

Didactic scenario

1. Title

Types of triangles in terms of their sides.

2. Keywords

Equilateral, Isosceles, Scalene

3. Basic information

STEAM Subject: Technology, Design

Typical interaction time with the educational scenario in teaching hours for in-school work:
2 teaching hours.

General description of the scenario:

Phase	Stage	Time
Different triangles	Warm up activity	15 minutes
Types of triangles and their construction	Implementation stage	45 minutes
Evaluation	Evaluation stage	30 minutes

Age group: 11 years old, 5th grade in the Greek education system.

Estimated level of difficulty:

Very Easy	Easy	Moderate	Challenging	Very challenging
		X		

Teaching Resources

Material :Mathematics student's Book and Workbook , worksheets,
Expansion activity: paper geometrical shapes

School infrastructure: computer connected to the internet, video projector and display screen,
tablet, quadrant, compass, ruler, cardboard triangles.

Additional material from external sources/online tools:

YouTube : <https://www.youtube.com/watch?v=loBxxkaeOII&t=114s>

<https://www.youtube.com/watch?v=w6WR0jXDtEU&list=PLPNEL1CseM801WpQES33t6DDAQ5uZmQiG&index=12>

<https://www.youtube.com/watch?v=nL7FXC9mefl&list=PLPNEL1CseM801WpQES33t6DDAQ5uZmQiG&index=13>

<https://www.youtube.com/watch?app=desktop&v=UF4j-DL-96w>

Activity at https://docs.google.com/forms/d/e/1FAIpQLScXnIrHXTIBsUdVPD4SyoDq7snhBlh-U5r5yOrwp0DfeCQTig/viewform?usp=sf_link

Activity at <https://wordwall.net/el/resource/64526259>

Google forms

evaluation: https://docs.google.com/forms/d/e/1FAIpQLSdDCAwxprGsackKMJfZJfvHvNqozLIPLyAMWoCNnLNcFEp6Chw/viewform?usp=sf_link

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4. Educational Problem

Students have some general knowledge of triangles but find it difficult to discover the differences between triangles and construct triangles accurately using different ways .

5. Learning objectives

1. To identify the different types of triangles (in terms of sides)
2. To draw the types of triangles in different ways (in terms of their sides)
3. To understand deeper the differences of triangles (in terms of their sides)
4. To improve their cooperation and communication skills.

6. Phases of the Scenario

Phase 1

Title: I recall the properties of triangles.

Indoor	Outdoor	Mixed
X		

Phase duration in minutes: 15'

Detailed description of the scenario phase:

The lesson will take place in the classroom. The students are divided into groups and given different shapes (triangles and squares). They are invited to remember the basic characteristics of shapes (triangle and square), with the teacher's support they divide the shapes they have into two groups into triangles and squares. After that we focus on the triangles.

Activity Sheets:

Questions that will be answered orally.

Phase 2

Title: The types of triangles (in terms of their sides) and their construction.

Indoor	Outdoor	Mixed
X		

Phase duration in minutes: 45'

Detailed description of the scenario phase:

Students will watch the following links.

Theory <https://www.youtube.com/watch?v=loBxxkaeOII&t=114s>

Construction of an isosceles triangle with a compass.

<https://www.youtube.com/watch?v=w6WR0jXDtEU&list=PLPNEL1CseM801WpQES33t6DDAQ5uZmQiG&index=12>

Construction of an equilateral triangle with a compass.

<https://www.youtube.com/watch?v=nL7FXC9mefl&list=PLPNEL1CseM801WpQES33t6DDAQ5uZmQiG&index=13>

Construction of a scalene triangle with a compass.

<https://www.youtube.com/watch?app=desktop&v=UF4j-DL-96w>

They will learn the name, special characteristics and different ways of constructing triangles (with a ruler and a compass). Then they are asked to separate their paper triangles into scalene, isosceles and equilateral. They then answer to the following questions from the link:

https://docs.google.com/forms/d/e/1FAIpQLScXnIrHXTIBsUdVPD4SyoDq7snhBlh-U5r5yOrwpODfeCQTig/viewform?usp=sf_link

Each group is asked to construct scalene, equilateral and isosceles triangles in different ways with materials from the corner of the classroom.

Activity Sheets: Links, materials and instructions for the implementation of the activity.

Phase 3

Title: Review - Evaluation

Indoor	Outdoor	Mixed
X		

Phase duration in minutes: 30'

Detailed description of the scenario phase: Representatives of the groups are invited to present their constructions and the other groups, with the help of the teacher, evaluate. They recognize and understand any misinterpretations of the particularities and characteristics of the

triangles. Then , the students implement the activity from the link <https://wordwall.net/el/resource/64526259>

At the end, students will complete an evaluation questionnaire (google forms) made by the teacher to express their impressions on what is suggested by the teaching scenario.

https://docs.google.com/forms/d/e/1FAIpQLSdDCAwxprGsacKMJfZJfvHvNqozLIPLyAMWoCNnLNcFEp6Chw/viewform?usp=sf_link

Activity Sheets: Links and instructions for the implementation of the evaluation activities. Scenario Evaluation Questionnaire.

7. Evaluation Methodology

Initial: Made through guided use of prior knowledge and question-and-answer discussion (How many sides does a triangle have?)

Formative: It takes place continuously in all phases, where questions are asked and the students' path towards learning is checked.

Final: Wordwall Activity.

Scenario evaluation activities.

Googleforms questionnaire

8. Additional resources for the teacher

Folder: Types of triangles in terms of their sides. _ Additional resources for the teacher