

INNOVATION SCIENCE AND TECHNOLOGY



Scopus || Electronic journal specializing in Scopus

ISSUE 12



Acceptance of papers **December, 2025**



**Acceptance of
papers**

Published monthly



Topics

economics,
technology, social
sciences

ISSN 3060-5229



EDITOR-IN-CHIEF:

Mirzaliyev Sanjar Makhmatjon ugli

DEPUTY EDITOR-IN-CHIEF:

Makhmudov Nosir Makhmudovich
DSc., Prof., Academician

DEPUTY EDITOR-IN-CHIEF:

Ochilov Bobur Bakhtiyor ugli – Senior
lecturer at TSUI

THE SCIENTIFIC-POPULAR ELECTRONIC
JOURNAL **"INNOVATION SCIENCE AND
TECHNOLOGY"** HAS BEEN REGISTERED
UNDER THE NUMBER **C-5669633** BY THE
AGENCY FOR INFORMATION AND MASS
COMMUNICATIONS (AOKA) OF THE
REPUBLIC OF UZBEKISTAN, EFFECTIVE
FROM OCTOBER 9, 2024.

CONTACTS

Phone: **+998 50 737 87 88**

Website: <https://ist-journal.uz>

Email: innovationist2025@gmail.com

The scientific electronic journal "Innovation Science and Technology" has been included in the list of scientific publications recommended for the publication of main scientific results of dissertations for the award of PhD and DSc degrees in economics and technical sciences, in accordance with the Resolution No. 370 of the Presidium of the Higher Attestation Commission of the Republic of Uzbekistan, dated May 8, 2025.

Electronic publication, Issue 12. 248 pages.
Approved for publication on December, 2025.

Editorial board:



Sharipov Kongiratbay Avezimbetovich,
Doctor of Technical Sciences (DSc), Professor



Abdurakhmanova Gulnora Kalandarovna,
Doctor of Economic Sciences (DSc), Professor



Cham Tat Huei,
Doctor of Philosophy (PhD), Professor (Malaysia)



Muhammad Imran Sadiq
Doctor of Philosophy in Economics (PhD),
Professor, Malaysia



Ahmed Aziz Ismail
Doctor of Technical Sciences (DSc),
Professor (Egypt)



Lee Chin
Doctor of Philosophy in Economics (PhD),
(Malaysia)



Asongu Simplicé
Doctor of Philosophy in Economics (PhD),
Cameroon



Rui Dang
Doctor of Chemistry (DSc), Professor, China



Zahoor Ahmed
Doctor of Philosophy in Economics (PhD), Turkey



Shujaat Abbas
Doctor of Philosophy in Economics (PhD), Russia



Tina A Coffelt
Doctor of Philosophy in Educational Sciences
(PhD), USA



Abdikarimova Dinara Rustamxanovna
Doctor of Economic Sciences (DSc), Professor

CONTENTS

THE THEORETICAL FOUNDATIONS OF APPLYING TAX INCENTIVES FOR INVESTMENTS DIRECTED TOWARD HUMAN CAPITAL	14
Quliyev Begimqul Melikovich	
ECONOMETRIC MODELS OF CASHLESS SETTLEMENTS AMONG ECONOMIC ENTITIES.....	21
Ruzimuradov Shukhrat Kusanovich	
PROSPECTS FOR THE DEVELOPMENT OF TOURISM BRAND MARKETING IN MODERN CONDITIONS (UAE: DUBAI ON THE EXAMPLE OF A CITY).....	26
Ibodova Dilsora Ibodovna	
CREDIT DEFAULT SWAPS AS A WAY TO HEDGE AGAINST FORTHCOMING FUTURE UNCERTAINTIES IN THE DEBT MARKET OF UZBEKISTAN	31
Abduganiev Abdulaziz Alisher o'g'li	
SHOULD THE REGULATION OF THE E-COMMERCE MARKET IN THE REPUBLIC OF UZBEKISTAN BE CARRIED OUT BY THE NATIONAL AGENCY FOR PERSPECTIVE PROJECTS OR THE CENTRAL BANK?	39
Sadikov Aziz Mirsharapovich	
MECHANISM FOR IMPLEMENTING ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN THE OPERATIONS OF COMMERCIAL BANKS IN UZBEKISTAN.....	46
Bakhriddin Berdiyarov	
INNOVATIVE APPROACHES OF SMALL BUSINESSES IN THE INDUSTRY AND CONSTRUCTION SECTORS AND THEIR IMPACT ON EMPLOYMENT.....	53
Ergasheva Nigora Abdigapparovna	
AI-BASED NORMALIZATION METHODOLOGY FOR COLLECTING AND PROCESSING KPI INDICATORS.....	56
Shuhratov Mamurjon Shuhrat o'g'li	
REFORMS AND PROSPECTS FOR THE DEVELOPMENT OF THE PARTICIPATORY BUDGETING INITIATIVE IN UZBEKISTAN	63
Khamidov Khabibullo Hikmatulla ugli	
PROBLEMS OF THE INWARD PROCESSING CUSTOMS REGIME AND WAYS TO ELIMINATE THEM.....	70
Abdullaev Shakhzodbek	
FINANCIAL ANALYSIS OF SMALL BUSINESS AND PRIVATE ENTREPRENEURSHIP IN CONSTRUCTION	74
Musayeva Shoirazimovna	
MEASURES TO ENHANCE THE ROLE AND EFFECTIVENESS OF SMALL BUSINESS IN REGIONAL ECONOMIC DEVELOPMENT.....	80
Ergashev Jamshid Jamoliddinovich	
THEORETICAL AND METHODOLOGICAL FOUNDATIONS FOR IMPLEMENTING INNOVATIVE TECHNOLOGIES IN EDUCATION.....	84
Alijonova Marjonabonu Jaxongir qizi	
INDIA'S EXPERIENCE IN ENHANCING PUBLIC WELFARE THROUGH THE DEVELOPMENT OF ENTREPRENEURIAL ACTIVITY	88
Aripov Oybek Abdullayevich	
GREEN STRUCTURAL TRANSFORMATION IN UZBEKISTAN: GREEN FINANCE AND ECO-INNOVATION FOR SUSTAINABLE INDUSTRIAL AND AGRICULTURAL DEVELOPMENT.....	93
Egamberdiev Khumoyun	
AGRICULTURAL MANAGEMENT BASED ON INNOVATIVE TECHNOLOGIES AT THE INTERNATIONAL LEVEL: THE EXAMPLE OF UZBEKISTAN.....	101
Bustonov Komiljon Kumakovich	
ANALYSIS OF THE FINANCIAL CONDITION OF ENTERPRISES: ASSESSMENT OF EQUITY EFFICIENCY	110
Umurkul Shukhratovich Fayziev	

