



# Math game

- Area Game -



## Educational Goals

- ❖ Highlight the playful potential of mathematics
- ❖ Increase the amount of multiplications memorized (multiples 1 to 6)
- ❖ Calculate the area of surfaces

## Key Features of the Targeted Competency

- ❖ To mobilize mathematical concepts and processes appropriate to the given situation (C2)
- ❖ To apply mathematical processes appropriate to the given situation (C2)
- ❖ To justify actions or statements by referring to mathematical concepts and processes (C2)

## Concepts Used

- ❖ Arithmetic (addition and multiplication)
- ❖ Area

## Materials

- ❖ 2 regular dice
- ❖ Graph paper
- ❖ 2 crayons of different colours

## Targeted Academic Level



## Targeted Competency



## Mathematical Field Concerned



## Suggested Teaching Formula



## Time Required

Approximately 15 minutes



## Suggested Process



### Step 1: Introduction

Place the students in teams of 4. Provide 2 dice per team, a sheet of paper and four crayons.

### Step 2: The game (15 minutes)

The goal of the game is to have the largest total area at the end of the game.

The four players begin the game by starting at the 4 corners of the sheet (one student per corner). In turns, they throw the 2 dice and draw a rectangle that has the width and the length of the numbers given by the dice. They can draw their rectangle in the direction they want (horizontally or vertically). They calculate the rectangle's area and write it inside of it. The rectangles being drawn must touch at least one of the sides of another rectangle drawn by the same player.

The students must try to position their rectangle as efficiently as possible to place the biggest number possible on the sheet.

The game is over when the four players have no space left to draw their rectangle, even if some of the sheet's parts are still blank.

The winner is the player who has the largest total area.

### Variants

- Give the players a bigger sheet.
- Play with two players and start from two opposite corners (diagonally).

### To go further!

To go further, give every student his own sheet. The children have to fill their sheet with the rectangles. When the student throws the dice, multiplying the digits he got gives him the area of the rectangle he has to draw on his sheet. However, he can draw the rectangle as he likes, as long as it respects the area. For example, if the area is 24, he can draw a rectangle of  $2 \times 12$ ,  $6 \times 4$ ,  $3 \times 8$ , etc. He must position the rectangles as efficiently as possible to have the biggest number of rectangles on his sheet. The game is over when no one can place a rectangle on his sheet anymore. Then, they count the number of rectangles per sheet and the player who has the most wins. So, the children must choose how they draw the rectangles wisely to place as many as possible.