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‘Sand on a sill’ – International collaborative research project: An Australian perspective

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During the International Earth Science Olympiad in Brazil, discussions about implementing the ‘Sand on a sill’ Earthlearningidea activity^[1] occurred between teachers from Australia, Germany and Malawi. This presentation describes the experience of the author in conducting the project with students from two different contexts in Australia.

The ‘Sand on a sill’ activity is particularly appropriate for international collaboration because it is a discussion-based activity, focussed on rock cycle processes, that can be run by any teacher for any age of pupils in any classroom around the world. The evaluation process encourages teachers to conduct action research inquiring into their students’ learning and the effectiveness of their teaching, enabling insights to be shared with colleagues from other countries.

This presentation will focus on the results from a Year 12 Geology class from the Australian Science and Mathematics School in South Australia. For this group, the activity was used to support the revision program for the final subject examination. The other results that will be presented are those from the 2015 Australian Earth Science Olympiad summer school participants. In this case, the activity involved students recording their discussions in the form of a story. This was an introductory activity conducted before any teaching of the geosphere topics and was designed to assist the students gauge their pre-existing knowledge of rock cycle processes. The same activity was repeated after the topic had been taught. The students’ stories were evaluated using a text coding process. In both cases a 5 question multiple choice pre- and post-test based on questions validated in past Geology examinations in South Australia was administered to assist the measurement of the growth in students understanding of rock cycle processes.

This educational research is being carried out to test a number of theories which will be presented at the launch of the ‘Sand on a sill’ project at the 35th IGC in Cape Town. This particular research supports two of the theories:

- Pupils that have been taught about the rock cycle perform the task better than those who have not
- Pupils who have been taught about the rock cycle refer to the rock cycle and use rock cycle terms; those who have not been taught about the rock cycle, do not refer to these terms.

The author is keen to share her experiences and work collaboratively with others to develop the activity further.

References:

[1] ‘Sand on a sill’ on the Earthlearningidea website:
http://www.earthlearningidea.com/PDF/219_Sand_on_sill.pdf

