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Developing Students' Geometric Imagery Using Illustrated Tasks

Key words: *illustrated task, competence approach, productivity of lesson, geometrical imagination.*

Annotation: *the article deals with the important peculiarities of illustrated tasks in developing geometrical imagination of pupils, increase effectiveness and quality of the lesson.*

One of today's requirements in mathematical science is to abstain from theoretical approach and to build and develop the ability to apply mathematical knowledge in daily life of the pupils, to increase the emphasis on demonstrating and enhancing their independent thinking skills. This means that the competing approach in mathematical science involves the formation and development of practical skills that enable pupils to act efficiently in situations which are present in their professional, personal, and everyday life, as well as their practical application. Integration of our country into the world community, development of science and technology necessitates the young pupils to be competitive in changing world labor market situation and to master science perfectly. This will be achieved by introducing standards in the education system, including mathematics based on advanced national and international experience (1).

As we know, geometry serves to develop the space imagination in pupils. In this respect, the relationship between the abstract concepts of the geometry and the life reality, there appears some difficulty in understanding the difference between the reality and the geometric imagination in pupils. The role of geometric imagination is unique in the development of space imagery in pupils. However, the most difficult part in studying of the task and theory of geometry is creating the forms which are satisfied to a given of set of conditions. The experiments have shown that overcoming these difficulties should be used of imagery tasks in geometrical issues.

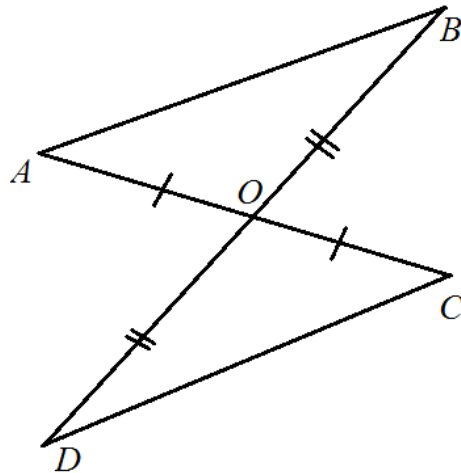
As we seen from the experience of developed countries that the teaching of mathematical tasks is provided on the basis of everyday life styles and real events. In addition to teaching the subject, pupils also will be prepared for daily living situation. There will be used the imagery geometrical tasks that we propose in this review. We use the practical tasks to master newly introduced concepts, especially in the field of geometry to improvement pupils knowledge. One of factors that negatively affects in teaching in general education schools, especially in city schools is the presence of a lot of pupil's number. It is a challenge for the teacher to give a new subject to the mind of the pupils is to provide them with a deep and thorough study of the new subject, especially controlling their knowledge.

In this case we recommend use for foreign experience in resolving above issues. For example, in general education schools of the Russian Federation are used in the form of a ready-made drawing in each classroom apart from school textbooks in geometry lessons (2, 3, 4). Here are

some examples of how to use illustrated issues when teaching the topic "Triangle Equality". We will consider the first and second signs of triangular equations. In this case, a teacher will introduce a new topic. To fully cover the given topic it would be appropriate for teacher to use the following illustration.

The task on the first indication of triangular equality.

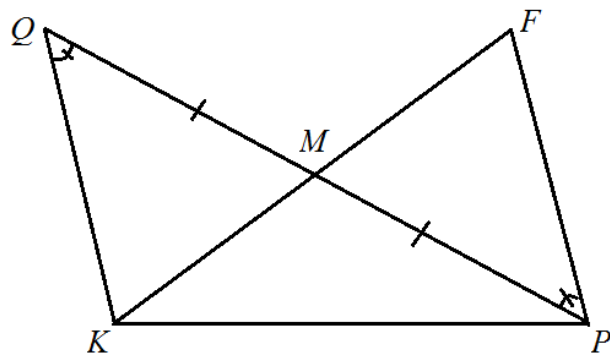
1- Task. Show the equality of the AOB and DOC triangles given in the drawing.



Solution of the task: The pupils should repeat the topic and mention of the past theorem on vertical corners. At the intersection of two AC and BD sections AOB and COD are vertical and equal to each other. So, according to the drawings, $AO = OC$ and $DO = OB$. According to first indication of equality of triangles, the AOB and COD triangles are equal to each other, also.

