

## CERME 14: Thematic Working Group 02

### Arithmetic, Numbers and Operations

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#### Scope and focus of the Working Group

Working Group 2 is a forum for presenting and discussing research and development in the teaching and learning of arithmetic, numbers and their operations through activities. The various topics include whole numbers, integers and rational numbers, as well as representations and problem solving using numbers and operations related to each of these domains.

The scope of the TWG comprises kindergarten to 12th grade, and emphasises

- research-based clarifications of domain-specific concepts and goals,
- analysis of domain-specific learning processes and learning outcomes, and
- innovative approaches for designing meaningful and rich learning environments and assessments.

#### Call for papers and poster proposals

TWG 2 invites submissions of substantial research-based proposals (theoretical, methodological, empirical or practical) from a wide range of perspectives, including cognitive, socio-cultural and developmental ones. We especially welcome contributions (papers or posters) related (but not strictly bounded) to the following issues:

- Developing a deep understanding of arithmetic, numbers and operations.
- Conceptual understanding and procedural skills for learning numbers and operations.
- Developing number and structure sense as a foundation for flexibility and mastery.
- Problem solving in learning and teaching arithmetic.
- Innovative approaches for teaching and learning arithmetic (particularly in heterogeneous classrooms and inclusive education).
- Developing an understanding of the different number systems' structure.
- Using tools (e.g. technology, AI, manipulatives) in learning and teaching arithmetic.
- Aspects of number theory (including specific reasoning) that should and can be taught in primary and secondary school.
- Supporting and analysing long-term learning processes from kindergarten to 12th grade.
- Cultural tools and practices for learning and teaching arithmetic.
- Approaches for teachers' domain-specific professional development.

Papers and poster proposals *must use the CERME template*, and conform to the guidelines at <https://www.cerme14.it/>. CERME 14 uses an electronic submission system <https://www.conftool.pro/cerme14/>. The authors submit the initial version of their paper on the website (uploading it both as a .doc and a .pdf file, and providing the required information, in particular the TWG number).

#### Reviews and decisions

Each paper will be peer-reviewed by two persons from among those who author papers to this TWG. *All co-authors* can be asked to review up to two papers. The group leaders will decide about the acceptance of posters.

#### Important dates

- See <https://www.cerme14.it/> for important dates