IMPROVING THE QUALITY OF ECONOMIC GROWTH THROUGH THE TRANSITION TO THE DIGITAL ECONOMY.....	118
Mamadaliyev Akmaljon	
МЕТОДЫ И МЕХАНИЗМЫ ИССЛЕДОВАНИЯ ПОТРЕБИТЕЛЬСКОГО ПОВЕДЕНИЯ НА ТУРИСТСКОМ РЫНКЕ.....	124
Нурматова Ситора Шавкатовна	
ANALYSIS OF INNOVATION ACTIVITIES.....	133
Alieva Elnara Ametovna	
METHODS AND MECHANISMS FOR STUDYING CONSUMER BEHAVIOR IN THE TOURISM MARKET.....	139
Nurmatova Sitora Shavkatovna	
ALGORITHMS AND METHODS FOR CALCULATING THE AREA OF A GASTRIC ULCER DEFECT USING MODERN MATHEMATICAL TECHNIQUES.....	145
Yusupov Ibrohimbek XXX, Abdusamatova Munira Sultonbek qizi	
UTILIZATION OF ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN ENTERPRISE MARKETING ACTIVITIES.....	151
Sadikov Shohrux Shukhratovich	
ENSURING THE FINANCIAL SUSTAINABILITY OF HIGHER EDUCATION INSTITUTIONS: STRATEGIC DIRECTIONS, GLOBAL TRENDS, AND POLICY IMPLICATIONS.....	156
Inomiddin Imomov	
THEORETICAL FOUNDATIONS OF THE STRUCTURE OF THE NATIONAL ECONOMY.....	161
Bustonov Mansurjon Mardonakulovich	
IMPORTANT CHARACTERISTICS OF THE DEVELOPMENT OF E-COMMERCE SERVICES.....	169
Jurakulov Shohruh Bahtiyorovich	
AGRICULTURE PROMOTION AND DEVELOPMENT IN MOUNTAIN AND MOUNTAIN REGIONS.....	173
Abdulxayeva Gulshan Maxmudovna	
IMPROVING MECHANISMS FOR ENHANCING ECONOMIC EFFICIENCY IN SERVICE ENTERPRISES.....	178
Seytimbetov Kabul Serimbetovich	
INTEGRATION OF INTELLIGENT CONTROL IN DRYING SYSTEMS: PROCESS OPTIMIZATION THROUGH SENSORS, ARTIFICIAL INTELLIGENCE, AND MODULAR DRYING.....	184
Yangiboyeva Raxbaroy Mashrabboy qizi	
THEORETICAL MODELS AND CONCEPTS OF ECONOMIC DEVELOPMENT IN THE ENERGY SECTOR.....	190
Nigmatullaeva Gulchekhra Nurullaevna	
STATISTICAL ANALYSIS OF REGIONAL ECONOMIC POTENTIAL (A CASE STUDY OF NAMANGAN REGION).....	196
Tursinbayev Azizbek Nabijon o'g'li, Sirojiddinov Kamoliddin Ikromiddinovich	
DIRECTIONS FOR DEVELOPING INVESTMENT AND EXPORT IN REMOTE SERVICE ENTERPRISES.....	203
Uzakov Ortik Shaymardanovich	
SPECIFIC FEATURES OF ENTREPRENEURSHIP IN INCREASING THE INCOME OF THE POPULATION IN THE REGION.....	207
Kuldasheva Maftuna Musurmon kizi	
KEY FACTORS OF ATTRACTING INVESTMENT THROUGH SUBSIDIES AND INVESTMENTS TO INCREASE AGRICULTURAL CROP PRODUCTION IN UZBEKISTAN.....	211
Mamatkulova Nadira Makkamovna	
RAQAMLI MARKETING VA INNOVATSION TEXNOLOGIYALAR ASOSIDA EKOTIZIM SAMARADORLIGINI OSHIRISH USULLARI.....	216
Sobirov Azizbek Avazbekovich	
WAYS TO IMPROVE THE STATISTICAL ASSESSMENT OF FRUIT AND VEGETABLE PRODUCTION PROCESSES AND EXPORT POTENTIAL IN THE REPUBLIC OF UZBEKISTAN.....	223
Anorboeva Bakhtijamol Daniyar kizi	

