



Puzzle

- *Cat or Dog* -



Educational Goals

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

Key Features of the Targeted Competencies

- ❖ To define the elements of the mathematical situation (C2)
- ❖ To mobilize mathematical concepts and processes appropriate to the given situation (C2)

Materials

- ❖ Video of the puzzle
- ❖ Pen and paper
- ❖ Written version of the puzzle (optional)

Targeted Academic Level



Targeted Competencies



Suggested Teaching Method



Time Required

Approximately 30 minutes



Suggested Process



Step 1: Introduction (3 minutes)

Present the puzzle to your class 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 (15 minutes)

Place the students in pairs and ask them to try to find the solution. Encourage your students to write down the information obtained from each statement (Albert's statement and Ben's statement).

It is very important that students understand that each statement is essential, and that every sentence has a meaning. They must also remember that there is a total of **3 dogs and 2 cats**.

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

- What information can be discerned from Albert's statement?
- Why does Ben specify that, even with the information received from Albert, he is unable to know whether he will receive a cat or a dog?
- In which situation would Ben be able to guess what kind of pet he would get with the information received only from Albert's statement?
- Which animal can Cindy get?
- Suppose Cindy would receive a cat. What would we be able to conclude?
- Suppose Cindy would receive a dog. What would we be able to conclude?

Step 3: Share solutions (10 minutes)

To share the solution with your class, see the *Cat or Dog Explanation Sheet*. During the discussion, we recommend that you recreate the *Possibilities of Animals Ben and Cindy can Receive* table together (found in the Explanation Sheet) on the board.

Ask teams to share the solution they found and to explain how they found the solution. Ask if other teams found the same answer by using different strategies.

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?

Here are a few suggestions for an "express" presentation:

→ Present the puzzle at the beginning of the day and encourage your students to note the important information and think of the 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 complete their work early.

→ 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.