MATHEMAGIC

- MAGICAL CALCULATIONS -

Educational Goals

- Develop logic
- Highlight the playful potential of mathematics
- Give meaning to the decimal representation of numbers
- Bring the student to represent a situation with an algebraic expression

Key Features of the Targeted Competencies

- To decode the elements of the situational problem
- To model the situational problem
- To apply different strategies to work out a solution
- To validate the solution
- To define the elements of the mathematical situation
- To mobilize mathematical concepts and processes appropriate to the given situation
- To justify actions or statements by referring to mathematical concepts and processes

Concepts Used

- Mathematical operations (addition, multiplication)
- Algebraic expressions
- Parity
- Decimal representation of numbers

Materials

- Magic trick video
- Sheets of paper
- Pencils
- A pack of cards per team
- Visual support presenting the values of the cards (available in the Explanation Sheet)

Targeted Academic Levels
Grades 9 to 11

Mathematical Field Concerned

Suggested Teaching Method

Time Required
Approximately 40 minutes

SUGGESTED PROCESS

Step 1: Introduction (5 minutes)

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

In the “Magical Calculations” Explanation Sheet, you will find the steps to follow if you want to perform this magic trick yourself with your students rather than play the video presentation.

Step 2: Find the solution (20 minutes)

Place the students in pairs to find the solution. To do this, present the video a few more times for students to notice and take note of the magician’s manipulations as well as the actions requested to the spectator. You may want to mention to the students that since the trick works every time, the result of the chosen cards must be different, since it is with the result that the magician finds the card. You can also offer to try the trick with several cards. Among other things, they can try the trick using the same card in several different suits to compare the results. If they do not find it, you can suggest that they choose the suit and try successively using the ace, the 2, the 3, etc.

Step 3: Reveal the solution (5 minutes)

Refer to the “Magical Calculations” Explanation Sheet.