THE IMPACT OF DEGRADATION ON THE OPERATIONAL CHARACTERISTICS OF PHOTOVOLTAIC
MODULES UNDER SHARPLY CONTINENTAL CLIMATIC CONDITIONS 229
Qurbanov Yunus Murtaza o'g'li

INTEGRATED NEW MEDIA OPERATION MODEL FOR INTELLIGENT TALENT ASSESSMENT
PLATFORMS: THE PATH OF QR CODE ACTIVATION AND CONTENT-DRIVEN ENGAGEMENT..... 235
Wang Biao

METHODOLOGICAL FOUNDATIONS FOR SHAPING THE CREATIVE ACTIVITY OF YOUNGER PUPILS
IN SOLVING MATHEMATICAL PROBLEMS 239
Dzhurakulova Adolat Khalmuratovna

METHODOLOGICAL FOUNDATIONS FOR SHAPING THE CREATIVE ACTIVITY OF YOUNGER PUPILS IN SOLVING MATHEMATICAL PROBLEMS

Dzhurakulova Adolat Khalmuratovna

Senior Lecturer, Department of Primary Education,
Termez State University, Uzbekistan

ORCID: <https://orcid.org/0009-0005-3521-5356>

Abstract: If education and training are considered necessary for young students to achieve many achievements and high goals in society, then creative thinking is considered important for the development of today's youth. Especially, the current development of scientific knowledge, the impact of creativity on the development of the individual, society and the state requires a deep study of this issue from a scientific and pedagogical point of view.

So, a primary school teacher can find the most effective way in any situation, any process and at any time and effectively organize the lesson process by putting it into practice, convenient, easy and efficient delivery can also be said to be a form of creativity.

The article discusses the methodological basis for the formation of the creative activity of primary school pupils aimed at the formation of creative activity by solving tasks related to the search for mathematical laws in the process of teaching mathematics, the tasks of searching patterns with geometrical content, which are actively working on the development of speech as well as visually illustrating new concepts.

Key words: primary school, mathematics, learning process, mathematical laws, problem solving, creativity, education.

Annotatsiya: Agar ta'lim va tarbiya yosh o'quvchilarning jamiyatda ko'plab yutuqlarga va yuksak maqsadlarga erishishi uchun zarur deb hisoblansa, unda ijodiy fikrlash bugungi yoshlarning rivojlanishi uchun muhim hisoblanadi. Ayniqsa, ilmiy bilimlarning hozirgi rivojlanishi, ijodkorlikning shaxs, jamiyat va davlat rivojlanishiga ta'siri bu masalani ilmiy va pedagogik nuqtai nazardan chuqur o'rganishni talab qiladi.

Shunday qilib, boshlang'ich sinf o'qituvchisi har qanday vaziyatda, har qanday jarayonda va istalgan vaqtda eng samarali yo'lni topib, dars jarayonini amaliyotga tatbiq etish orqali samarali tashkil qilishi mumkin, qulay, oson va samarali o'qitish ham ijodkorlikning bir shakli deb aytilish mumkin.

Maqolada matematika o'qitish jarayonida matematik qonunlarni qidirish bilan bog'liq vazifalarni hal qilish orqali ijodiy faoliyatni shakllantirishga qaratilgan boshlang'ich sinf o'quvchilarining ijodiy faoliyatini shakllantirishning metodologik asoslari, nutqni rivojlantirish ustida faol ish olib borayotgan, shuningdek, yangi tushunchalarni vizual tarzda tasvirlaydigan geometrik mazmunli naqshlarni qidirish vazifalari muhokama qilinadi.

Kalit so'zlar: boshlang'ich maktab, matematika, o'quv jarayoni, matematik qonunlar, muammolarni yechish, ijodkorlik, ta'lim.

Аннотация: Если образование и обучение считаются необходимыми для достижения молодыми людьми многих успехов и высоких целей в обществе, то творческое мышление рассматривается как важный фактор развития современной молодежи. Особенно, учитывая современное развитие научных знаний, влияние творчества на развитие личности, общества и государства, этот вопрос требует глубокого изучения с научно-педагогической точки зрения. Таким образом, учитель начальной школы, находящий наиболее эффективный способ в любой ситуации, любом процессе и в любое время, а также эффективно организующий учебный процесс, благодаря его применению на практике, может также считаться удобной, легкой и эффективной подачей материала.

В статье рассматриваются методические основы формирования творческой деятельности учащихся начальной школы, направленные на развитие творческой активности путем решения задач, связанных с поиском математических законов в процессе обучения математике, задач поиска закономерностей с геометрическим содержанием, которые активно работают на развитие речи, а также визуально иллюстрируют новые понятия.

Ключевые слова: начальная школа, математика, учебный процесс, математические законы, решение задач, творчество, образование.

INTRODUCTION

The primary school teacher's first task is not to miss the sensitive period which is the most favorable for the formation of students' creative activity. Otherwise, what scientists-psychologists have termed as NUVERS will happen - irreversible fading of opportunities for effective development of abilities. At the same time, the improvement of reproductive thinking cannot be neglected either because it is "an important component of creative activity (especially at the initial and final stages of problem solving)". And yet the main value of education nowadays is the formation of creative personal qualities in a person, the need and opportunity to go beyond what is being studied, the ability to self-development, continuous self-education [1].

