

## Working Session

### What Counts as Multiplicative Thinking in Younger Students?

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When the Project Group, Understanding of Multiplicative Concepts met in Hiroshima, Japan last year the following questions emerged as in need of further study:

- If repeated addition is not multiplicative thinking, when does a child's understanding of multiplication operation become multiplicative?
- Where is the line between additive and multiplicative reasoning?

This working session will provide an opportunity for mathematics education researchers who are interested in these questions to develop criteria for identifying a child's actions as multiplicative rather than additive.

The group will examine data from student interviews focused on multiplicative reasoning and discuss how the data does or does not support an interpretation of multiplicative thinking. The coordinators will provide transcripts, interview protocols, and samples of written responses from their research with younger students for the group to consider. Participants are also encouraged to share episodes from their research into multiplicative thinking with the group to further extend our thinking on the topic.

Based on our analysis it is proposed to redesign the tasks to better probe young students multiplicative thinking. Participants who are interested will be invited to use these tasks with students in their various locations over the coming year and collaborate on further analysis of young students' multiplicative thinking from different countries and cultures to highlight similarities and differences.