PUZZLING CARTOON
- PLANET KRYPTON -

Educational Goals

- ❖ Develop logic
- ❖ Highlight the playful potential of mathematics
- ❖ Construct sets of equivalent fractions
- ❖ Work with parts and wholes

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

- ❖ Smallest common denominator
- ❖ Equivalent fractions
- ❖ Connections between fractions and percentages

Materials

- ❖ Video of the puzzle
- ❖ Crayons
- ❖ Sheets of 11" x 17" paper
- ❖ Unifix cubes or chips
- ❖ Written version of the puzzle (optional)

Targeted Academic Level
Grades 5-6

Mathematical Field Concerned

Suggesting Teaching Method

Time Required
Approximately 35 minutes

Association Québecoise des Jeux Mathématiques

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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 teams of four. Provide each team with 11'' × 17'' paper, Unifix cubes or chips, and any other material that may help them with their manipulations.

Allow students and their teams time to try and solve the puzzle. To help guide your student's thinking, remind them that the puzzle's information is in fractions. You can also remind them to think about the different steps and methods used to compare and calculate fractions (i.e. by finding common denominators for the fractions). Suggest them to represent the Kryptonian population via drawings or any other method that could help them reflect on the puzzle and its solution. Bring their attention to the fact that the right-handed Kryptonians represent $\frac{1}{5}$ **of the remaining population** and **not** $\frac{1}{5}$ **of the total population**. Remind them that they also need to pay special attention to the puzzle's question.

Step 3: Share solutions (10 minutes)

With the help of your students, find common denominators for the fractions. Once the calculations are done, represent the Kryptonian population on the board and ask teams to share the solution they found and to explain how they found the solution. Ask if other teams found the same solution by using different strategies.

To share the solution with your class, see the *Planet Krypton*'s Explanation Sheet.

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.