

FOCUSSING ON MENTAL ARITHMETIC

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Description of the topic

Today, there are some interesting tendencies to be observed in primary school mathematics education in many countries. First of all there is a growing tendency to postpone or even abolish the teaching of standard written algorithms. Instead, there is a growing focus on the establishment of early number sense and on the development of mental strategies (mental arithmetic) as central topics for the mathematics curriculum. This is not only taking place within the field of numbers up to 100, but also within the field of numbers up to 1000 and, with ‘nice numbers’, above 1000. Secondly, there is growing attention for estimation and the development of estimating strategies as a vital part of the curriculum. And thirdly, the use of pocket calculators, especially with larger numbers and decimal numbers, is becoming more and more common in the higher grades of primary school. Altogether this means that developing number sense and mental strategies are becoming more and more the heart of the curriculum.

Activities

In this working session we focus on mental arithmetic and work on important characteristics of the learning and teaching of mental arithmetic as an essential part of the new mathematics curriculum in primary school. During the two 90 minutes slots of the session the participants will do several activities, including:

- Analyzing and discussing typical mental arithmetic problems as they occur in recent textbook series from various countries
- Analyzing and comparing students’ work and assessment results in the field of mental arithmetic in various countries
- Analyzing and discussing videotapes and interview protocols of the learning and teaching of mental arithmetic
- Mapping the changing place of mental arithmetic in the primary school mathematics curriculum in different countries
- Analyzing and constructing games that can stimulate the development and flexible use of mental strategies

People from several countries will inform the participants of the working session about the ‘state of the art’ in their country and will provide the participants with recent materials from their country. The aim is to analyse and compare developments in different countries, to reflect upon these developments and to envisage possibilities to stimulate and coordinate these developments.