As a means of solving the problem of shaping the creative activity of younger pupils, we have chosen pattern finding tasks. This was done for the following reasons:

They are a logical continuation of the teaching of mathematics in kindergartens. The pre-school mathematics curriculum provides for work on tasks containing questions of the following kind: "What has changed in the second figure (picture) compared to the first one?", "How to continue the started row?", "Which figure out of three is superfluous?", etc:

- do not require a fundamental restructuring of the current programme;
- affect the development of patterns;
- have a significant impact on the development of analytical and synthetic activities, as confirmed by statistical processing of the experimental training data.

LITERATURE REVIEW

Until now, pattern finding tasks (whether general patterns or mathematical ones) have not been separately identified in the teaching and learning literature. For this reason, their definition has not been given either. These tasks are presented only as tests in some publications (first of all, by G.J. Eisenk). In our study we focus on the term "task", using a selection of definitions of this term which are presented in the work of G.I. Sarantsev [20].

"The most widespread is the definition of a task as a system (G.A. Ball, Y.M. Kolyagin, L.M. Friedman, A.F. Esaulov). Thus, Yu. M. Kolyagin suggests that by a task we understand a particular state of a "man - task situation" system, where the second component of the system is a set of elements interconnected through some properties of relations [5]. If the subject, who has come into contact with a situation, does not know at least one element, property or relation and has the need to establish the unknown elements, properties or relations of this situation, then the latter becomes a task for him. At the same time, the authors delineate in different ways the range of phenomena that belong to the scope of the concept of task. Some use the term "task" to denote objects belonging to the category of goals of actions of the subject, requirements imposed on the subject (A.N. Leontiev), others refer to the category of a situation including, along with the goal, the conditions in which it is to be achieved (L.L. Gurova, Y.M. Kolyagin [19], Y.N. Kulutkin, A.F. Esaulov, P.M. Erdniev, etc.), others refer to the category of a verbal formulation of this situation (L.M. Friedman). The most common is the use of the term "task" to refer to a situation that includes a goal and the conditions for achieving it [24].

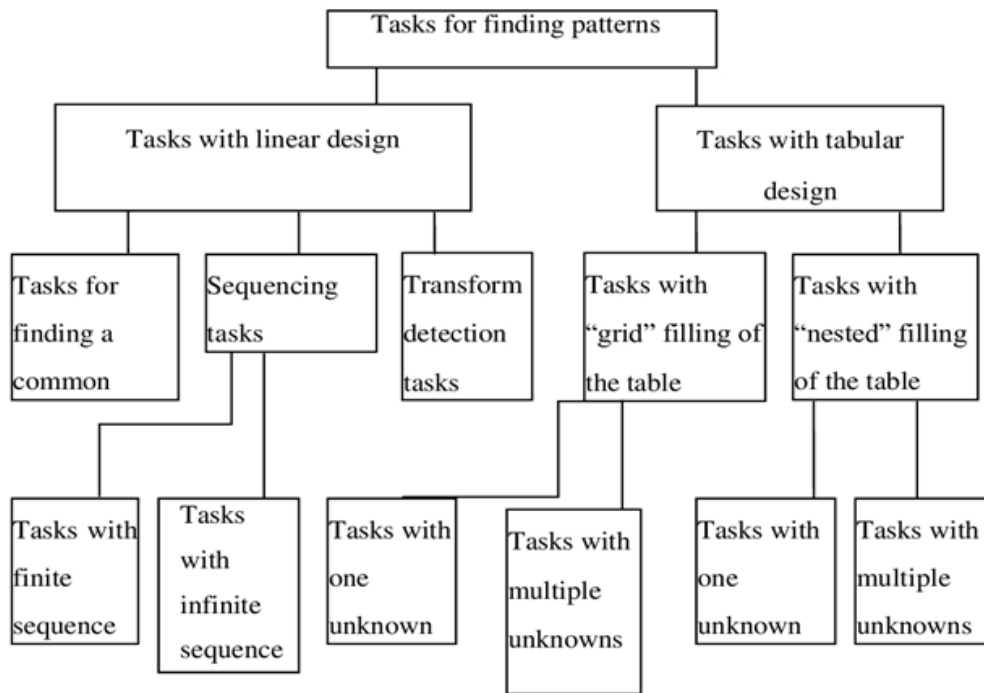
DISCUSSION

We will use the latter definition of a task as a situation involving a goal and a condition to achieve it in our work.

Thus, in our research, we understand pattern finding problems to be those whose solution is logically conditioned by the regularity of changing features.

The mathematical pattern finding problems include both arithmetical and geometrical problems.

An analysis of many works which at least mention pattern-finding tasks (although they are not named as such), allowed us to typify these tasks for younger pupils. Typification was made on the basis of the mutual arrangement of objects in the task condition (Scheme 1).



Scheme 1.

As we see, all problems in search of regularities are divided into two large groups - problems with linear construction and with tabular construction. When elements of a problem are arranged in one or more unconnected lines, we speak of problems with linear construction; when elements of a problem are arranged in the form of a table, we speak of problems with tabular construction [14].

But before describing specific pattern seeking tasks, it is necessary to talk about a learning task. According to A.N. Leontiev, by a learning task we mean a goal set in certain conditions, which can be achieved by implementing certain actions on the part of the learner and the instructor. The learning task is the main component of learning activity. On the one hand, it clarifies general learning objectives, specifies cognitive motives, and on the other hand, helps to make the process of activity itself meaningful. In the process of solving learning tasks, changes in the cognitive processes and personal qualities of the pupil take place.

