



Puzzle

- The Bike Route -



Educational Goals

- ❖ Develop logic
- ❖ Highlight the playful potential of mathematics

Key Features of the Targeted Competencies

- ❖ To apply different strategies to work out a solution (C1)
- ❖ To define the elements of the mathematical situation (C2)
- ❖ To mobilize mathematical concepts and processes appropriate to the given situation (C2)
- ❖ To justify actions or statements by referring to mathematical concepts and processes (C2)

Concepts Used

- ❖ Arithmetic
- ❖ Logic

Materials

- ❖ Video of the puzzle
- ❖ Pens
- ❖ Several copies of Appendix 1
- ❖ Written version of the puzzle (optional)

Targeted Academic Level



Targeted Competencies



Mathematical Field Concerned



Suggested Teaching Method



Time Required

Approximately 25 minutes



Suggested Process



Step 1: Introduction (3 minutes)

Present the puzzle a first time and distribute the puzzle's drawing to each student or team (see Appendix 1). You can also choose to play the puzzle's video (www.amazingmaths.ulaval.ca).

To allow your students to properly understand the information and instructions, present the puzzle (or the video) a second time.

A written version of the puzzle is available on 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 and their teams.

Step 2: Find solutions (15 minutes)

Place your students in pairs and allow them time to try to solve the puzzle. Encourage them to use the information provided to solve the puzzle by using logic and mathematical reasoning. You can also suggest they use the puzzle's drawing (Appendix 1) to help them find the solution and trace the possible routes.

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

- How many fire hydrants are there in total?
- Can Pauline pass each fire hydrant to get to the Eiffel Tower?
- How many possibilities are there if Pauline can only pass an odd number of fire hydrants and not retrace her steps?

Step 3: Share solutions (10 minutes)

To share the solution with your class, see *The Bike Route's* Explanation Sheet and post Appendix 1 on the board.

Ask teams to share the route they found, and explain how they found the solution. Ask if other teams found the same route by using different strategies. Trace the different ways teams found the route on the board, and, by using the Explanation Sheet, explain the mathematical concepts more deeply.

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.

Short on Time?

→ Present the puzzle at the beginning of the day. Encourage your students to note the important information and think of a solution. At the end of the day, have a classroom discussion about the puzzle and ask your students how they think it can be solved. Reveal the puzzle's solution with your class.

→ Print the written version of the puzzle (available in the Explanation Sheet) and use it as an activity for students who have completed their work.

→ When there is approximately ten minutes left to class, present the video and initiate a classroom discussion to solve the puzzle. Share the puzzle's solution at the end of the class.

Appendix 1

Paulin's Block :

