



MATHEMAGIC

- REUNITED -



Educational Goals

- ❖ Develop logic
- ❖ Adopt a magic trick
- ❖ Highlight the playful potential of mathematics
- ❖ Recognize the consistency in a situation and the resulting constants

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

- ❖ Periodicity
- ❖ Non numerical series and regularity

Materials

- ❖ Video of the trick
- ❖ Sheets of paper
- ❖ Pencils
- ❖ 15 cards per team (3 times 5 cards of a same suit)

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 “Reunited” 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 Explanation Sheet.

Step 3: Finding the solution (15 minutes)

Keeping the same teams, ask the student to look for the mathematical explanation behind the success of this magic trick. If needed, play the video again.

You can mention to the students that, since the trick works every time, the elements which depend only on the spectator should not influence the result. You can make them notice that the cuts do not influence the cyclic order of the cards. One way to see what happens is to experiment with the trick by placing the cards face up to observe the periodicity and see the pairs created by the different manipulations.

Step 3: Reveal the solution (10 minutes)

Refer to the Explanation Sheet for the magic trick “Reunited”.