ELEMENTS OF STEM-EDUCATION IN MATHEMATICS LESSONS DURING DISTANCE LEARNING

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With the onset of the pandemic in Ukraine, blended learning was implemented. Distance learning has been announced since February 24, 2022, when the Russian Federation began bombing all the territory of Ukraine, until the end of the school year.

In Ukraine, the implementation of the Concept of STEM-education is envisaged by 2027. Therefore, it is important for Ukraine to introduce elements of STEM education even during distance learning.

Distance learning can have several models: asynchronous, synchronous and bichronous (a combination of asynchronous and synchronous). During the war, it is best to organize bichronous distance learning.

During the mathematics teaching there is an opportunity to introduce elements of STEM-education.

For the asynchronous component it is advisable not to forget about the various design exercises (construct a building using 3D shapes, photograph it and indicate the number of figures needed for this in a table; draw a picture with only geometric shapes in the graphic editor; make a scale drawing of a chair and then use wire and cardboard to create a small copy of this chair etc.) or laboratory work (measure the volume of 3D shapes by direct and indirect methods; measuring the reading time of a poem several times and then finding the average reading time of that poem etc.) with subsequent publication of photos with the results in class chats.

For the synchronous component, it is advisable to offer tasks for creating algorithms, reading and building flowcharts, tasks for reading parts of the code in Scratch, building and figures in various services. Paper folding tasks are useful (students can show different types of angles, the mutual arrangement of lines, illustrate the theorem on the sum of the angles of a triangle etc.).

It is advisable for students to solve tasks that are combined, that is, related to several topics. Exercises of some topics such as Motion, Scale, Symmetry, Proportions, Equations, Percentages, Functions, Graphs of functions need to be cross-cutting, as the most often used by other subjects.