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Regarding the matter of Psychological and Linguistic Basics for the Formation of Foreign Language Culture at Elementary school

Elementary school is an important stage in the formation of the human personality, it lays the foundation for further education and upbringing. The general culture of the junior school student is interpreted as "a set of views, assimilated knowledge, moral, spiritual values, formed abilities and skills, features of behavior and activity, based on the culturally-oriented attitude of the child to himself, society and the surrounding world. A junior school student with a general culture is a forming personality with spiritual, moral and intellectual content, the creative orientation of development, assimilating general cultural values, moral norms, and standards of behavior" [1].

The formation of the general culture of a junior school student is understood as "a pedagogical process in which based on the unity of goals (values), humanistic content, forms, means, methods of education and training the formation of personality, developed in general cultural respect, expressed in positive motivation, information content, reflection in behavior and activity of the child" [1].

Junior school-age is the age of 6-11-year-old children studying in 1-4 grades of elementary school. The boundaries of age and its psychological characteristics are determined by the educational system accepted for this period, the theory of mental development, psychological age periodization [2].

The essence of formation of learning activity consists, in our opinion, in creating conditions in which a student becomes a subject of the learning process, that is, the formation of learning activity turns into the most important task, which requires changing the purpose of the learning process itself, its organization.

Successful formation of learning activity of junior high school students can be provided by observing several didactic conditions. Didactic condition is defined by

various scientists as the environment of the learning process, which is the result of purposeful selection, design, and application of elements of content, methods, as well as organizational forms of learning to achieve certain didactic goals [3].

V.V. Davydov, D.V. Elkonin, I.V. Dubrovina, N.F. Talysina, L.S. Vygotsky wrote that thinking, especially verbal-logical thinking, develops most actively during elementary school education. At the junior school age the vocabulary increases, the grammatical structure of speech improves, and the morphological system of language is mastered. Developing speech restructures other cognitive processes (perception, attention, memory, thinking, imagination). The development of all aspects of speech is in direct dependence on the child's living conditions and upbringing.

According to L.S. Vygotsky, the processes of mastering the native and non-native languages are separated first of all by an element of consciousness and intentionality, characteristic for mastering the second language and missing at mastering the native language [4]. According to his theory, the development of the native language "comes from the bottom up", while the acquisition of a non-native language is directed "from the top-down". It means that the child who hears the speech addressed to him from his early childhood does not set a goal to master this language. He or she spontaneously relates what is said to the situation at hand and gradually dissects this audible stream of speech into meaningful segments, i.e., "goes from the bottom up. In other words, theoretical information about language is based on already existing speech skills and the perception of the native language proceeds in a direct connection with the knowledge of objective reality.

Mastering of the second (non-native) language occurs based on the native language, essentially differing from the natural development of native speech. "If the development of a native language begins with free spontaneous use of speech and comes to the end with awareness of speech forms and mastering them, development of a foreign language begins with awareness of language and involuntary mastering of it and comes to the end with free spontaneous speech" [4]. A student learning a non-native language acquires speech skills by observing patterns and acquiring theoretical information about the language being learned. "The foreign word learned by the child

does not refer to the subject directly and not directly, but indirectly, through the words of the native language" [4].

Thus, the process of formation of foreign language culture is subordinated to the psychological and linguistic features of younger students and is carried out in an inseparable connection with them.

The process of the formation of foreign language culture of junior high school students using the opportunities of CLIL technology in the 4th-grade science lessons. Let us consider the process of the formation of foreign language culture using the opportunities of CLIL technology on the basis of the system we have developed.

The lessons of the "Natural Science" discipline with the use of CLIL technology are conducted twice a week in the distance learning form. The system of lessons is made taking into account the model curriculum for the subject "Science" for grades 1-4 of the primary education level.

One of the conditions of the subject-language integrated teaching - a rich cognitive authentic learning material is observed through the proper selection of texts to work with the use of different graphic organizers.

Graphic organizers are visual aids that help students organize content in graphic form. Graphic organizers in the use of CLIL technology act as an aid in helping students create an oral or written statement to demonstrate understanding and application of subject content and/or language. The following graphic organizers are often used in CLIL technology:

- Atomistic mind maps or mind maps are used to divide a topic into parts, such as displaying a list of facts about people, places, objects, or events;

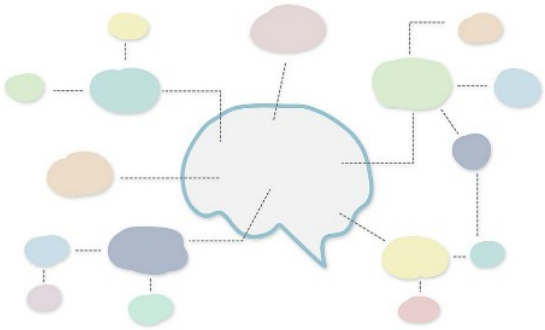


Figure 1 – Mind map template.

