PUZZLING CARTOON
- MATHIAS' CANDLES -

Educational Goals

❖ Develop logic

❖ Highlight the playful potential of mathematics

❖ Translate mathematical situations with the help of diagrams

Key Features of the Targeted Competencies

❖ To define the elements of the mathematical situation

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

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

Concepts Used

❖ Enumeration of a given number

❖ Mathematical representations through a table or diagram

Materials

❖ Video of the puzzle

❖ Pen and paper

❖ Written version of the puzzle (optional)

Targeted Academic Level
Grades 3 to 6

Mathematical Field Concerned

Suggested Teaching Method

Time Required
Approximately 35 minutes

SUGGESTED PROCESS

Step 1: Introduction (3 minutes)

Present the puzzle a first time.
You can also choose to play the puzzle's video (www.amazingmaths.ulaval.ca).
To allow your students the opportunity to properly understand the information and instructions, present the puzzle, or the video, a second time.

A written version of the puzzle is available via the Explanation Sheet. If you believe it is necessary, or that it would be helpful, project the puzzle's instructions on the board or pass copies to your students.

Step 2: Find solutions (15 minutes)

Place the students in pairs and guide them by telling them to pay special attention to the words used in the problem. It is important for your students to understand, and to distinguish, that the question asks them to find the number of hours during which <u>only</u> 3 candles burn at the same time, not the number of hours in which <u>at least</u> 3 candles burn at the same time.

You can guide your students by suggesting they represent the candles and the number of hours each candle burns. Provide them with large white paper so that they may represent the problem in their own way. Advise them to verify the number of candles that burn during each hour (hour 1 = 1 candle, hour 2 = 2 candles, etc.).

Step 3: Share solutions (10 minutes)

On the board, display an empty version of the table found in *Mathias' Candles* Explanation Sheet. With the help of your students, complete the table and analyze the results found.

Ask different teams to share the results they found and compare these results to the ones found by the whole class. Ask the teams to explain the solutions they found and how they found them. Ask if other teams found the same solution by using different strategies.

Use the *Solution* section of *Mathias' Candles*' Explanation Sheet to share and explain the puzzle's solution.

Step 4: Solve the puzzle (5 minutes)

If the students were initially unsuccessful in solving the puzzle, they may want time to solve it now that they have seen the solution.