MATHEMAGIC
- THE TIME MASTER -

Educational Goals

❖ To develop logic
❖ Adopt a magic trick

Key Features of the Targeted Competencies

❖ To decode the elements of the situational problem
❖ To represent the situational problem using a mathematical model
❖ To elaborate a mathematical solution
❖ To validate the solution
❖ To make conjectures
❖ To build and operate networks of mathematical concepts and processes
❖ To make proofs or demonstrations

Concepts Used

❖ Arithmetic operations (addition)
❖ Counting

Materials

❖ Magic trick video
❖ Paper and pencils
❖ Clock illustration (see appendix)

Targeted Academic Level
Grades 7-8

Mathematical Field Concerned

Suggested Teaching Method

Time Required
Approximately 35 minutes

SUGGESTED PROCESS

Step 1: Introduction (5 minutes)

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

In the *The Time Master* Explanation Sheet, you will find the steps to follow if you wish to perform the magic trick yourself in front of your students rather than play the video presentation.

Step 2: Recreate the magic trick (10 minutes)

Place the students in groups of 2 or 3. They must recreate the manipulations performed in the video. If the groups are made up of 2 people, the spectator can also be the master of time. A clock representation is available in the appendix. To facilitate the recreation of the trick, present the video a few more times so that the students take note of the manipulations of the magician, the spectator, and the master of time. If the students cannot manage to recreate the trick solely by watching the video, you can help them by referring to the process description of the magic trick available in the Explanation Sheet.

Step 3: Find the solution (20 minutes)

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

To help them, replay the video and guide their reasoning by bringing their attention to what remains constant, regardless of the initial number chosen. You can encourage them to look for constant elements and to enumerate the possibilities of squares on which we can land at each step of the trick. The students may use diagrams or tables to represent the situation.

Step 4: Reveal the solution (10 minutes)

Refer to the *The Time Master* Explanation Sheet.

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11   1

10   2

9   3

8   4

7   5

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