PUZZLING CARTOON
- THE STOLEN MAP -

Educational Goals

❖ Develop logic

❖ Highlight the playful potential of mathematics

❖ Get the student to estimate and measure the dimensions of an object's part

Key Features of the Targeted Competency

❖ To define the elements of the mathematical situation

❖ To mobilize and apply mathematical concepts and processes appropriate to the given situation

❖ To justify actions or statements by referring to mathematical concepts and processes

Concepts Used

❖ Dimensions of a rectangle

❖ Area

❖ Arithmetic (addition)

Materials

❖ Video of the puzzle

❖ Sheets of paper

❖ Pencils

❖ Written copies of the puzzle (optional)

❖ Scissors (optional)

❖ Ruler (optional)

❖ Cardboards (optional)

❖ 1 set of three paper rectangles of the following dimensions for each team: 11 cm x 2 cm, 9 cm x 5 cm and 6 cm x 4 cm (optional)

Targeted Academic Level
Grades 5-6

Mathematical Field Concerned

Suggested Teaching Formula

Time Required
Approximately 25 minutes

www.amazingmaths.ulaval.ca

SUGGESTED PROCESS

Step 1: Introduction (3 minutes)

Present the video of the puzzle a first time (www.amazingmaths.ulaval.ca).

A written version of the puzzle is available via the Explanation Sheet. If you believe it is necessary, you can project it or distribute copies to your students.

Present the video a second time to allow the students to thoroughly understand the information.

Step 2: Finding the solution (17 minutes)

Place the students in pairs so they can try to find the solution. Encourage the students to write down all the elements of information given by the affirmations.

To guide their thought process, draw their attention on the fact that the map is a square. You may question them on the minimal dimension the square could have according to the dimensions of the three remaining pieces. You may also insist on the fact that the stolen piece must have a rectangular shape.

We suggest using concrete materials to allow the students to thoroughly understand the different possible arrangements of the three rectangles they have. The students may cut out rectangles of the right dimensions themselves in sheets of paper, or you may give them already cut out rectangles. We then suggest to use centimetres as the unit rather than decimetres, explaining to the students that it is a reduced model of Richard's situation.

Step 3: Reveal the solution (5 minutes)

Refer to the Explanation Sheet for the puzzle "The Stolen Map"