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Research Article

THE ROLE OF GEOMETRIC PATTERNS IN FORMING STUDENT'S CREATIVE SKILLS

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ABSTRACT

This article examines the decorations used in the monuments of the Middle Ages. It was found that architecture developed in Central Asia, as well as the presence in the architectural decorations of Central Asia of geometric, floral, epigraphic (i.e., patterned decorations), living creatures, zoomorphic (animal) patterns, mythical creature-like patterns.

KEYWORDS

Approach, theoretical material, future teacher, personal approach, methodological base, professional activity, educational process, active teaching method, student.

INTRODUCTION

The development of drawing began with painting. Ancient Egyptians were able to show the shapes and sizes of buildings in the simplest way when building their residences, palaces, and temples. Ancient papyri, paintings on granite, preserved mural art reflect the concepts of drawing of ancient peoples, preserved plans of cities, plans and facades of buildings and other documents are proof of this. People have always admired beauty and tried to live civilized. Therefore, they made various decorations on the walls of their living space. Public buildings are also decorated with various, mostly geometric patterns.

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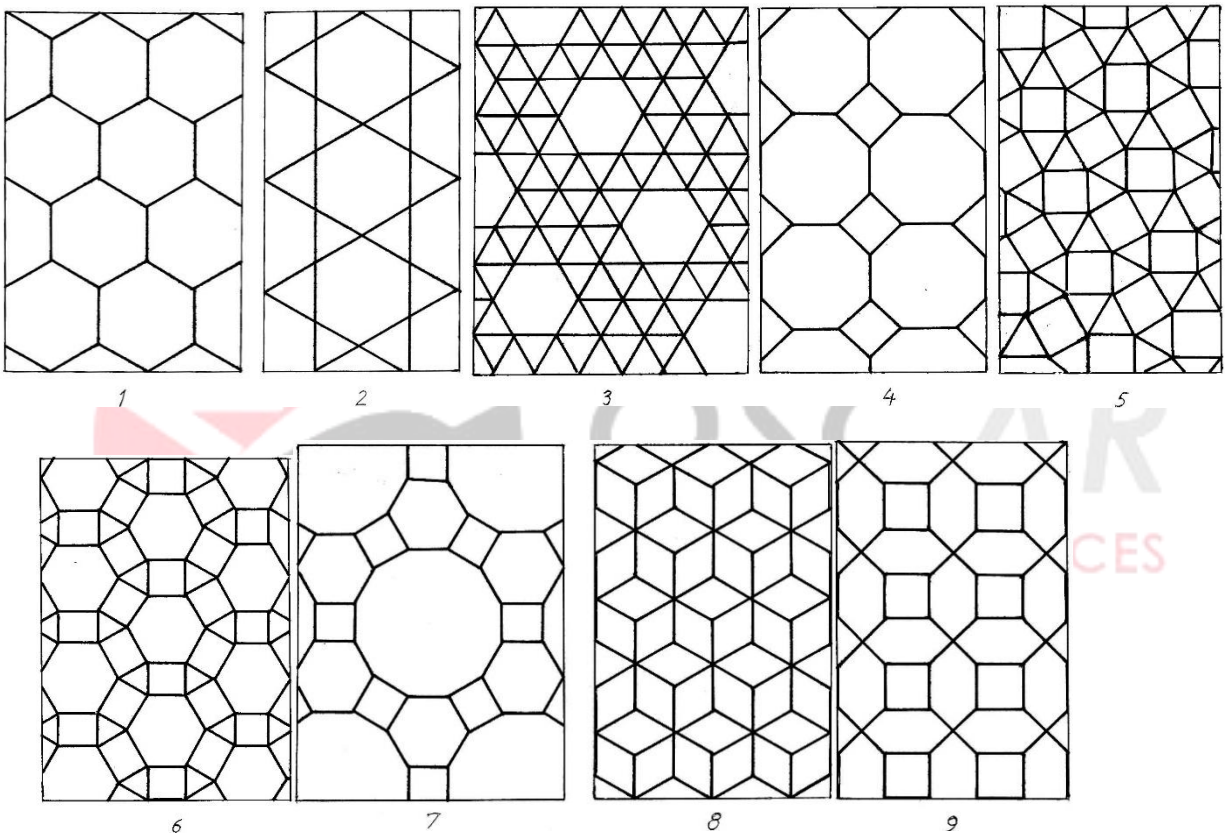
There are many types of decorations - it is impossible to introduce them all. only brief information is given about the geometric khaksh, i.e. girix, which is used as decoration in architecture.

