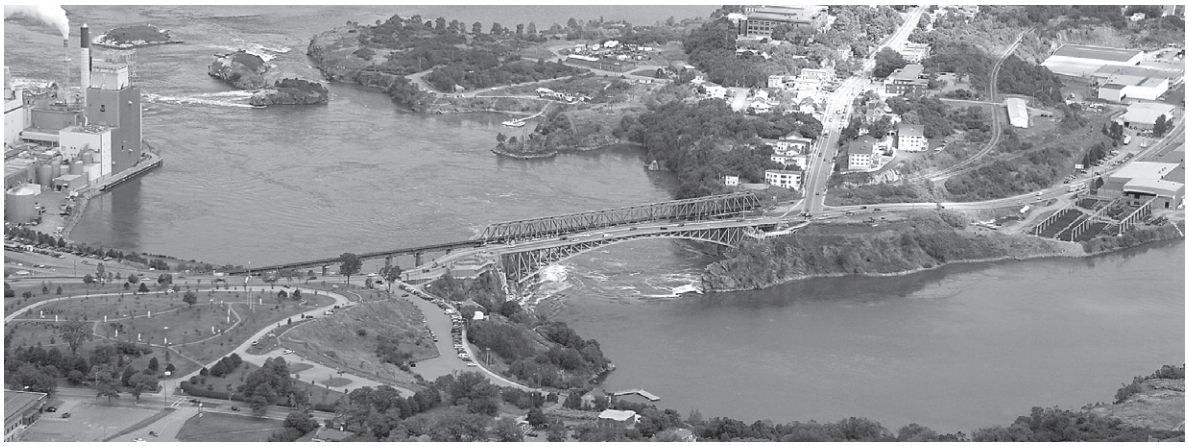
United Nations Educational, Scientific and Cultural Organization

