Puzzling cartoon

- *Imperfect Watering* -

Educational Goals

- Develop logic
- Highlight the playful potential of mathematics
- Justify affirmations relative to area's measurements

Key Features of the Targeted Competency

- 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

- Plane figures' areas (circle and square)
- Ratios and fractions
- Simple highlighting
- Fractions simplification

Materials

- Video of the puzzle
- Sheets of paper
- Pencils
- Written copies of the puzzle (optional)

Targeted Academic Level
Grades 9 to 11

Mathematical Field Concerned

Suggested Teaching Formula

Time Required
Approximately 25 minutes

Suggested Process

Step 1: Introduction (2 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 (18 minutes)

Place the students in pairs so they can try to find the solution. To make the problem easier or make it more attainable without using a calculator, you can authorize them to use 3,14 as pi's value. You can also suggest to the students to set a radius and to make it vary to see that the areas' ratio is not influenced by the radius' value.

Step 3: Reveal the solution (5 minutes)

Refer to the Explanation Sheet for the puzzle "Imperfect Watering".

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