



# Math Magic

*-Incredible-*



## Educational Goals

- ❖ Develop logic
- ❖ Learn a magic trick
- ❖ Show the fun side of math
- ❖ Develop the ability to spot the constant element in a mathematical situation

## Key Features of the Targeted Competencies

- ❖ Break down the elements of a situation/problem (C1)
- ❖ Model the problem (C1)
- ❖ Apply different strategies to create a solution (C1)
- ❖ Validate the solution (C1)
- ❖ Pinpoint the important elements of a mathematical situation (C2)
- ❖ Apply the appropriate processes and concepts for the situation (C2)

## Concepts Used

- ❖ Arithmetic operations (addition, subtraction)
- ❖ Natural numbers: counting, numbering, equivalent expressions, patterns

## Materials

- ❖ Video of the trick
- ❖ 1 deck of cards per group
- ❖ Paper and pencils

Recommended grade



Skills worked



Field of Math



Suggested Teaching Method



Time Required

About 35 minutes



# Suggested Process



## Step 1: Introduction (5 minutes)

If you are comfortable performing the trick yourself, begin with Step 2. Play the video of the magic trick ([www.amazingmaths.ulaval.ca](http://www.amazingmaths.ulaval.ca)).

## Step 2: Find solutions (10 minutes)

Show the video a couple more times, or perform the trick yourself so that the students can take note of the magician's movements and be able to recreate them.

Place the students in pairs and have them try to solve the trick.

Note: Spell "incredible" on the board to avoid confusion on the spelling.

Hints for students:

- Ask them to think about where the chosen card is located within the half deck.
- Have them consider a way to track the position of the chosen card (e.g., flip that card over within the stack of cards).

## Step 3: Share solutions (15 minutes)

Return to a whole group, and have groups share their thinking and what they tried.

By referring to the *Incredible* Explanation Sheet, reveal and explain the solution of the trick to your students. (If any students have successfully solved the trick, it would be preferable to allow them to recreate the trick for the class while explaining their solution.)

## Step 4: Recreate the Magic Trick (5 minutes)

If the students were initially unsuccessful in solving the trick, they may want time to recreate it now that they have seen the solution.

### Short on time?

→ Show the video of the trick at the end of class. Let your students try and find the solution as homework. Show the solution at the beginning of the next class.

→ If you have 15 minutes, show the video and have one student try and do the trick at the front of the class. The other students can help, and if they're having trouble you can help them by using the Explanation document of the trick. Initiate and guide a discussion about the trick. After a couple minutes, explain the solution.