Stonehammer UNESCO Global Geopark

REVERSING FALLS RAPIDS
Student Sheet

DRIFTINGAPART

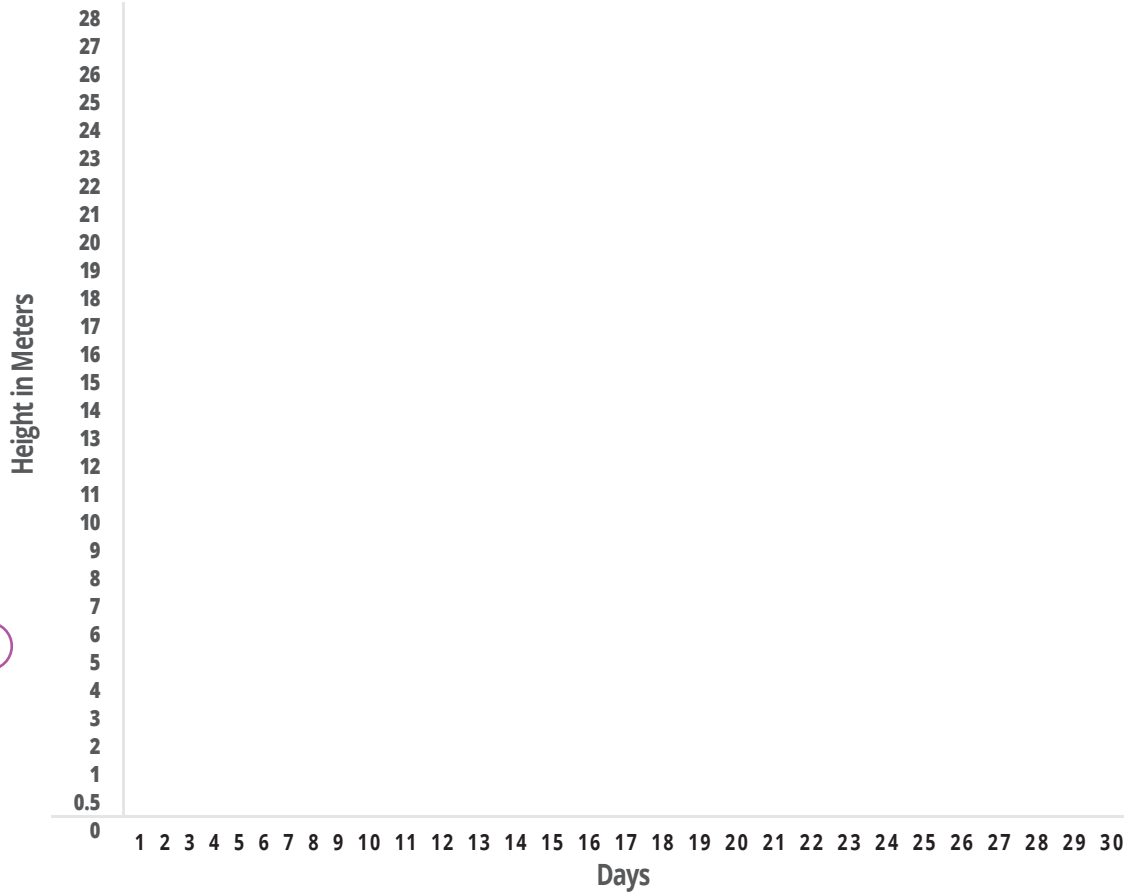
STONE HAMMER



Student tasks for Reversing Falls Rapids:

A **Graph the high and low tide measurements and moon phases for the next complete lunar cycle to observe the effect of the moon on the size of the tides**. Make your starting day the date of the next new moon. Plot two lines on your graph, one connecting each day's high tides and one for each day's low tides. Look for a pattern corresponding to moon phases.

Moon Phases



General instructions to students:

1. Note the main RISKS at the site when you arrive, especially tide times and falling rocks.
2. Respect the geological code of conduct at all times; do not feed or disturb wildlife, close gates, do not remove rocks/fossils or sand from the site.
3. Before leaving for the site ensure you have suitable clothing and footwear and the equipment to record your field observations:
   a. Pencils
   b. Clipboard
   c. Task sheet
4. Stay close to your teacher/supervisor at all times.
5. Try and complete your observations in as much detail as possible. Listen to the teacher as they explain what you are looking at and ask questions if you are unsure about any aspects of the site.

B

Looking out from Wolastoq Park, the Reversing Falls Bridge, or the Saint John Skywalk, draw a map of the water's path. Draw what the water levels and rapids look like at: high tide, slack tide, and low tide. Next, use your tide table to predict slack tide (the period of calm required for boats to safely pass): for low slack, add 3 hours and 50 minutes to low tide. For high slack, add 2 hours and 25 minutes to high tide. Say you could only visit between 9am and 4pm. Select the next date you could choose to see each phase of activity at Reversing Falls Rapids: High, slack, and low tide.

High Tide:

Slack Tide:

Low Tide:

Visit Date: _____

C

Listen to Gwen Bear's telling of "Koluskap and the Giant Beaver" from the New Brunswick Museum virtual exhibition "Koluskap: Stories from Wolastoqiyik."

http://website.nbm-mnb.ca/Koluskap/English/Stories/story2.php

Map the locations she mentions. Note that the written transcript has footnotes naming each place.

Map Locations:

D

Glacier experiment: After the last ice age, a glacial moraine dammed the Saint John River at South Bay and it found its way to its current location. Perform an experiment using cornstarch and water to mimic the consistency and movement of a glacier.

Use this model to observe how the glacier moved sediment over to make the moraine that still exists today along Manawagonish Road in Saint John. You can use corn starch, water, waxed paper and gravel to model how glaciers move.

Start by placing a fairly firm golfball sized mixed corn starch blob on the waxed paper. Keep adding to see how it moves.
Explain what happens when you place the gravel on the outer edge or "snout" and top of your model glacier.

Observations:

E

Observe the cliffs from the viewing gazebo at the end of Harbour Passage or the Saint John Skywalk. Using the Reversing Rapids Bedrock Geology Map, sketch the contact you see between the Precambrian rock from proto-South America (Amazonia) and the Cambrian rock from proto-Africa (Gondwana). You can see both types of rock on each side of the river, and the contact is right at the bridge on the east side and under the Saint John Skywalk on the west side.

