Proposal for the Elementary School Science Class Function of Running Water Adopting Selective Sorting

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It was newly added to the 2008 elementary school teaching guideline that the size and shape of riverbed clasts change between upper stream and down stream. It is well known that clasts in the upper stream are more angular and larger and clasts in the down stream are more rounded and smaller. It is now understood that either breakdown/abrasion or selective sorting caused these phenomena. In the elementary school, however, the former function is generally taught in classes rather than the latter one. Actually the sentences explaining that the riverbed clasts decrease in their size and obtain their roundness due to abrasion during downstream transportation, resulting in emplacement together with soil along riverside are seen in the science textbook of the elementary school.

It is newly demonstrated in the paired sedimentological work (presented in this meeting) along the Omoi River that the selective sorting is a main function for riverbed clasts as a reason getting smaller and more rounded downstream. In this work, we tried to make a new class plan of function of running water. The content essence of the new class plan is as follows;

1. Present the pictures showing the riverbed clasts remain at their site under usual flow conditions. Also let pupil image downstream transportation of clasts at the time of flooding.
2. Experiment the flowing model; place various sizes of clasts at one spot, flow a bucket of water at a burst, and confirm that larger clasts remain in the upper stream and smaller clasts were transported.
3. Experiment the shaking of a PET bottle that contains artificially broken down fragments and a small amount of water.