



# MATHEMAGIC

## - THE TIME MASTER -



### Educational Goals

- ❖ Develop logic
- ❖ Adopt a magic trick
- ❖ Work on cognitive and metacognitive strategies to organize data

### 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)
- ❖ Cognitive and metacognitive strategies
- ❖ Counting

### Materials

- ❖ Magic trick video
- ❖ Paper and pencils
- ❖ Clock illustration (in the appendix)

**Targeted Academic Level**  
Grades 5-6

**Mathematical Field  
Concerned**



**Suggested Teaching  
Method**



**Time Required**  
Approximately 45 minutes



# SUGGESTED PROCESS



## **Step 1: Introduction** (5 minutes)

Play the magic trick video once ([www.amazingmaths.ulaval.ca](http://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 number chosen initially. You can encourage them to enumerate the possible numbers and the square they lead to, for each step. The students should not hesitate to use diagrams or tables to explore the different possibilities.

## **Step 4: Reveal the solution** (10 minutes)

Refer to the *The Time Master* Explanation Sheet.

APPENDIX