First, a certain bounded plane is represented by filling in polygons of different shapes side by side. In drawing 1: 1-hexagon, 2,3-hexagon and triangle, 4-octagon and square, 5-square and triangle, 6-hexagon, square (rectangle), dodecagon, and triangle , 7-decagon, hexagon and square, 8-parallelogram, 9-square and parallelogram panels samples are given.



Drawing 1

Girih is an Arabic word meaning knot, entanglement. A gyri knot is discovered to create a girih.

Girih is based on the strict rules of geometric design. The resulting set of straight lines or polygons is a gyre element and is also called a gyre key. By multiplying this groove element - key, a whole grooved panel (display) is created. The key is duplicated either directly or inverted.

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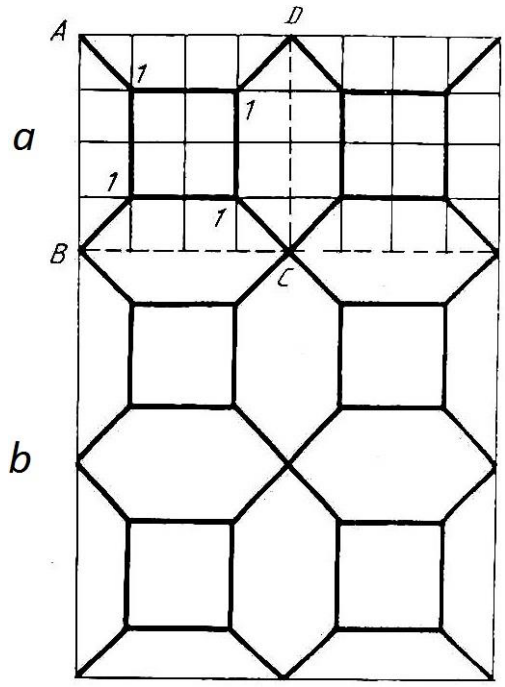
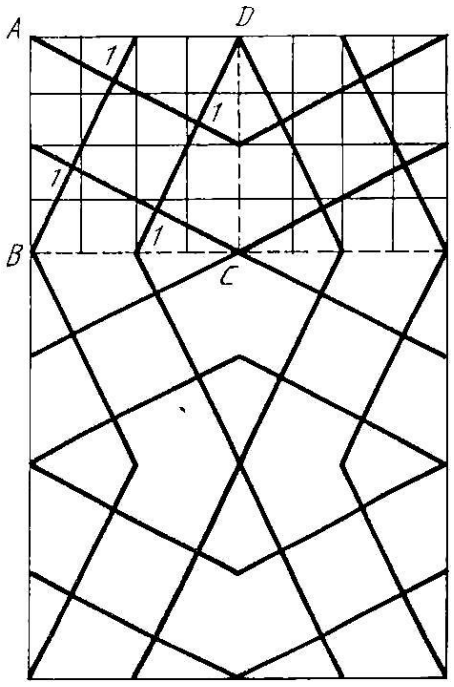


Drawing 2



Drawing 3

In direct repetition, the girth element is moved without changing its side position (Figure 2). In the case of inverted repetition, the gyri element is depicted by turning it 180° (diagram 3).

Making a girih. The type of girih is chosen depending on the level where the girih is performed, that is, the place of the panel. It can be square, rectangle, circle, ellipse. Accordingly, that level is first squared, that is, the short side is considered as one side of the square. The remaining part of the long side is adjusted to one-half, one-fourth, or one-eighth of the square, depending on the formation of the fold.

There are many ways to make girih, and each girih requires a unique approach. Square nets are used to make the simplest gihris.

Method of square grids. First, a square of the required size is drawn and its interior is filled with square grids. Then the square grids are filled with the girih element (Drawing 4, a).