The task on the second indication of triangular equality.

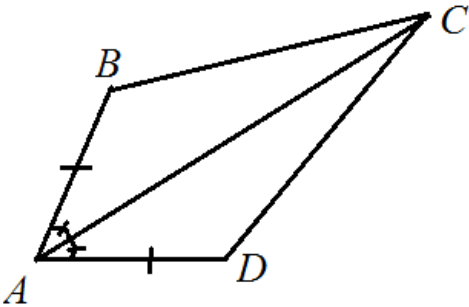
2nd-Task. Show an equality of triangular FDC and FMP.



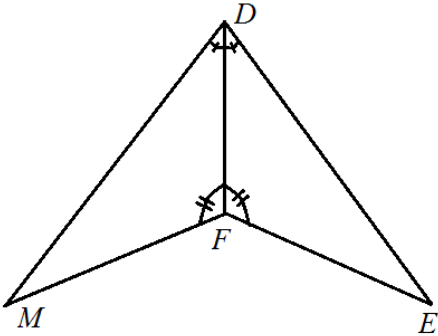
Solution of the task: As we have seen above the QMC and FMP corners are vertical and equal to each other. According to the second indication of triangular equality the KCP and FMP triangles are equal to each other. As can be seen, it is desirable to use the above described tasks in formulation of the subject in minds of pupils. Throughout the course, the teacher has to deal with issues that are illustrated in such a scenario. These topics will surely provide pupils to

master them well and help the teachers to evaluate pupil's knowledge. Such imagery tasks can also be used effectively in all aspects of the geometry course. Of course, it really requires a teacher to work harder. While when preparing the course, each issue needs to be set up in a variety of subjects, with relevant tasks. This will take some time, but the effectiveness of the course will increase. The teacher can concentrate their attention on similar subjects in the whole of course at the lesson as the form of visual aids, slides and distribution materials, so this increase pupils activity in the classroom. This ensures the quality of the lesson. Here are some examples of how to study the subject of the first and second signs of triangular equation.

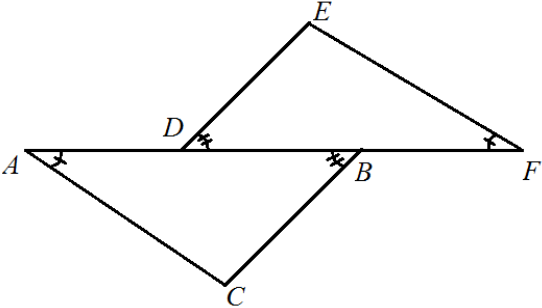
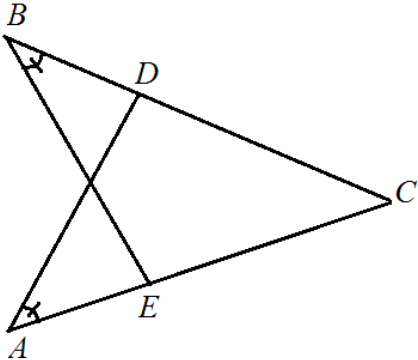
- 1. Show an equality of ABC and ACD triangular.
- 2. Show an equality of DMF and DFE triangular.



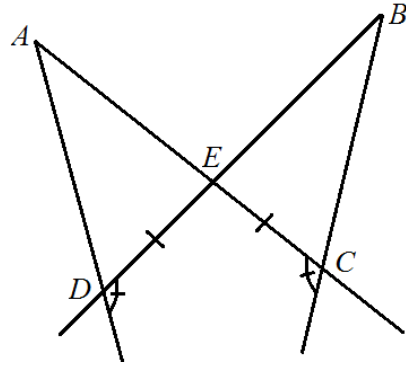
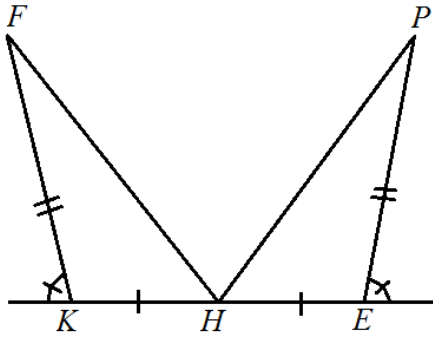
2.



