



PUZZLING CARTOON

- THE KING'S CAKE -



Educational Goals

- ❖ Develop logic
- ❖ Highlight the playful potential of mathematics
- ❖ Work on the visualization and comparison of plane shapes
- ❖ Identify and work with fractions

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

- ❖ Plane Figures
- ❖ Fractions

Materials

- ❖ Video of the puzzle
- ❖ Coloured markers
- ❖ Paper
- ❖ Scissors
- ❖ Appendix 1
- ❖ Written version of the puzzle (optional)

Targeted Academic Level
Grades 3-4

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 (17 minutes)

Place the students in pairs and distribute Appendix 1. Suggest them to try different sharing and separating options, and to colour each of the guests' shares.

Here are some hints you can offer students to guide their thinking:

- How many people want to share the leftover cake? (4 people)
- In how many pieces is the cake separated? (16 pieces)
- How many jellybeans are in the cake? (4)
- If we want each person to get a jellybean, how many pieces of cake will each person get? (each person gets 4 pieces, and one of those pieces has the jellybean).
- How can we separate the cake so that:
 - Each person gets the same amount of shares
 - The pieces are the same shape
 - Each person gets a jellybean

In case of difficulty, you can suggest your students to start with the 2 jellybeans that are next to one another as their separation possibilities are more limited.

Step 3: Share solutions (10 minutes)

Post the image of the cake (Appendix 1) on the board. Ask several teams to come to the board and share the solution they found and explain how they found their solution. Ask if other teams found the same solution by using different strategies.

Afterwards, share the solution with your class by using *The King's Cake* Explanation Sheet. Draw the solution on the board.

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.

Appendix 1