There are different types of learning tasks: private, local, general and prospective. All types of learning tasks are interrelated in the learning process: solving local and private tasks is usually accompanied by solving general and prospective ones [14].

The following learning objectives are set for primary school students in our study. The prospective learning task is to develop analysis, synthesis, generalisation, comparison, abstraction, concretization. The general learning task is related to each individual type of pattern finding task, etc. Here are examples of tasks with geometric content belonging to each of the typing groups.

To solve this type of problem, the following scheme is proposed, which the students should follow:

Compare the figures of the condition (find what they have in common and what they have in common).

Formulate the common feature(s) that unite the condition figures.

Based on the feature(s) formulated, find a figure from the range of suggested answers that corresponds to them.

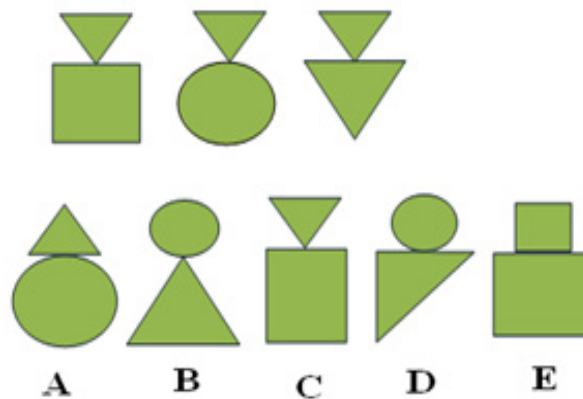
The peculiarity of this kind of problem is that a row with a choice of answers is obligatory for them. Otherwise, it is not possible to solve the problem.

RESULTS

All other groups can be either with or without a choice of answers. In both cases the problems are solvable. That is, the images that are offered as suggested answers are used only to confirm the answer found on the basis of analysis of the figures. Therefore, they should not be shown to children while searching for a solution to the problem. Otherwise, the attention is focused not on the solution of the problem, but on the choice of the figure they like. Sometimes the child's eyes get lost and he/she "chooses" at random.

During the geometric problem solving process, speech development is actively pursued and new concepts are vividly illustrated.

For example: Task No. 1



Teacher: Look carefully at the figures in the first row. What do they have in common? Which figure could continue the row?

Pupils: The shape under the letter C. There is a triangle there.

Teacher: The figure under B also has a triangle.

Pupils: The triangle must be on top.

Teacher: Under the letter A is a triangle on top.

Pupils: But the triangle is turned like this (represents an inverted triangle).

Teacher: So the top figure is a triangle with the base facing upwards.

All sequence problems can have finite and infinite series. A finite series can be continued with one or more figures, an infinite series lasts as long as you like [14].

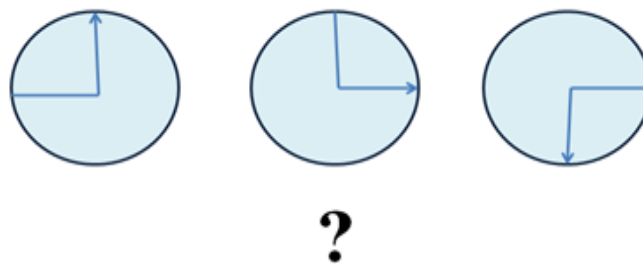
An example of a sequence problem with a finite number would be the following:

Task No. 2. Since in each subsequent figure one of the internal triangles is replaced by a circle, the next (and last) figure will be a figure consisting of four concentric circles. All triangles have been replaced by circles - so the row is complete.



Task No. 3.

The second-grade pupils find it very interesting when they solve the problem: "Continue the series"



Teacher: How do the figures change one by one?

Pupils: The hands are turning.

Teacher: How do they turn?

Pupils: That's it (show hands).

Teacher: Clockwise or anti-clockwise? Look carefully.

Pupils: Clockwise.

Teacher: By how much does it turn?

Pupils (thinking): For three hours.

The solution is given correctly. Et cetera.

The pattern problems are solved both orally and as a self-study exercise to reinforce the new material and to check what has been learned.

When comparing the instructions enclosed with the different types of tasks, it is clear that they are broadly similar. However, each of them has its own peculiarity. For example, when solving problems on finding common features, comparing figures in order to find common and different features, attention should be focused on common features, which are the basis for all tasks of the group. And when solving transformation problems first of all attention is paid to distinctions of figures, which is fundamental for this group of problems. And so on.

We have looked at the examples that make up the group of linear design problems. Let's move on to tabular construction [1].

As mentioned above, we will refer to tasks with tabular construction as those whose conditions are arranged in the form of a table.

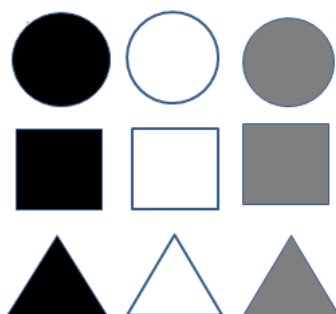
When comparing the instructions enclosed with the different types of tasks, it is clear that they are broadly similar. However, each of them has its own peculiarity. For example, when solving problems on finding common features, comparing figures in order to find common and different features, attention should be focused on common features, which are the basis for all tasks of the group. And when solving transformation problems first of all attention is paid to distinctions of figures, which is fundamental for this group of problems. And so on.

We have looked at the examples that make up the group of linear design problems. Let's move on to tabular construction.

As mentioned above, we will refer to tasks with tabular construction as those whose conditions are arranged in the form of a table.

