PUZZLING CARTOON

- THE KITES 2 -

Educational Goals

- Develop logic
- Highlight the playful potential of mathematics
- Observe and produce regularities using geometrical figures

Key Features of the Targeted Competencies

- To decode the elements of the situational problem
- To modelize the situational problem
- 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

- Geometry
- Counting of possible solutions
- Regularities

Materials

- Video of the puzzle
- Several copies of Appendix 1, 2 or 3
- Crayons
- Written copies of the puzzle
- Interactive whiteboard

Targeted Academic Levels
Grades 1 to 4

Mathematical Field Concerned

Suggested Teaching Formula

Time Required
Approximately 25 minutes

SUGGESTED PROCESS

Step 1: Introduction (3 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. Pause at the end of the video to show the question to the students.

Step 2: Finding the solution (17 minutes)

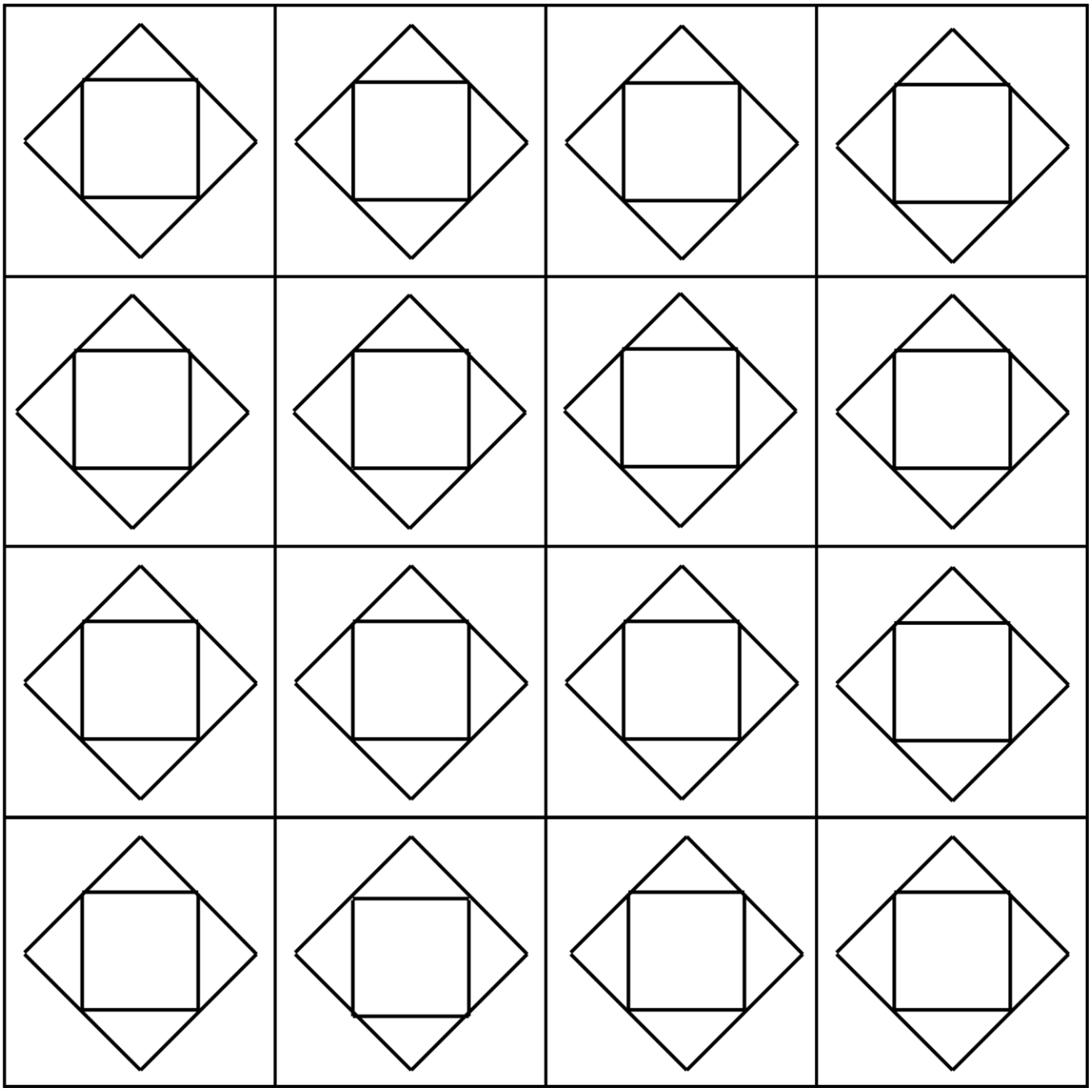
Place the students in pairs so they can try to find the solution. Distribute a copy of Appendix 1 to every student. Partial versions of the kite's model are also available in Appendix 2, in order to make the students draw the model to increase the difficulty level.

