

## **CERME 12: Thematic Working Group 2** **Arithmetic and Number Systems**

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**Co-leaders:** Beatriz Vargas Dorneles (Brazil); Renata Carvalho (Portugal), Judy Sayers (Gt. Brit.)

### **Scope and focus of the Working Group**

Working Group 2 is a forum for presenting and discussing research and development in teaching and learning of arithmetic and number systems through activities in kindergarten and school. 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 12<sup>th</sup> grade, and emphasizes

- research-based specifications of domain-specific concepts and goals,
- analysis of domain-specific learning processes and learning outcomes, and
- innovative approaches to design 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 and number systems.
- Conceptual understanding and procedural skills for learning numbers and operations.
- Developing number and structure sense as a foundation for flexibility and mastery.
- Innovative approaches for teaching and learning arithmetic and number systems ((particularly in heterogeneous classrooms and inclusive education).
- Using tools (e.g. technology, manipulatives) in learning and teaching arithmetic and number systems.
- Aspects of number theory (including specific reasoning) that should and can be taught in primary and secondary school.
- Supporting and analyzing long-term learning processes from kindergarten to 12<sup>th</sup> grade.
- Cultural tools and practices for learning and teaching arithmetic and number systems.
- Approaches for teachers' domain-specific professional development.

Papers and poster proposals should use the CERME template, and conform to the guidelines at [www.cerme12.it](http://www.cerme12.it) CERME 12 uses an electronic submission system [www.conftool.pro/cerme12](http://www.conftool.pro/cerme12) 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 submit papers to this TWG. Please expect to be asked to review up to two papers. The group leaders will decide about the acceptance of posters.

### **Important dates**

- **15<sup>th</sup> July 2021:** Deadline for [Early Bird Procedure](#)
- **15<sup>th</sup> September 2021:** Deadline for submission of papers and posters.
- **4<sup>th</sup> November 2021:** Preliminary decisions on papers.
- **12<sup>th</sup> November 2021:** Preliminary decisions on posters.
- **2<sup>nd</sup> - 6<sup>th</sup> February 2022:** CERME 12 takes place.
- See [www.cerme12.it/deadlines/](http://www.cerme12.it/deadlines/) for other important dates