

Objectives

The goal of Block Magic is to introduce a new teaching methodology and technology targeting young children between the ages of 2.5 and 7 who are attending nursery school, kindergarten or the early years of primary school.

More concretely, the project objectives are:

1. **To design and implement** the Block Magic hardware and software, sufficiently flexible to support a very broad range of learning activities and sufficiently low cost to allow wide adoption.
2. **To work closely with teachers** to test and refine the “Block Magic” methodology and technology and to design learning activities for developing a wide range of cognitive, logical, mathematical, linguistic, strategic and social skills.
3. **To manufacture a sufficient number of Block Magic kits** to allow testing in approximately four classes in Italy, four in Germany, four in Greece and four in Spain.
4. **To evaluate the effectiveness of Block Magic** with a rigorous experimental design.
5. **To conduct an innovative program of dissemination** for reaching very large numbers of teachers.
6. **To make preparations for commercial production** of products based on Block Magic.

Partnership

- Istituto di Scienze e Tecnologie della Cognizione (Italy)
- Universitat de Barcelona (Spain)
- Technische Universität Dresden (Germany)
- Lega del Filo D'Oro Onlus (Italy)
- Ellinogermaniki Agogi (Greece)



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CNR: Istituto di Scienze e Tecnologie della Cognizione - Italy

A novel system to stimulate infant and primary students' competences

What is Block Magic?

BLOCK MAGIC is centered on the concept of a magic block – an “intelligent” version of the “logical blocks” and “teaching tiles” already familiar to teachers.



Block Magic consists of **manipulatives - pattern blocks** - that are enhanced by digital technology (RFID). The Block Magic software generates exercises stimulating and developing creative, mathematical, logical, language, strategic, and social skills. While the children solve the exercises Block Magic generates acoustic and visual feedback and leads the children through the exercises. Intelligent software enables an individual training aligned to the specific developmental status of the children by adapting the difficulty levels of the exercises. This feature makes the system an endless source of surprise and stimulates curiosity and learning.

The main outcome of the Block Magic project is the Block Magic Teaching Kit - a small **suitcase containing all materials needed by a teacher** to put in practice the Block Magic concept and exercises with children.

The Block Magic Teaching Kit consisting of a set of magic blocks, a magic wand or a magic board used in the manipulation and selection of the blocks, specific software that offers a numerousness of exercises and a teacher’s manual specifying learning activities.



Outcomes

Block Magic will:

1. **offer learning of a broad spectrum of skills**, namely creative, mathematical, logical, language, strategic, and social skills
2. **allow children to learn in a fun way** maintaining high attention, motivation and satisfaction
3. **produce a “guided” teaching path** customizable to the learner's characteristics
4. **allow for adaptation of exercises selection** in terms of target skills and difficulty level, based on responses obtained in the previous session
5. **evaluate and stimulate in a "soft" manner**, i.e. without formal evaluation, the child’s potential and the competence acquisition regarding a specific skill
6. **provide highly flexible and customizable teaching plans** and give the teacher the opportunity to intervene at any time and
7. **be very simple to use** so that it can be used with or without the constant presence of the teacher
8. **interact with the teacher** to define the educational objectives, i.e. the teacher sets the specific objectives and may participate in the educational game as a facilitator or support, or as an observer.