– Tables - used to classify information using columns and headings;

Полезное ископаемое	Способ добычи

Figure 2 - Standard table template.

– True/False tables - help identify each student's gaps in learning by using true and false facts about a topic.

Statement	True	False

Figure 3 - True/False table template.

– T-charts - to show two sides of a topic, for example, arguments for and against, advantages and disadvantages;

Advantages	Disadvantages

Figure 4 - T-chart template.

– Diagram "tree" - used to show hierarchical relationships;

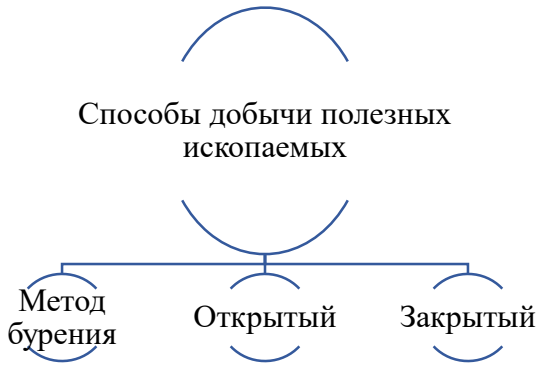


Figure 5 - Diagram Template "tree".

– Venn Diagram - used to show similarities and differences between two or more objects. The Venn Diagram is an excellent tool for updating knowledge by finding similarities and differences. Work with the Venn Diagram follows the following algorithm: students are offered two topics for comparison, which are written in circles, then students write similarities in the middle (intersecting space) and differences in the space of each topic. This technology can be used in individual, paired, and group forms of work.

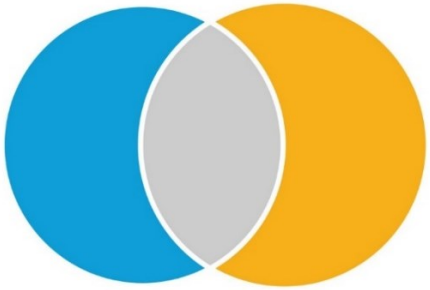


Figure 6 - Venn Diagram template.

As a practical material we have developed route sheets on "Natural Science" for the 4th grade. Figure 7 shows an example of a route sheet on the topic "How heat conduction is applied.

Figure 7 - Routing sheet on "How Thermal Conductivity is Applied".

The itinerary is a program of actions for the student to independently study the material of the lesson. The itinerary includes an algorithmized system of tasks aimed at mastering the topic from reproduction to creative action.

The use of route sheets helps to easily and clearly trace the dynamics of successes and failures of each student in a distance learning environment. When route sheets are used, the teacher does not control the students' work, but only nudges and gently guides. The volume and amount of tasks on the worksheet and their number are determined by the degree of complexity of the material and topic; the characteristics and needs of the class; the general state of learning; the degree of formation of skills of independent learning activity.

For orientation during independent work with the route sheets the following system of conventional signs is offered:

 – Vocabulary;  – Study Assignment;

 – Conclusion on the topic in English;  – Homework;

At the beginning of any itinerary, there is a vocabulary of new vocabulary on the topic that the language goal of the lesson is aimed at. During the task, any student can refer to the vocabulary in case of difficulty.

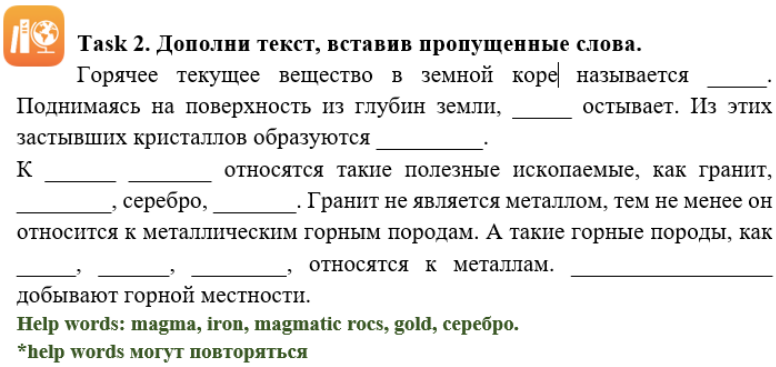
Two thematic tasks are then offered for the application of the acquired knowledge and practice of the studied vocabulary. Tasks can be performed both individually and in group form. The assignments are compiled using various graphic organizers and CLIL principles. The texts for work are selected taking into account subject knowledge, cross-curricular topics, and the peculiarities of perception by younger students.

