statue out of clay or playdough.

## Earth Science

### Geology

- Learn about geology on the web, from a book, in the classroom or at home. You will find lots of useful links on the Stonehammer Geopark Website Student and Teacher tabs. Be able to describe one of the following processes (advanced: develop a model or visual aid to show):
  - Plate tectonics Continental drift
  - Opening and closing of oceans
  - How igneous rocks were formed
  - How metamorphic rocks were formed
  - How sedimentary rocks were formed
  - How fossils are made
  - Erosion
  - Find and photograph yourself with one or more of the following anywhere in the Stonehammer Geopark (for help finding them, use [www.earthcache.org](http://www.earthcache.org))
  - A fossil

- A volcanic sill
- Folded or tilted sedimentary layers
- A visible fault line
- Something eroded like a cave, a "flowerpot rock" or a cliff
- Evidence of a glacier's violent movement, like a scrape in a rock or a deposited boulder (glacial erratic)

### Industry

- Minerals in your life: Some of the historic and present industries within the Stonehammer Geopark boundaries that rely on rocks are: mining for graphite and potash; quarrying granite for building and lime for cement. You might just be inspired to enter the Where Challenge
  - <http://www.earthsciencescanada.com/where>.

### Classifying and Testing Rocks

- Use a rock collection you already have or get outside and collect as many different rocks as you can find. Lay them all out where you can see them well. Decide what characteristics they have. Group them according to your own classification system.
- Advanced: learn more about how geologists classify rocks.
- Get out your rock collection! Scientists test rocks for their age, how they were formed, what they contain, and more. Industry looks for minerals to mine in certain rocks. You can learn more about the properties of the rocks you have by testing them.

### Global Network

- Use [www.globalgeopark.org](http://www.globalgeopark.org) to find other Geoparks in the Global Geopark Network. Find:
  - One that you think is most like Stonehammer Geopark
  - One that you would most like to visit
  - One that is farthest away from us (hint: use latitude and longitude and a little math to figure out our "opposite" spot on the globe and find the park closest to that spot!)

### Tourism

- You've been hired! A cruise ship is coming to Saint John and a family of 4 with \$200, an adult couple with no money, and a group of 20 with \$1000 are looking for a day experiencing the Stonehammer Geopark! Plan a one day outing for one or more of these groups.
- Participate in one of the Stonehammer Geopark Operators' Experiences and Adventures yourself or with your unit, group or class.

### Earthcaching

- Go on an earthcache or geocache! You can go on your own with a smartphone or GPS. Some great ones to start with are called Kennebecasis Formation (found in Tucker Park in Saint John) or "The Reversing Rapids Gorge: Where Terranes Meet." Or you can go on a paid, guided program with DayTripping at Rockwood Park, one of the Stonehammer partners.

### Preservation

- Do a garbage pick-up blitz at a geosite. Remember to wear gloves and be safe.
- Advanced: learn about environmental threats to the landscape within the Stonehammer Geopark boundaries.
- Advanced: find a geosite that you'd like more people to be able to visit. Do your own safety audit and note down what improvements would have to be made to make it safer for visitors.

### Mapping

- Find where you live (or where your class or group meets) in the Stonehammer Geopark. **Range of Sites**
- Photograph yourself or your mascot in 2 or more different Stonehammer Geopark Geosites. Challenge yourself to get to as many as you can!

### In-depth knowledge of one site

- Choose your favourite Geosite and visit it during 2 or more different seasons. In each season, what is a special thing you can do there?

### Active Living

- Canoe, kayak, hike, swim, bike, snowshoe, ski, or get out in nature in your favourite way in the Stonehammer Geopark. Paid programmes are available with several Stonehammer Geopark partners: Find them in the "Stonehammer Experiences" section of the Activities tab at [www.stonehammergeopark.com](http://www.stonehammergeopark.com)

### Wildlife

- Go birdwatching
- Follow tracks at your favourite site in the Stonehammer Geopark. Can you find homes made by wildlife using rocks? (Remember not to go into bat caves due to the spread of fungal infection).