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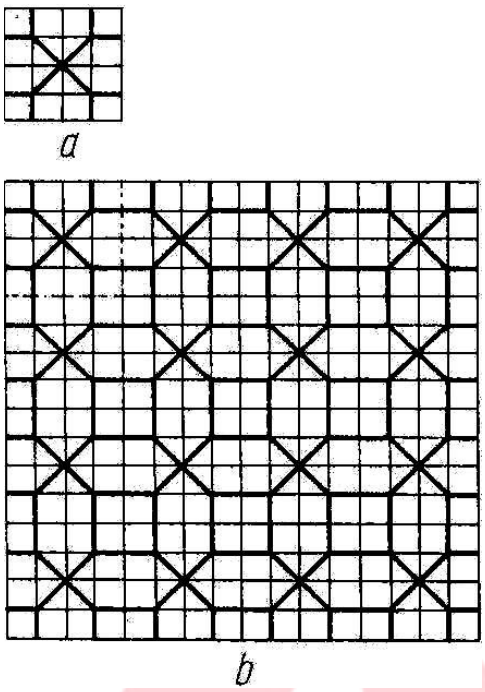
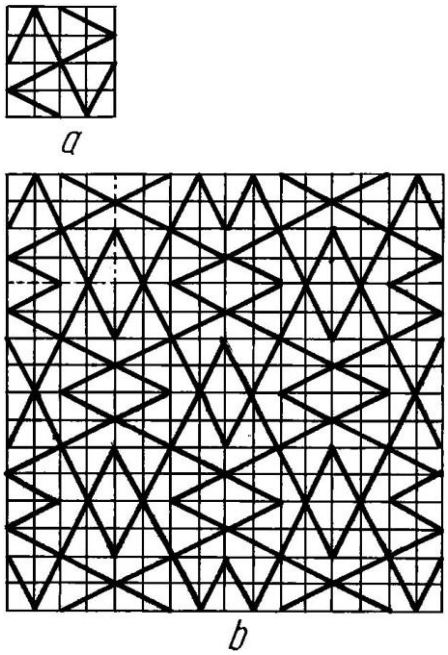


Drawing 4



Drawing 5

A panel is made from this key. For this, the key is drawn repeatedly without changing its position (Drawing 4, b).

An example. By inverting the element in the square created as a key (diagram 5, a), a panel is made (diagram 5, b).

Geometric method of making. The required square is drawn and its diagonals are drawn (Drawing 6). The corners of the square are moved from points A, B, C, D to the sides of the square using a circle centered at 0, and these points are marked with 1. Points 1 are interconnected through 0. In this case, the sides of the square will be pushed a little.

A panel is created by flipping (mirroring) the diagonals of the square in the pushed position.

An example. A square is drawn and AC is drawn diagonally. An arc of radius BC (CD) is drawn from point C and 1 point is marked on AC. Parallel lines are drawn from point 1 to AD. An arc is drawn from points B and D with radius B1 (C1) and 2 points are marked on AC. Points B and D are connected with 2 and continued, and points 5 and 6 are determined on the sides of the square.

Girih element is bounded by points 3 and 4 (Drawing 7, a). By flipping this key to the right and left and diagonally, a panel is created (Drawing 7, b). In this order, a panel of the required size can be made.

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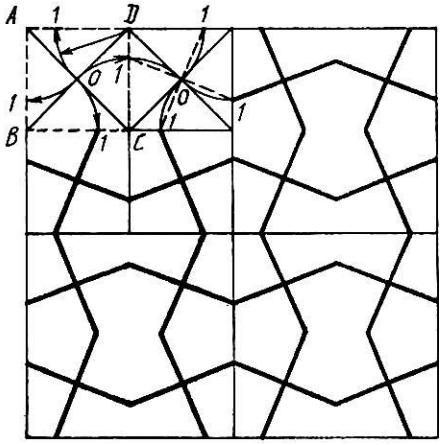
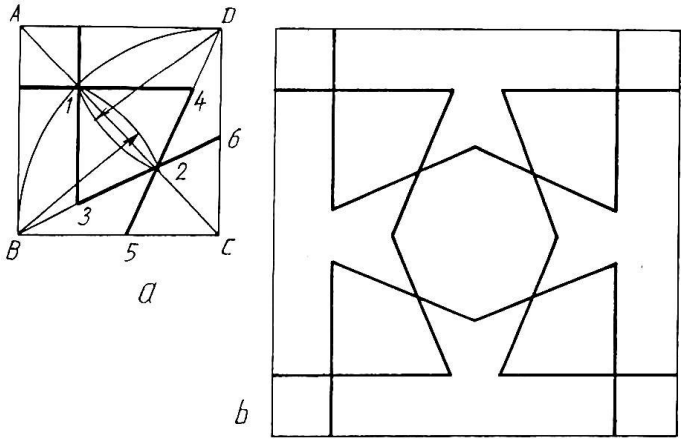


Drawing 6



Drawing 7

In some cases, when making the key of the girih element, it is necessary to make it as an element in which four parts are united in a quarter of the square (Figure 3.1.8).