You may guide the students during their thought process. Make sure the colourings they find are different. Stress the fact that two kites are identical if we swivel them round.

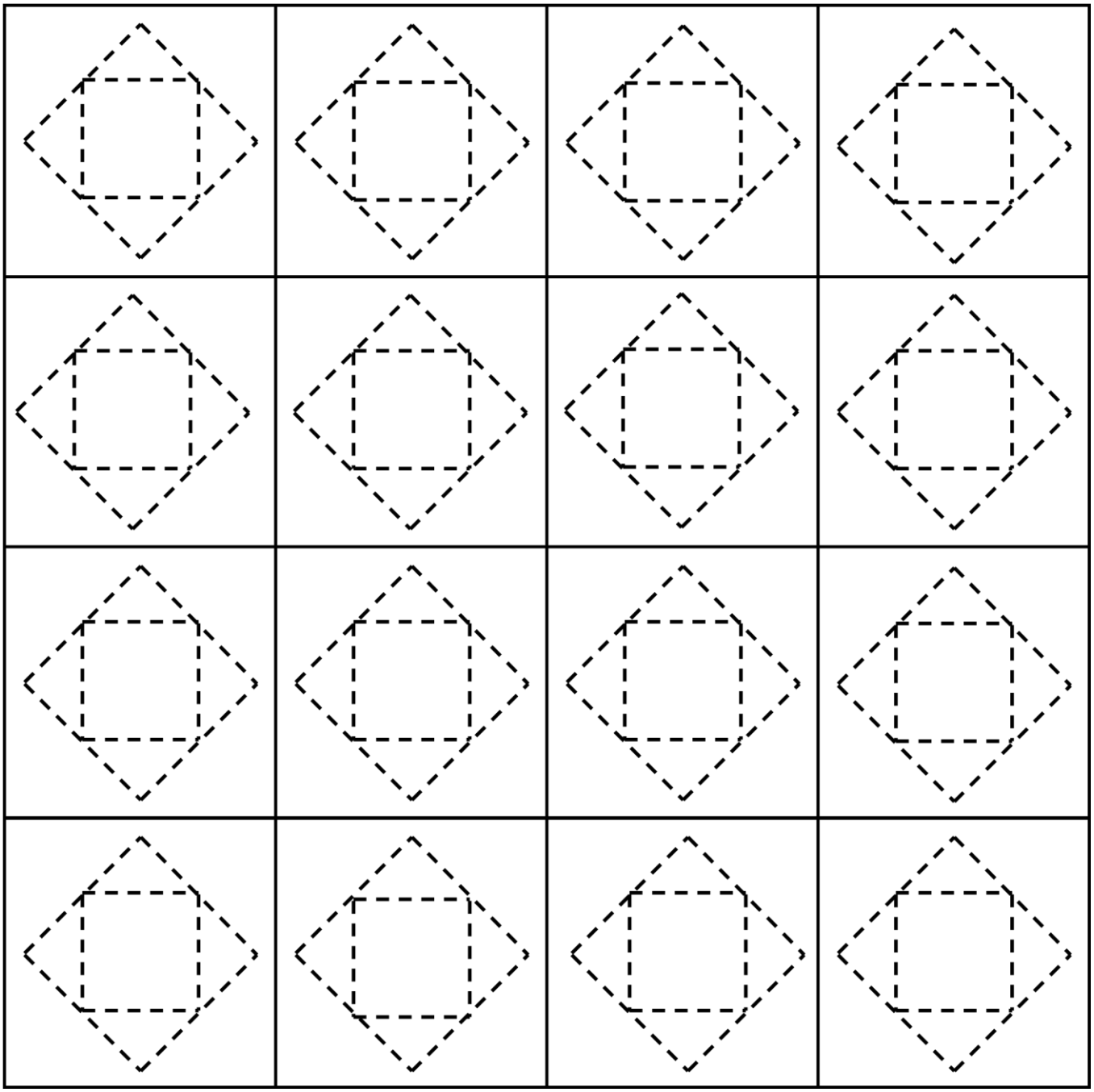
Step 3: Reveal the solution (5 to 10 minutes)

Refer to the Explanation Sheet to know the solution of the puzzle. Ask the students how many solutions they found. Make the inventory of the 12 different solutions with them. Explain that a way to make sure to have found the 12 solutions is to focus on the colour in the centre of the kite.

Appendix 1



Appendix 2



Appendix 3