

## Learning of 'geological formation' for elementary school children by the Geological Museum, AIST: Experiment of sedimentation

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The Geological Museum offers an education program entitled 'lecture of geological formation', which supports the science education in elementary schools in Ibaraki Prefecture. This program includes experiment of sedimentation, lectures and worksheets that encourage careful viewing on the exhibition. This presentation explains the experiment of sedimentation.

A 2m-long water channel, made of acrylic plastic, is used for the experiments. This channel has some special designs to demonstrate the formation of river terrace by the global sea-level changes. A widened part in the lower-end allows wide stacking of the sediment, and detachable end-partition enables lowering (and even climbing) of the water level.

At the beginning of the experiment, we asked to children as follows. 'This channel simulates a river flowing down to the sea. Do you think where the transported sand will stay on?' They usually answered as it would be in the sea. However, it trapped in the mouth of the river. I asked them again to watch floating sand carefully, and answer why the sand was trapped in the river mouth. In most case, some children find that the current speed of river water is faster than sea water. River-delta deposits have accumulated in the river mouth by intermittent supplies of lumps of sand, We explain features of lamina and flat plain formed on the river-delta deposits.

After the lower channel are filled with the sand (assuming river-delta deposit), we start to explain what will happen when the global 'cooling' occurs as it was in the ice age. Then we move back to the channel and start to lower the water level, resulting in erosion of delta and formation of river terrace. We hope children recognize that the formation process of river terrace in their home town is essentially same as they saw in the experiment.

This experiment is unique in simulating terrace formation controlled by the global sea-level changes. We believe the experiment should be very impressive for school children, and even for teachers. Such coastal and river terraces are very common landscapes in Kanto plain, and they may know well about the local landscapes including terrace, lowland and slopes connecting terrace and lowland. We believe our experiment can connect the local knowledge of children and the global knowledge of the climate change.

Number of schools experiencing our program in 2008 is 19, and it is not so far from the acceptable limit in the museum. Our next challenge is to develop new experiments for classroom, and to open training course on experiment and sedimentation processes for teachers.