



# Puzzling cartoon

-A Shoe-ful Family-



## Educational Goals

- ❖ Develop logic
- ❖ Highlight the playful potential of mathematics
- ❖ Develop written calculation processes to perform multiplications and divisions

## Key Features of the Targeted Competency

- ❖ 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

- ❖ Arithmetic (multiplication and division)
- ❖ Decimal numbers
- ❖ Rounding

## Materials

- ❖ Video of the puzzle
- ❖ Sheets of paper
- ❖ Pencils
- ❖ Written copies of the puzzle (optional)

**Targeted Academic Level**  
Grades 7

**Mathematical Field Concerned**



**Suggested Teaching Formula**



**Time Required**  
Approximately 35 minutes



# Suggested Process



## **Step 1: Introduction** (3 minutes)

Present the video of the puzzle a first time ([www.amazingmaths.ulaval.ca](http://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.

## **Step 2: Finding the solution** (22 minutes)

Place the students in pairs so they can try to find the solution. Encourage the students to write down all the elements of information given by the clues.

You can guide the students by suggesting to them to begin with counting the time required for the adults to take all their shoes off. Stress the fact that, meanwhile, the children are also taking shoes off. You can also guide them by telling them that once all their shoes are taken off, they can help their children. Then, stress the fact that everyone keeps their pace and that they can work at the same time. You can also have them look at the problem as a whole (solution 2): a certain number of shoes, a quantity that we remove every second.

## **Step 3: Reveal the solution** (10 minutes)

Refer to the Explanation Sheet for the puzzle “A Shoe-ful Family”.