

Didactic Scenario

1. Title

Multiply with Magic Folds: An Origami Adventure in Mathematics!

2. Keywords

Math, handcraft, Multiplication, Motor manipulation

3. Basic Information

STEAM Subject: Mathematics

Typical interaction time with the instructional scenario in teaching hours for in-school work:

General description of the scenario:

Phases	Stage	Time
1	Introduction	5 minutes
2	Illustrating Legendary Characters	10 minutes
3	Mythical Collages	30 minutes

Age group: 6 – 11 years old

Estimated difficulty level:

Very Easy	Easy	Moderate	Challenging	Very Challenging
		X		

Teaching resources

Material:

Square sheets of paper in various sizes (enough for each student)
Markers or pens (for labeling the folded papers, if desired)
Whiteboard or chalkboard (for demonstration purposes, optional)

School infrastructure: Not required

Additional material from external sources/online tools: Not required

4. Educational Problem

This STEM activity combines mathematics with origami art to teach students multiplication in a creative and hands-on way. Students will use the art of origami to visually represent multiplication operations, making the concept more tangible and engaging. The aim of this STEM activity is to introduce students to the concept of multiplication and provide them with a unique and fun method of understanding the mathematical operation through origami art.

5. Learning Objective (-s)

1. Demonstrate an understanding of multiplication as a mathematical operation.
2. Apply origami art to represent multiplication visually.
3. Enhance their creativity, problem-solving, and mathematical thinking skills through the integration of art and mathematics.

6. Phases of the Scenario

Phase 1

Title: Introduction

Indoor	Outdoor	Mixed
X		

Phase duration in minutes: 5 minutes

Detailed description of the scenario phase:

Explain what origami art is and how it can be combined with mathematics.
Reiterate the basic concept of multiplication and mention that the goal is to visually demonstrate the multiplication operation using origami.

Activity sheets:

Phase 2

Title: Preparation

Indoor	Outdoor	Mixed
X		

Phase duration in minutes: 10 minutes

Detailed description of the scenario phase:

Distribute square sheets of paper in various sizes to the students.
Provide each student with two different-sized square papers; one to represent the multiplicand and the other to represent the product.

Activity sheets:

Phase 3

Title: Origami Multiplication Process

Indoor	Outdoor	Mixed
X		

Phase duration in minutes: 30 minutes

Detailed description of the scenario phase:

Step 1: Instruct students to fold the edges of the paper correctly to form a perfect square.
Step 2: Using the larger square paper, demonstrate how to fold it to represent the value of the first number to be multiplied. For instance, fold three edges for a 3x3 multiplication operation.
Step 3: Using the smaller square paper, demonstrate how to fold it to represent the value of the second number to be multiplied. For instance, fold two edges for a 2x2 multiplication operation.
Step 4: Combine the two folded papers and create the result paper by folding the intersection of the two folded edges.
Step 5: Unfold the result paper and observe the origami art representing the multiplication.

Activity sheets:

7. Evaluation Methodology

15 minutes

Encourage students to share their approach to multiplication and how they obtained the results.
Discuss the effectiveness and fun of combining origami art with the multiplication operation.
Outcome:

This scenario effectively teaches students multiplication through origami art, providing a tangible and creative way to comprehend the mathematical concept. By combining art and mathematics, students engage in a playful and immersive learning experience, enhancing their creativity, problem-solving, and mathematical thinking skills.