Observations:

F

Fossil task: *Trilobite*. This drawing of a trilobite fossil was made approx. 130 years ago of an important find by Saint John youth Will Matthew. He found this fossil in the Cambrian rock formation that extends into Reversing Falls. As an adult, Will Matthew went on to have a career as a palaeontologist at the Museum of Natural History in New York. It is one among hundreds of type fossils held at the New Brunswick Museum (a type fossil is the definitive example of an extinct species). Paleontologists from around the world come here to study these and the many other fossils collected here. Please label the parts cephalon, thorax, pygidium, and the three lobes of this trilobite.

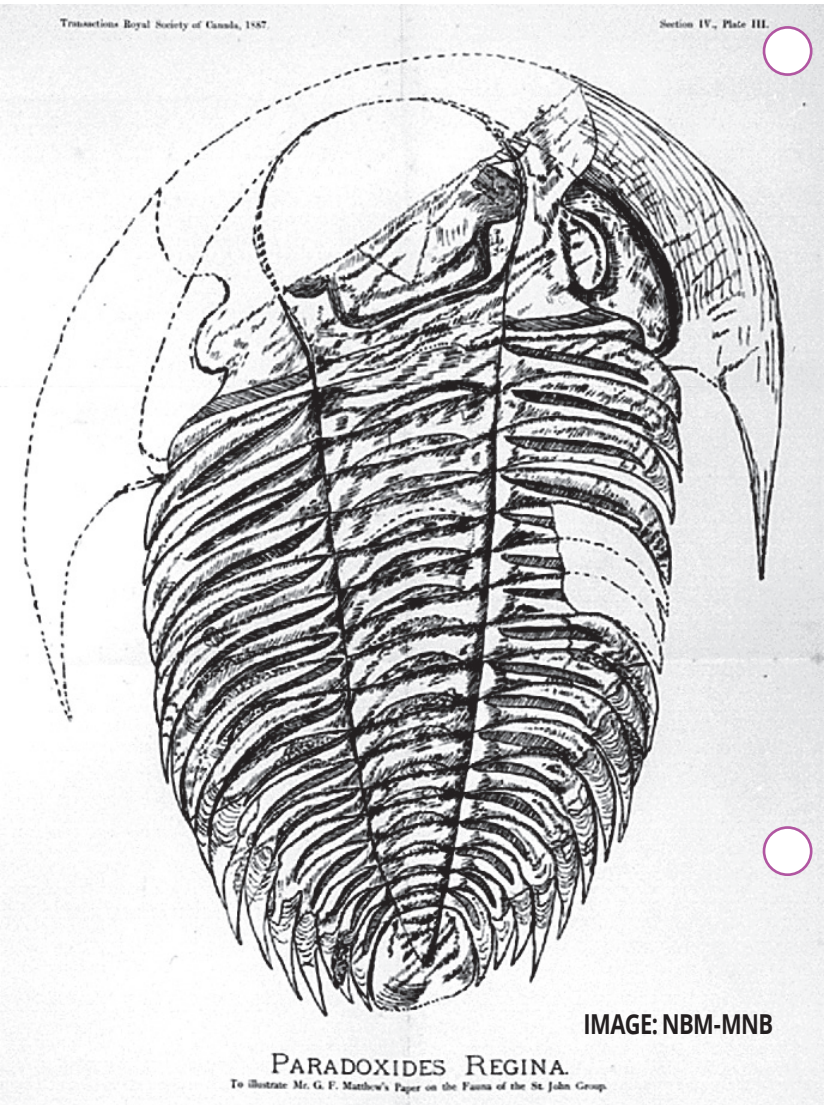


IMAGE: NBM-MNB

G

Choose a research topic to present to the class during your visit to Reversing Falls Rapids: wildlife: harbour seals, cormorants, eagles, striped bass, shad; industrial history: log drives, graphite (plumbago) mining, salmon fishing, ship building, lime kilns; current industry: Irving Pulp & Paper Ltd., tourism, fishing; physics: how tides work. Make notes here and be prepared to make a two-minute talk on your topic.

Topic Name: _____

Observations: _____

Research Notes: _____

Relationship To Reversing Falls Site: _____

Talking Points For Presentation: _____