

CIMAT GAMES

What are CIMAT games?

They are a response to the increasing trend and justified, at the same time, to use the game as a teaching resort with multiple educational possibilities, being particularly timely if we consider that we must combat a growing lack of motivation among students, intensifying the attention to the diversity, which can contribute significantly the use of this material, since the playful nature, the controlled repetition and the aid between equals are aspects of special importance for the students more disadvantaged .

The characteristics that confer innovative characters in this material could be described as follows:

- The games proposed are created by the group CIMAT, which, although there are others on the same content, will offer a new option which expand the choice of teachers.
- The games are social: always interact couples or groups of four students and those with their teacher.
- There is a systematic relationship between the mathematical games and the curriculum contents.
- It is intended that the games are playable with a minimum cost, and reusable in most cases, allowing the creation of a permanent bank for use in the school.

Who can we focus these games on to?

It is aimed particularly at students who begin the stage of compulsory secondary education, a period in which starts the knowledge of the whole numbers and the algebraic language, the expansion in knowledge and

application of the rational numbers, as well as the work with geometric shapes and bodies.

What objectives are intended to achieve?

Our proposal is raised in close correspondence with the curriculum content.

- The games are addressed, systematically, to the consolidation of mathematical concepts and the automation of algorithms essential for progress in the subject. In any case are games of wit without a specific curricular purpose.
- The game presented, in most cases, a cooperative nature within the team, with the aim enhance learning among equals, tolerance and collaboration around a common goal.

How to use CIMAT games?

Each of the games proposed have the precise information for its implementation and with the templates for that can be played easily. The index of the composition of each of the games is as follows:

- Title of the Game
- Type of game: with information about the nature of the game: knowledge, strategy or mixed.
- Objectives: To express its correspondence with the curriculum content.
- Prior Knowledge: with the indications about the knowledge and skills that students must master before playing the game.
- Description of the material: where are the components of the game that would have to play to put it in practice. It was accompanied by the templates necessary for its creation and pictures in order to view the final aspect of the game.
- Rules of the game: the aim is to guide in the use of the game, although in

practice these rules could be modified or adapted to the group. In some cases are also provided the solutions in order to facilitate the control by the professor.

- **Demonstration:** Each game is accompanied by a brief video demonstration in order to capture quickly the practice of the same.
- **Education Model:** With the practice of these games are not intended to cover the whole process of teaching-learning of a particular concept or algorithm, but constitutes a stage within a model of teaching that suggest (based on the categorization of OSER and BAERYSWIL, 2001) and where would have to fit the possible effects of the game within the process.
- **Cognitive Operations¹:** With this information (based on the categorization of LOUIS D'HAINAULT, 1985), we highlight the type of cognitive operations that are required of the student during the practice game. We consider important that the teacher knows the level of demand for the game, in terms of mental operations, in order to act intentionally in each specific situation.

¹ Expanded information