



MATHEMAGIC

- THE PHONE -



Educational Goals

- ❖ Develop logic
- ❖ Adopt a magic trick
- ❖ Highlight the playful potential of mathematics
- ❖ Observe the influence of parity on the positioning of a card in a deck of cards

Keys 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

Concepts Used

- ❖ Positioning
- ❖ Parity
- ❖ Counting

Materials

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

Targeted Academic Levels
Grades 3 to 6

Mathematical Field Concerned



Suggested Teaching Formula



Time Required
Approximately 35 minutes



SUGGESTED PROCESS



Step 1: Introduction (5 minutes)

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

Step 2: Recreate the magic trick (10 minutes)

Play the video a second time, asking the students to note the different actions done by the magician and the spectator.

Place the students in pairs: one plays the role of the magician and the other plays the spectator. They have to recreate each step and the manipulations done in the video.

Step 3: Finding the solution (15 minutes)

Still in teams of two, ask to try to find the solution and how the trick works.

Guide the students by suggesting to them to focus their attention on the manipulations done by the magician.

You may guide the thought process by asking the following questions:

- Why does the magician make two piles of 5 cards?
- Why does he place 5 cards on top of the pile pointed out by the spectator?
- What particular thing happens during the manipulations?
- Do the manipulations influence the trick?
- Does the trick still work if we change the manipulations?
- When the magician “calls” the cards, what does he specifically do?

Step 4: Reveal the solution (5 minutes)

Refer to the Explanation Sheet for the trick “The Phone”. Do the trick in front of the class while explaining it. Place a paper clip on the spectator’s card to easily follow it and thoroughly understand how the trick works.