

## Teaching earth science using big ideas

Toon Pronk

*Geological Surveys Branch, New Brunswick, Department of Energy and Resource Development, P.O. Box 6000,*

*Fredericton New Brunswick E3B 5H1, Canada <[toon.pronk@gnb.ca](mailto:toon.pronk@gnb.ca)>*

Teaching earth science with all its multi-disciplinary processes and classifications can be an intimidating endeavor for many teachers. At the same time, people's natural curiosity about their natural surroundings makes earth science a perfect entry point into the sciences. The principle that rocks and minerals have to obey rules of physics and chemistry allows you to introduce some of the science concepts at a very early age. Children's innate desire to understand will take over from there. A 5-year old quoted in Jay Griffiths "A Country Called Childhood" says that "Stones are the most interesting things in the world". If we can hook into that curiosity and passion, we may not only spur some young people into becoming (earth) scientists, but we will foster 'earth science literacy' in the population at large. People may recognize the interconnectedness of the rocks and soils we walk on and how we could live sustainably on planet Earth. Using the Big Ideas in Earth Sciences concepts developed by the Earth Science Literacy Initiative (funded by NSF), you can use large concepts to draw your students in and then zoom in on closer-to-home processes, events, and features. There are many ways to do this: with proven concepts such as 'Cosmic View - The Universe in 40 Jumps', or using thought-provoking questions like 'how many earth movements can you think of?' and 'what are the causes and the consequences of each of these movements?' For ideas you can visit the Big Ideas website for guidelines, videos, etc., or draw on your own experiences or those of colleagues. Once you draw attention to the links between geology and processes that happen at the earth's surface and endeavors such as land use and city planning, people in general become interested in the underlying principles that govern these links. Finally, you can view our natural environment as a big, wide-open outdoor classroom. As earth scientists we have a responsibility to share our knowledge with the general public, teachers, and students of all ages.