As a result of the lesson and the actualization of the acquired knowledge, students are offered a finished conclusion on the topic in English. Only the vocabulary studied by children is used in the conclusion. The conclusion is read out and discussed by the students. If necessary, students have the opportunity to supplement orally or in writing with their own conclusions and subjective discoveries.

Homework at the end of the lesson is often of a creative nature (creating a project, a model of a phenomenon, writing a report, etc.). Homework is aimed at consolidating and checking the subject knowledge and the studied English vocabulary on the topic of the lesson.

As part of the study of educational topics in the subject "Natural Science," the following work on the route sheets is organized.

During the study of new material, students are told words and terms in English in the context of a cognitive text. For example, when studying the topic "What are minerals" students are offered the following task:



Task 2. Дополни текст, вставив пропущенные слова.

Горячее текущее вещество в земной коре называется _____. Поднимаясь на поверхность из глубин земли, _____ остывает. Из этих застывших кристаллов образуются _____.

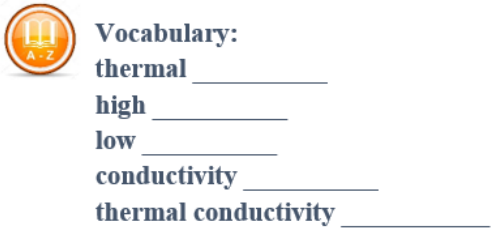
К _____ _____ относятся такие полезные ископаемые, как гранит, _____, серебро, _____. Гранит не является металлом, тем не менее он относится к металлическим горным породам. А такие горные породы, как _____, _____, _____, относятся к металлам. _____ добывают горной местности.

Help words: magma, iron, magmatic rocs, gold, серебро.

***help words могут повторяться**

Figure 8 - Text assignment.

The above task does not cause difficulties for students, because at the beginning of each topic children study and memorize a specially selected list of natural science concepts and terms in English (Figure 9), the process of studying and using them in speech is aimed at the tasks of the route sheet developed by us.



Vocabulary:

thermal _____

high _____

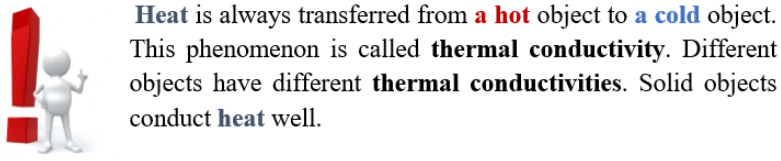
low _____

conductivity _____

thermal conductivity _____

Figure 9 - Vocabulary.

When using our developed itinerary, students are presented with a clearly articulated summary of the topic in English at the end of each lesson, from which students can formulate their own conclusions. For example, the conclusion of the topic "How Thermal Conductivity is Used" is shown in Figure 10.



Heat is always transferred from **a hot** object to **a cold** object. This phenomenon is called **thermal conductivity**. Different objects have different **thermal conductivities**. Solid objects conduct **heat** well.

Figure 10 - Conclusion on "How thermal conductivity is applied".

Also for the productivity of work with texts we used such a method of processing educational material as the creation of mind maps. An undoubted advantage of this method is that it is possible to organize different forms of student work: individual, pair, group, and frontal. When working in pairs or groups, students interact with each

other while solving the task of participating in dialogue and/or a polylogue on the topic. We have developed different mind-maps and tasks for the 4th-grade students when creating their itineraries. For example, when studying the topic "How heat conductivity is used", students are asked to consider images (Figure 11) and, based on the identified properties, complete the diagram (Figure 12). The work on the task can be organized individually or in pairs. The result will be a scheme in which students recognize which properties to assign to the pictures presented. This task simultaneously solves the linguistic goal - to recognize the studied foreign language vocabulary in the context of the topic and the learning goal - to determine the thermal conductivity of substances and objects.

Figure 11 - Visual material for the task

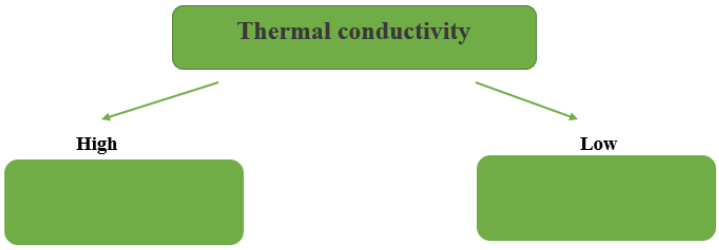


Figure 12 - Template for creating a scheme.

As part of our work on the cognitive text we also used a type of organizer such as the Venn Diagram. For example, in the context of the lesson topic "What are minerals. How minerals are formed." students work on differentiating the concepts of

natural resources and minerals with the help of making a diagram (Figure 13)

Figure 13 - Venn diagram "Natural Resources and Minerals".

