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## Lesson plan: Construction of triangle

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**School:**

Gymnázium a Jazyková škola s právem státní jazykové zkoušky Zlín, Czech Republic

**Subject:**

Mathematics

**Topic:**

Construction of triangle

**Class:**

O3.A / tercie (third grade of eight-year study)

**Teacher:**

Michal Heczko

**Duration:**

45 minutes

**Educational targets:**

Pupil is able to use groups of points in geometrical constructions.

Pupil is able to make sketch, write the process and make construction of triangle.

**Requirements:**

Pupil knows basic groups of points in geometry.

Pupil is able to draw basic geometrical constructions (such as axis of angle, axis of line segment, perpendicular or parallel line).

**Teaching aids:**

For teacher: Computer with Internet connection and projector, Whiteboard, schoolbook.

For students: exercise book, schoolbook, pen, tablet, or mobile phone

**Schoolbook:**

J. Herman a kol.: Matematika pro nižší ročníky víceletých gymnázií – Geometrické konstrukce (tercie), Prometheus

**Relation between subjects:**

Educational area: Man, and the world of work

## Plan of the lesson:

Plan of division of class	Time	Contents	Notes
<b>Introduction to the lesson (frontal method of education)</b>	5 minutes	At the beginning teacher reviews the basic groups of points, which is used for geometrical construction.	Write topic and absence to class book. Write topic "Construction of triangle".
<b>Revision of basic construction (Groupwork)</b>	12 minutes	Pupils will be divided into groups of 3 or 4 students. Every group gets one type of construction. They will discuss the process (about two or three minutes) of the construction and they must explain it to the classmates	Key competences: <ul style="list-style-type: none"> <li>- Problem solving competence</li> <li>- Communication competence</li> <li>- Working competence</li> <li>- Social and personal competence</li> </ul>
<b>Exposition of new topic (frontal method with discussion about the problem)</b>	20 minutes	In this part we have prepared 2 exercises. In every exercise we will make all parts of the exercise – sketch, analysis, process in steps, construction, conclusion. In first exercise is explained, how to write and draw all parts, in the second one, pupils will try to solve it within their common discussion.	Key competences: <ul style="list-style-type: none"> <li>- Problem solving competence</li> <li>- Working competence</li> </ul> Exercises: <ul style="list-style-type: none"> <li>- <math>\triangle ABC: c = 5\text{ cm}; a = 4\text{ cm}; v_c = 4\text{ cm}</math></li> <li>- <math>\triangle ABC: a = 6,5\text{ cm}; v_a = 3\text{ cm}; t_a = 4\text{ cm}</math></li> </ul>
<b>Evaluation and feedback (frontal method of education with discussion)</b>	6 minutes	In this part of the lesson, we will discuss with students about the conclusion of the construction. How many results could have these exercises. Teacher will construct two triangles from previous part again. He will edit the sizes from assignment and show, how will number of results change.	Key competences: <ul style="list-style-type: none"> <li>- Problem solving competence</li> <li>- Communication competence</li> <li>- Working competence</li> </ul> GeoGebra application
<b>Conclusion of the lesson (frontal method of education)</b>	2 minutes	Teacher summarizes the topic and reviews important parts of exercise with construction of triangle – sketch, analysis, process in steps, construction, conclusion.	Homework from schoolbook: page 78/exercise 1  Assignment in Kahoot: <a href="https://create.kahoot.it/share/mnoziny-bodu-a-konstrukcni-ulohy/ad7a4bd5-de11-4044-9870-30dab5ebcf1b">https://create.kahoot.it/share/mnoziny-bodu-a-konstrukcni-ulohy/ad7a4bd5-de11-4044-9870-30dab5ebcf1b</a>