Let's look at an example of what a "grid" table is like.

Task No. 4.



The proposed problem identifies two features by which changes occur: shape changes vertically, colour changes horizontally. Horizontally the shape remains unchanged, the colour does not change vertically. Consequently, the condition of a problem with a "grid" table can be represented as a valid (conventional) tables, titling the columns and rows:

The solution to the problem comes down to "seeing" this table and filling in the empty cell according to the row and column names.

It is recommended to solve the grid problems using the following plan:

Compare the figures in the columns (find what they have in common and what they have in common).

Compare the figures in the lines (find what they have in common and what they have in common).

Formulate the feature by which the figures in the columns change.

Formulate the feature by which the figures in the lines change.

Use the features of the changes in the figures to fill in the empty cells in the table.

As with linear construction problems, tabular construction problems (and with 'grid' filling as well) may be offered with answer options [14].

Each time an answer is given (right or wrong), the teacher should ask the pupil to argue their choice, to prove that they are right. Why did he choose this figure and not the other one?

In gridded problems, there may be more than one blank cell (one question mark). The most important thing to watch out for in a grid problem is that one column and one row should be filled in completely each time. The maximum possible number of empty cells in a nine-cell table is four. However, it is advisable to give problems with several unknowns to the second grade at the earliest.

The solution to the problem comes down to "seeing" this table and filling in the empty cell according to the row and column names.

It is recommended to solve the grid problems using the following plan:

Compare the figures in the columns (find what they have in common and what they have in common).

Compare the figures in the lines (find what they have in common and what they have in common).

Formulate the feature by which the figures in the columns change.

Formulate the feature by which the figures in the lines change.

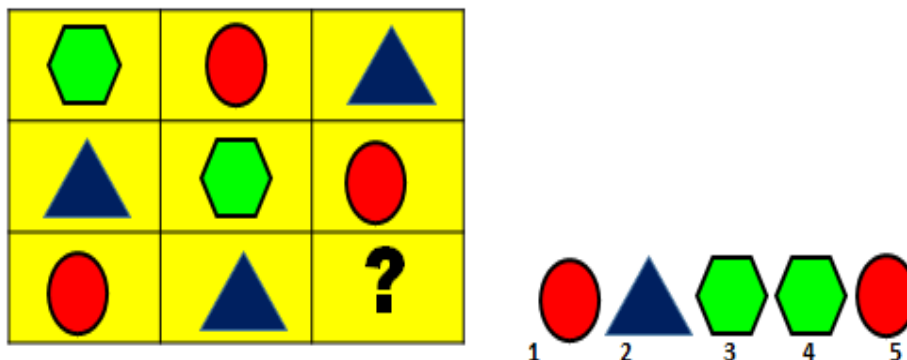
Use the features of the changes in the figures to fill in the empty cells in the table.

As with linear construction problems, tabular construction problems (and with 'grid' filling as well) may be offered with answer options.

Each time an answer is given (right or wrong), the teacher should ask the pupil to argue their choice, to prove that they are right. Why did he choose this figure and not the other one?

In gridded problems, there may be more than one blank cell (one question mark). The most important thing to watch out for in a grid problem is that one column and one row should be filled in completely each time. The maximum possible number of empty cells in a nine-cell table is four. However, it is advisable to give problems with several unknowns to the second grade at the earliest.

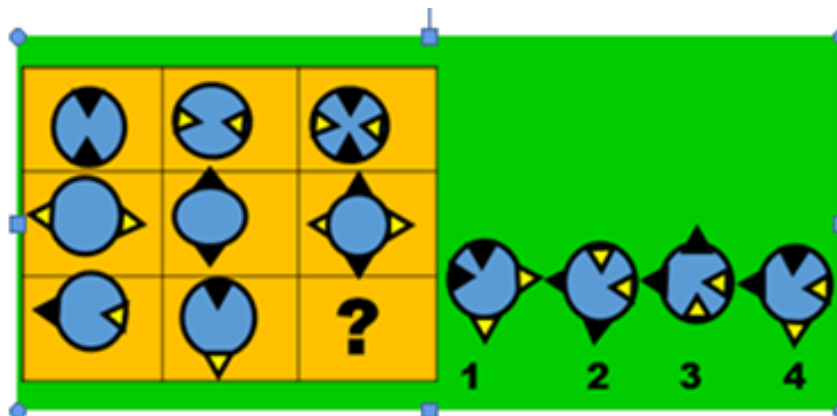
Task No. 5.



Of course, this task offers more opportunities to develop thinking than the one where only one figure is unknown.

The last group of all the variety of pattern-finding tasks is the "nested" table tasks. Let us also consider these problems with the help of a concrete example:

Task No. 6.



In contrast to the "grid" filling, in this problem all features (in our case three - the outer shape, the inner shape and the colour of the inner figure) change both horizontally and vertically. Each figure is, as it were, responsible for itself, forming a single "nest", but is of course in relationship to its neighbours both vertically and horizontally [10].

The following scheme is proposed to solve this type of problem:

Compare the figures in the table (find out what changes in the figures).