- 3. $AC=BC$ is given on the drawing. Show an equality of ACD and BEC triangular.
- 4. $AD=BF$ is given on the drawing. Show an equality of ABC and DEF triangular.



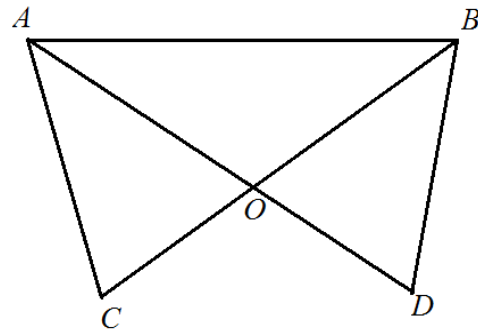
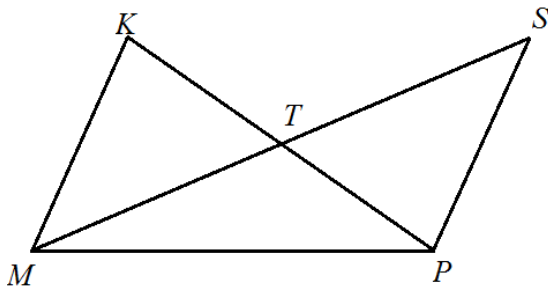
- 5. Show an equality of FKH and HEP triangular.
- 6. Show an equality of ADE and BEC triangular.



In addition, we recommend resolving the following issues in developing the logical thinking of pupils and building their independent thinking. In order to equality of the triangles given in above illustration, it is necessary to fill the relevant conditions that satisfied to the tasks. For example, what conditions must be included to task that to be equality of a given triangle? Of course, the solution to this problem can not be only one, but more than one. In this case, there is appears a debate among the pupils. It is also easy to use such topics in small groups. It is important to summarize the responses of each subgroup of answers. The answer of a group is that the second group can either fill in or have a completely different answer in the second group. This has a positive effect on the effectiveness of the course. At the same time, the pupils have ability to compare actual forms of reality and mathematical competition develops rapidly.

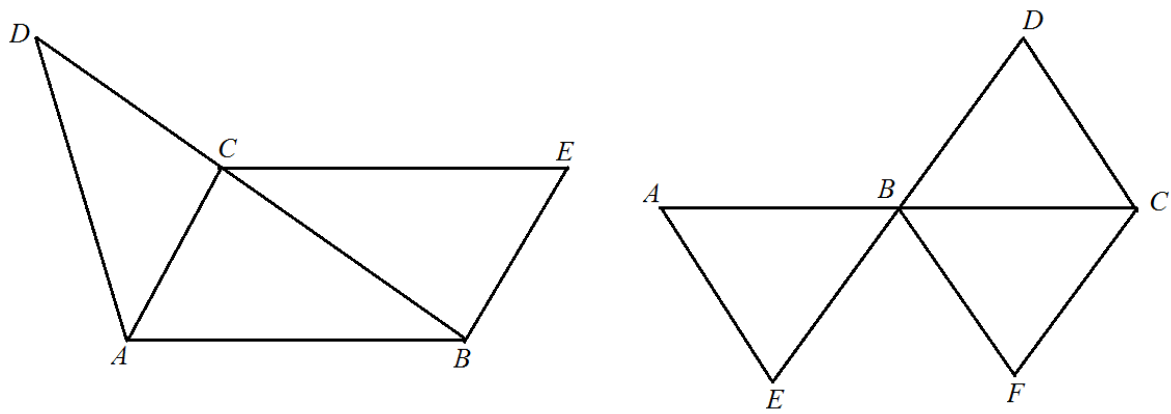
1. Show a condition of equality of the triangles KMT and STP in the drawing.

2. Show a condition of equality of the triangles ABC and ABD in the drawing.



3. Show a condition of equality of the triangles ABC, ACD and BCE in the drawing

4. Show a condition of equality of the triangles ABE, BCD and BCF in the drawing



Each pedagogue must be able to increase the pupil's ability to master the given topic and to apply it in everyday life, to formulate them as a competent person he must be working hardly and continuously.

References:

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