To complete this assignment successfully, students will need to determine what "Natural Resources" and "Minerals" are. Then, based on their existing knowledge, find the similarities and differences between these concepts.

The next cognitive text technique that we applied in our system is True/False tables, which help check the assimilation of the listened or read text. In the context of the topic "What Bodies Conduct Electric Current" we used the following task (Figure 14).

Task 1. True or False. Определи истинность или ложность высказываний.

Sentence	True	False
Wire служит для передачи electric charge.		
Камень янтарь помог грекам открыть явление электризации.		
Все electric charge делятся на positive charge и negative charge.		
Rubber не проводит electric charge.		
Water в чистом виде хорошо проводит electric charge.		

Figure 14 - True/False table on "What Bodies Conduct Electric Current".

After studying the informational text on the topic proposed by the textbook in Russian, the students are offered to work on the table with the inclusion of the vocabulary already studied in previous lessons, which allows them to activate the vocabulary. The same technique is used when working on the topic "Ore minerals".

For teaching dialogical communication in English the following task is offered in the context of the topic "What are minerals. How minerals are formed" (Picture 15).

Task 2. Работа в парах. Распределите роли интервьюера и рабочего шахты. Проведите интервью, используя слова для справок.

Help words: Minerals, ore, mine, drilling, quarry, natural resources.

Figure 15 - Assignment for teaching dialogic communication in English.

The form of work in pairs and the use of the technique of interview with the use of reference words on the topic solves the following learning objectives: first, the teaching of dialogic communication, second, the active use of new vocabulary, and third, the independent organization of the students' work (distribution of roles, conducting interviews).

An important role in our system is played by tasks for teaching listening to English. Working on the topic of the lesson "What are minerals. How minerals are formed" students read the description of a substance then, after listening to its name in English, compare it with the text (Figure 16).

Task 2. Внимательно прочитай описание Combustible minerals, послушай ряд названий на английском языке и определи верное.

Чёрного цвета, блестящий, нежидкий, с запахом, легко ломается, горит.	Не имеет цвета, с запахом, горит, нежидкий, похож на воздух.	Чёрного цвета, блестящий, с запахом, не ломается, жидкий, в составе есть газ.
_____	_____	_____

Figure 16 - Assignment aimed at listening.

In "What Minerals are Like," one of the last lessons in our system, students are asked to listen to statements and determine their truth or falsity based on their language and subject knowledge (Figure 17).

Task 1. Внимательно послушай высказывания. Если высказывание верное подними руку.

1. **Aluminum is a heavy metal.**
2. **Бронза – это сплав меди и олова.**
3. **The base metals are derived from polymetals.**
4. **Латунь получают из бокситов.**

Figure 17 - A listening task.

To enrich the vocabulary of students in the context of the topic of the lesson we used the technique of making anagrams. The concept of "anagram" comes from the Greek words "per" and "letter". Thus, an anagram is a word obtained by rearranging

the letters. Anagrams are truly invaluable didactic material. We used this technique in the study of the topic "What are the metals" (Figure 18).

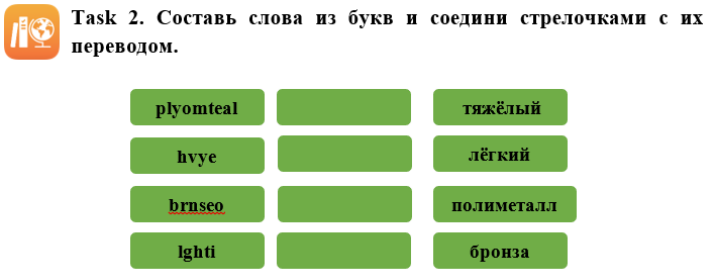


Figure 18 - Task "Anagrams".

In the above task, students not only solve an anagram but also determine the lexical meaning of words. Students at a higher level can be asked to form word combinations and sentences with the received words on the topic. This task can be offered for individual, pair, or group work.

For homework in our system of lessons, we have often used creative writing assignments in English that help solves lexical and cognitive problems simultaneously, such as the topic of the lesson "What are minerals. How minerals are formed" - prepare a message about one of the methods of mining minerals; the lesson topic "What bodies conduct electric current" - Prepare a short message in the form of a presentation (3-4 slides) in English about how electric conductivity is used in everyday life; the lesson topic "What are minerals" - create a poster using the studied terms in English on the topic "Formation of magmatic rocks" or "Formation of sedimentary rocks" at choice.

Thus, a teacher who works in the system of subject-linguistic integrated teaching has to use different technologies, methods, and techniques of lesson work.

The process of the formation of foreign language culture of junior schoolchildren using the opportunities of CLIL technology at the lessons of Natural Science in the 4th grade can be fully organized on the basis of the system developed by us.

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