1. A square is drawn and point 0 is determined through its diagonal. Here, their center is left at 0 so that their diagonals do not interfere. Arcs of radius AO (CO) are drawn from the ends A and C of the square, and points 1 are marked on the sides of the square. Arcs are drawn from points A, B, C, D with a radius of B1, and they are divided into three parts at a radius of B1, and 2 points are formed.

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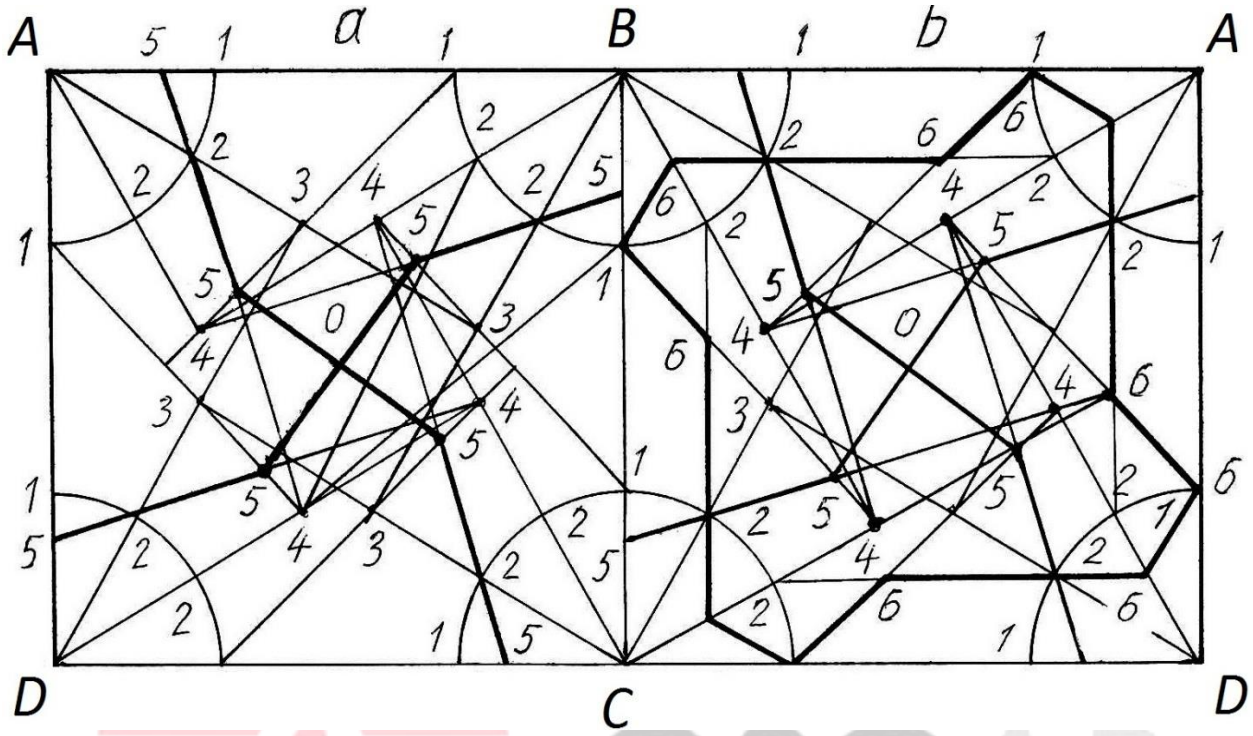

Drawing 8

2. Light lines coming from 2 points on the right and left sides of the small arcs drawn from the corners A, B, C, D of the square are passed, and their intersection points form a square with 3 points.

3. By connecting points A, B, C, D with the second 2 points, auxiliary lines are formed, and the intersecting points of this line are marked with 4. These 4 points are connected to points 1 and 2 as shown in the drawing. Then, 5 points are formed on lines 14 and 24, and the 5 points are interconnected as shown in the diagram. As a result, a "Plus" (plus) sign is formed in the middle (Drawing 8, a).

4. From 2 points, parallel lines are drawn to AB, CD and AD, BC sides of the square, and 24 and 14 of them intersect 6 points.

The points forming the knot are connected to each other and between them by 1 (diagram 8, b).