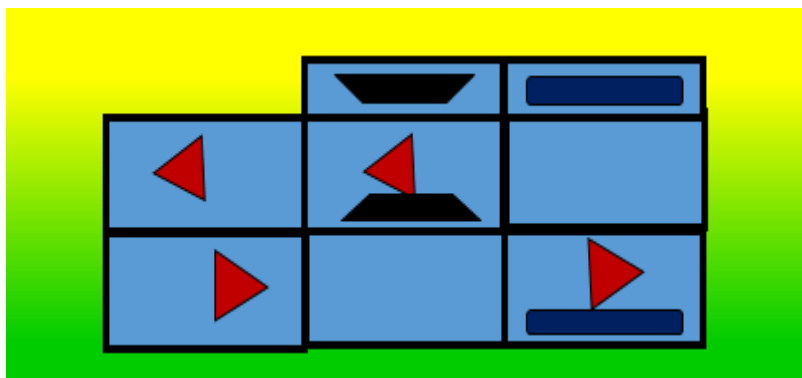
Formulate the characteristics by which the figures change.

3. Use the empty cells in the table to fill in the empty cells, one by one, according to the attributes.

For tasks with a "nested" table, answer options may also be provided. We will not dwell on this, as they are identical to those given above.

But problems of this type with several unknowns, unlike the "grid" ones, have their own peculiarity. It is necessary to add at least one more filled cell on one of the verticals and horizontals to the completely filled cells. Otherwise, it would be almost impossible for primary school pupils to solve the problem.

Task No. 7



We have considered all types of pattern finding tasks, which have been grouped together into appropriate groups.

CONCLUSION

However, it is often not possible to link the pattern finding problems to the topic being studied. This is mainly due to the small amount of geometric material taught in primary school. For this reason we offer you to work orally on patternfinding problems with geometric content. This will help to diversify this arithmetic-loaded stage of the lesson and will have an impact on the development of imaginative thinking.

So, we propose pattern finding tasks as a means to solve the problem of shaping the creative activity of younger pupils. Our study also provides a definition of these tasks [11].

The proposed typification of pattern finding tasks, made on the basis of the construction, allows one to navigate in the whole variety of these tasks and provides the possibility to use them in practical activities.

REFERENCES

1. Adolat, J. (2022). The Concept of Communication Abilities in Psychology. EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION, 2(5), 298-300.
2. Адизов Б.Р. Ижодий таълим жараёнига тизимли ёндашув // Халқ таълими. – Тошкент, 2001. – № 4, В. 102–104. (Adizov B.R. A systematic approach to the process of creative education // Public education. - Tashkent, 2001. - No. 4, P. 102-104.)
3. Айзенк Г.Дж. Узнай свой собственный коэффициент интеллекта. - М.: Айкью, 1995 - 171 с. (Eysenck G.J. Find out your own IQ. - M.: Aiku, 1995 - 171 p.)
4. Артемов А.К. Задачный подход в подготовке учителя к обучению математике // Начальная школа. – Москва, 2002. – № 2. В. 114–118. (Artemov A.K. Task-based approach to teacher preparation for teaching mathematics // Primary school. – Moscow, 2002. – No. 2. В. 114–118.)
5. Балл Г.А. О психологическом содержании понятия «задач» // Ж. Вопросы психологии, 1970, № 6, -Б. 75-85. (4. Ball G.A. On the psychological content of the concept of "tasks" // Journal of Psychology Issues, 1970, No. 6, -B. 75-85.)
6. Волкова С. И., Столярова Н. Н. Развитие познавательных способностей детей на уроках математики в 1 классе. - М.: Просвещение, 1994. - 64 с. (Volkova S.I., Stolyarova N.N. Development of children's cognitive abilities in mathematics lessons in 1st grade. - M.: Education, 1994. - 64 p.)
7. Ғозиев Э., Икромов Ж. Мустақил фикрлашнинг комилликка таъсири // Халқ таълими. – Тошкент, 2001. № 4. – Б. 31–37. (G'oziev E., Ikromov J. The influence of independent thinking on perfection // Public education. - Tashkent, 2001. No. 4. - B. 31–37.)
8. Ғозиев Э.Г. Психология. – Т.: Ўқитувчи, 1994. – 224 б. (Ghaziev E.G. Psychology. - T.: Teacher, 1994. - 224 p.)
9. Давыдов В.В. О понятие развивающего обучения / Педагогика. 1995. № 1. С. 29 - 39. (Davydov V.V. About the concept of developmental education / Pedagogy. 1995. No. 1. P. 29 - 39.)
10. Джуракулова А. Х., Жўраева Д. Ш. Бошланғич синф математика дарсларида ностандарт масалаларни мулоҳаза юритиш усули билан ечиш // Современное образование (Узбекистан). – 2016. – № 9. – С. 51-56. (Djurakulova A. Kh., Juraeva D. Sh. Solving non-standard problems in elementary mathematics lessons by reasoning //Sovremennoe obrazovanie (Uzbekistan). – 2016. – no. 9. - S. 51-56.)
11. Джуракулова А.Х. Математика дарсларида ижодий саводхонликни шакллантириш // Мактаб ва ҳаёт. – Тошкент. 2010. – № 2. – Б. 8–9. (Djurakulova A.Kh. Formation of creative literacy in mathematics lessons // School and life. - Tashkent. 2010. – No. 2. – B. 8–9.)
12. Джуракулова А.Х. Творческая деятельность учащихся начальных классов как основа развития математических способностей студентов Республики Узбекистан // Мир образования – образование в мире. – Москва. 2010. – № 4. – С. 76–80. (Dzhurakulova A.Kh. Creative activity of primary school students as the basis for the development of mathematical abilities of students in the Republic of Uzbekistan // World of Education - Education in the World. - Moscow. 2010. – No. 4. – P. 76–80.)

