Mathemagic

– *The Call* –

Educational Goals

- ❖ Describe numerical patterns in the student's own words
- ❖ Classify odd and even numbers
- ❖ Highlight the playful potential of mathematics

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

Concepts Used

- ❖ Natural numbers: odd and even numbers

Materials

- ❖ Magic trick video
- ❖ 6 different playing cards per team
- ❖ Paper
- ❖ Pencils

Targeted Academic Level
Kindergarten to Grade 3

Mathematical Field Concerned

Suggested Teaching Method

Time Required
Approximately 35 minutes

Association Québecoise des Jeux Mathématiques

SMAC
SCIENCES ET MATHÉMATIQUES EN ACTION

Step 1: Introduction (5 minutes)

Play the magic trick video a first time (www.amazingmaths.ulaval.ca).

You will find the steps to follow to do this magic trick yourself in the Explanation Sheet for the trick *The Call.*

Step 2: Recreate the magic trick (10 minutes)

Play the video or do the magic trick again. Ask the students to focus on the magician's manipulations to be able to reproduce the trick. Place the students in pairs: one plays the role of the magician and the other plays the spectator. The magician must recreate the manipulations done in the video. The other student can also help him remember the different steps.

If the students are not able to recreate the magic trick only by watching the video, you may help them by referring to the description of the magic trick in the Explanation Sheet.

Step 3: Find the solution (15 minutes)

Ask the students to try to find the solution, keeping the same teams as in the previous step.

To help them, replay the video and guide the reasoning by asking the students a few questions:
> ➢ Where is the spectator's card after he has chosen it?
> Answer: on the top of the pile in which the spectator chose his card.
> ➢ What pile of cards does the magician place on top when he picks up the cards?
> Answer: the one that was not chosen by the spectator.
> ➢ At this point, what is the card's position in the pile?
> Answer: 4th position.
> ➢ When the magician makes two piles, in which pile is the spectator's card?
> Answer: in the second pile (the one consisting of cards at positions 2, 4 and 6 of the previous step, so even positions).
> ➢ When the magician makes his first call, what pile will he choose to make sure the spectator's card is not in it?
> Answer: the first pile.
> ➢ Where is the spectator's card when the magician separates the second pile again into two other piles?
> Answer: it will be the single card since it is in the second rank in a total of three cards.

Step 4: Share the solution (5 minutes)

Refer to the Explanation Sheet for the trick *The Call.*