5. If you click on the lines forming the gyri, a gyri element is created. By turning it over and multiplying it, a panel is formed (Drawing 9, c).

Method of determining its key - geometric element from a ready-made slotted panel.

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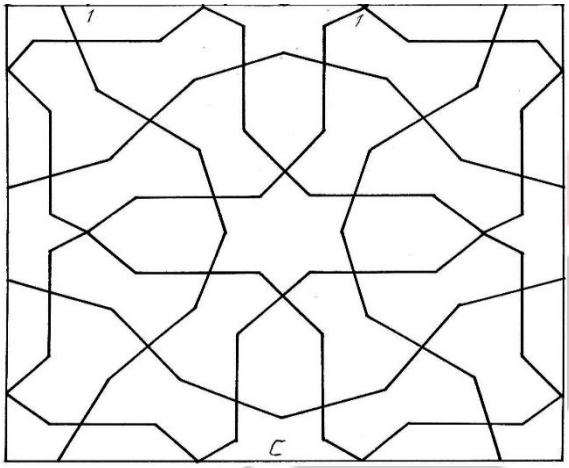
This method itself is divided into two. The first one is called square nets, the second one is called geometric formations.

Method of square grids. Figure 10, a, assumes that a quarter of the panel is given. This piece itself is divided into four, and one of its pieces is divided into four more. A, B, C, D grid is drawn on the square to determine the gyrix key.

Geometric method of making. In Figure 10 b, a quarter of the panel is considered given, and it is further divided into four parts. A, B, C, D are the diagonals of the square. A circle is drawn with the center o touching the sides of the square.



Drawing 9

The diagonals of the square with the circle and the points 1 intersected by the center lines of symmetry passed from o are marked. As shown in the diagram, the structure of the key switch is determined by connecting points 1 and 1. The panel is made by turning it over.

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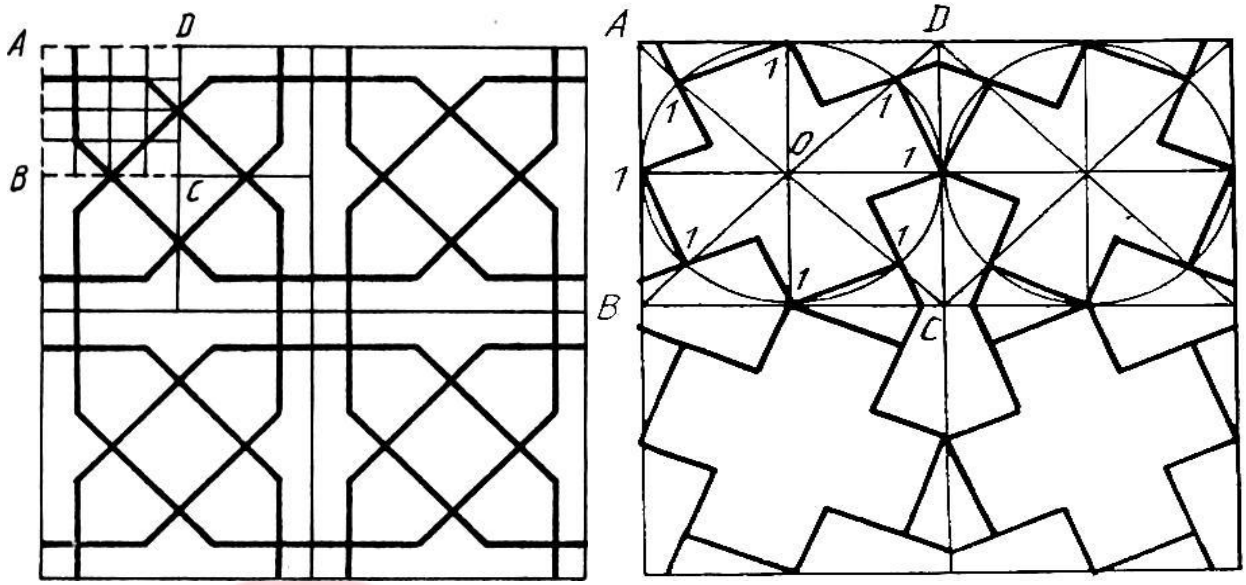

Drawing 9

It has a direct impact on the development of the uniqueness and accuracy of geometric patterns in the formation of students' creative thinking abilities.

In order to develop students' creative thinking abilities, it is appropriate to give students new practical tasks to reinforce the topics learned and they will work on them.

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