



CHALLENGE

- 20 BY 20 SQUARE -



Educational Goals

- ❖ Highlight the playful potential of mathematics
- ❖ Develop strategies and use creativity to search for solutions

Key Features of the Targeted Competencies

- ❖ To apply different strategies in order to elaborate the solution
- ❖ To elaborate a mathematical solution
- ❖ To validate the solution
- ❖ To share the information relative to the solution
- ❖ To form conjectures

Concepts Used

- ❖ Logic
- ❖ Geometry

Materials

- ❖ Appendix 1
- ❖ Scissors
- ❖ 20 x 20 square (optional)
- ❖ Popsicle sticks (optional)

Targeted Academic Level
Grades 7-8

Mathematical Field Concerned



Suggested Teaching Formula



Time Required
Approximately 45 minutes



Suggested Process



Step 1: Introduction (5 minutes)

Place the students in teams of two. Tell them they will have to meet a challenge. Show them the appendix 1 with the 20 cm by 20 cm square that is on it. Tell them that this square represents a lake. They must find the way to cross this lake to get to the island in the middle.

Step 2: The challenge (30 minutes)

Give the instructions to meet the challenge:

- The students must start from the lake and get to the island on the middle.
- To succeed in crossing the lake, the students only have wood sticks of 8 cm in length.
- They must cross using as less sticks as possible.

Give them the appendix 1 so they can cut the lake and the sticks. Encourage the students to make several attempts with the materials to see the possibilities. They must use their logic to find the strategy that will allow them to reach the island while using as less sticks as possible. Suggest to them to identify what went well and what did not go so well after each attempt.

You can guide the students by suggesting to them to think about the geometric shapes. Which one, according to them, would be the most practical and useful to complete the challenge. Remind the children that they can combine the shapes.

Step 3: Review (10 minutes)

Come back over the challenge with the whole class. Ask each team to tell the number of sticks used to meet the challenge. Then, the teams have to tell the rest of the class which strategies they applied to use as less sticks as possible.

Compare the strategies to each other and bring out the geometric shapes that were used the most to meet the challenge.

To go further!

To allow the students to thoroughly understand and meet the challenge, use materials rather than the appendix 1. Build 20 x 20 dm squares and provide several popsicle sticks to the students. This way, they will be able to make several attempts by handling the materials. They will better understand the importance of using geometric shapes.

Appendix 1



