



MATHEMAGIC

- THE RIGHT WORD -



Educational Goals

- ❖ Develop logic
- ❖ Highlight the playful potential of mathematics
- ❖ Bring the student to interpret the result of a series of operations according to the context
- ❖ Bring the student to formulate the constraints inherent to a situation

Key Features of the Targeted Competencies

- ❖ To decode the elements of the situational problem
- ❖ To modelize the situational problem
- ❖ To apply different strategies in order to elaborate the solution
- ❖ To validate the solution
- ❖ To define the elements of the mathematical situation
- ❖ To mobilize and apply concepts and processes appropriate to the given situation
- ❖ To justify actions or statements by referring to mathematical concepts and processes

Concepts Used

- ❖ Arithmetic (division, addition)
- ❖ Symmetry
- ❖ Intervals

Materials

- ❖ Video of the trick
- ❖ Sheets of paper
- ❖ Pencils
- ❖ 1 deck of cards per team

Targeted Academic Levels
Grades 7 to 11

Mathematical Field Concerned



Suggested Teaching Formula



Time Required
Approximately 40 minutes



SUGGESTED PROCESS



Step 1: Introduction (5 minutes)

Play the video of the magic trick once (www.amazingmaths.ulaval.ca).

You will find in the Explanation Sheet for the puzzle “The Right Word” the steps to follow if you want to do this magic trick yourself with your students rather than play the video.

Step 2: Recreate the magic trick (10 minutes)

Place the students in pairs: one plays the role of the magician and the other plays the spectator. They have to recreate the manipulations done in the video. To do so, present the video a few more times so the students notice and note the magician’s manipulations and the ones the magician has the spectator do. If they are not able to recreate the trick from the video only, you can help them by referring to the magic trick’s sequence available in the trick’s Explanation Sheet.

Note: There is a risk that this trick does not work every time. One way to avoid this problem is to make sure that the starting deck is really divided into three equal piles of 17 cards each, or to remove from the initial deck the ace of tiles and the ace of pikes. Another option is to see with the students that the trick does not always work and to try to understand why.

Step 3: Finding the solution (20 minutes)

Keeping the same teams, ask the students to try to explain the trick and to find its solution. You can suggest to them to estimate or calculate the different quantities in the trick, especially the number of cards per pile and the minimum or maximum number of letters in the name of a playing card. You can also suggest to the students different strategies to follow more easily the chosen card (particularly by turning it over) or the cards used to spell the first time (for example by turning them over or by choosing cards of another deck or colored cardboards). You can also encourage the students to draw diagrams to visualize the different layouts that we really impose to the piles of cards when we spell the names.

Step 4: Reveal the solution (5 minutes)

Refer to the Explanation Sheet for the magic trick “The Right Word”.