PUZZLING CARTOON
- THE KITES -

Educational Goals

- ❖ Develop logic
- ❖ Observe and produce geometrical patterns
- ❖ Identify and familiarize students with parts and wholes
- ❖ Highlight the playful potential of mathematics

Key Features of the Targeted Competencies

- ❖ To decode the elements of the situational problem
- ❖ To model the situational problem
- ❖ To define 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

- ❖ Geometry
- ❖ Fractions

Materials

- ❖ Video of the puzzle
- ❖ Sheets of paper
- ❖ Red crayons
- ❖ Scissors
- ❖ Appendix 1
- ❖ Numeric table

Targeted Academic Level
Grades 1-2

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 give your students the opportunity to properly understand the information and instructions, present the puzzle, or the video, a second time. Additionally, a written version of the puzzle is available via the Explanation Sheet. It might be helpful to project the 5 kite images on the board or pass copies to your students.

Step 2: Find solutions (17 minutes)

Have your students work in pairs to create the missing kite.

Bring your students' attention to the different kite models and their rotations. Help students notice that, depending on the rotation and the colours of the kite, different kites can look alike and represent the same model. i.e., If we have two models with 1 red quarter and 3 white quarters (like Patrick's model), no matter which quarter is red, if the kites are rotated they will end up overlapping one another and look the same.

Therefore, suggest to your students to draw the different kite models on the puzzle's drawing (Appendix 1) and to rotate them. Having your students rotate the models may help them see the differences and similarities between each model more clearly; it can also help them find which kite model is missing.

Hints to offer and guide your students:
- Do any of the models created look the same/different if they are rotated? Why or why not?
- Which model allows us to place the same number of red and white quarters* and get two different kite models?

Step 3: Share solutions (10 minutes)

Ask students to share solutions they found and to explain how they found the solution. Ask if other teams found the same solution by using different strategies. Solve the puzzle on the board with the help of your students.

If you prefer not to use the term "quarter" you may use another term such as area or part.

Appendix 1