13. Джуракулова А.Х. Ўқувчиларнинг қобилиятини шакллантиришда ностандарт масалалар аҳамияти // Ўзбекистонда ижтимоий фанлар. Ўзбекистон Республикаси Фанлар академияси. – Тошкент. № 1–2. 2011. – Б. 139–140. (Djurakulova A.Kh. The importance of non-standard issues in the formation of students' abilities // Social sciences in Uzbekistan. Academy of Sciences of the Republic of Uzbekistan. - Tashkent. No. 1–2. 2011. – B. 139–140.)
14. Джуракулова, А. Х. (2023). Дифференцированный подход учащимся при решении задач на поиск математических закономерностей. Central Asian Journal of Literature, Philosophy and Culture, 4(6), 238-244. (14. Djurakulova, A. X. (2023). Differentsirovanny podkhod uchashchimsya pri reshenii zadach na poisk matematicheskikh zakonomernostey. Central Asian Journal of Literature, Philosophy and Culture, 4(6), 238-244.)
15. Дмитриева О.И. Поурочные разработки по математике к учебному комплекту 4–класс. – М.: Вако 2007. 2–изд. 400 с. (Dmitrieva O.I. Lesson development in mathematics for the 4th grade educational kit. – М.: Vako 2007. 2nd ed. 400 s.)
16. Дорофьев Г.В., Миронова Т.Н. Методическое пособие к учебнику “Математика. 1–класс”, пособие для учителя. – М.: Просвещение 2007. – 95 с. (Dorofyev G.V., Mironova T.N. Methodical manual for the textbook “Mathematics. 1st grade”, a manual for teachers. – М.: Education 2007. – 95 p.)
17. Епишева О.Б., Крупич В.И. Учить школьников учиться математике: Формирование приемов учебной деятельности. - М.: Просвещение, 1990. - 128с. (Episheva O.B., Krupich V.I. Teaching schoolchildren to learn mathematics: Formation of teaching methods. - М.: Education, 1990. - 128 p.)
18. Зайцева С.А. Методика обучения математике в начальной школе. – М.: Владос 2008. – 238 с. (Zaitseva S.A. Methods of teaching mathematics in elementary school. – М.: Vlados 2008. – 238 p.)
19. Колягин Ю.М. Задачи в обучении математике. Часть 2. - М.: Просвещение, 1977. - 144 с. (Kolyagin Yu.M. Objectives in teaching mathematics. Part 2. - М.: Education, 1977. - 144 p.)
20. Саранцев Г.И. Упражнения в обучении математике. - М.: Просвещение, 1995. - 240 с. (Sarantsev G.I. Exercises in teaching mathematics. - М.: Education, 1995. - 240 p.)
21. Теоретические основы методики обучения математике в начальных классах / Под ред. Н. Б. Истоминой - М.: Изд-во «Ин-т практич. психологии», Воронеж: НПО «МОДЭК», 1996. - 224 с. (Theoretical foundations of methods of teaching mathematics in primary school / Ed. N. B. Istomina - М.: Publishing House “Institute of Practical Sciences. psychology”, Voronezh: NPO “MODEK”, 1996. - 224 p.)
22. Формирование учебной деятельности школьников / Под ред. В.В. Давыдова, И. Лопшера, А.К. Марковой. - М.: Педагогика, 1992. - 216 с. (Formation of educational activities of schoolchildren / Ed. V.V. Davydov, I. Lopshera, A.K. Markova. - М.: Pedagogy, 1992. - 216 p.)
23. Царева С.Е. Непростые простые задачи // Ж. Начальная школа, 2005, № 1, -Б. 49-57. (Tsareva S.E. Difficult simple tasks // Zh. Elementary school, 2005, No. 1, -B. 49-57.)
24. Эрдниева Б.П. О технологии творческого обучения математике // Математика в школе. 1990.№6. С.15-18. (Erdnieva B.P. On the technology of creative teaching in mathematics // Mathematics at school. 1990.No6. P.15-18.)

Proofreader: Zokir ALIBEKOV

Layout and Designer: Oloviddin Sobir ugli

2025. № 12

© When materials are reproduced, the INNOVATION SCIENCE AND TECHNOLOGY journal must be cited as the source. Authors are responsible for the accuracy of the information in materials and advertisements published in the journal. Editorial opinions may not always align with those of the authors. Submitted materials will not be returned to the editorial office.

To publish articles in this journal, you may submit articles, advertisements, stories, and other creative materials through the following links. Materials and advertisements are published on a paid basis.

You may subscribe to the journal at any time using the following details. Once subscribed, please send a screenshot or photo of your payment confirmation to our Telegram page @iqtisodiyot_77. Based on this, we will send the latest issue of the journal to your address each month.

“The journal “INNOVATION SCIENCE AND TECHNOLOGY” has been registered by the Agency for Information and Mass Communications under the Administration of the President of the Republic of Uzbekistan from 09.10.2024 under the registration number №390637. License number: C-5669633. PNFL: 30407832680027

Our address: Tashkent city, Yunusobod district, 19th block,
House 17.




Acceptance of articles
Published every
monthly


Directions
Social, economic, political,
technological, scientific

 **Scopus || Scientific electronic journal specializing in Scopus**

CERTIFICATE NUMBER: №390637

**ORDER NUMBER ACCORDING TO
THE LICENSE REGISTER: C-5669633**

CONTACT:

 Contact us
+998 50 737 87 88

 Telegram channel
t.me/scopus_IST2100

 Journal official website
<https://ist-journal.uz/index.php/IST>