

USING KEYS AS COMPETENCY-ORIENTED ASSIGNMENTS

Qo'qonboyeva Shaxlo Rafikjonovna
Qo'qon DPI fizika va astronomiya kafedrasida o'qituvchisi.

Ergashev Azamjon Anvarjon o'g'li
Qo'qon DPI fizika va astronomiya yo'nalishi talabasi

Yasharova Elnoraxon O'ktamjon qizi
Qo'qon DPI fizika va astronomiya yo'nalishi talabasi

ANOTATION

This article used keys as competency-oriented assignments, and carried out scientific research according to the research of Modern teachers.

Keywords: keys, assignment, technology, situation, method, student, problem, microwave.

According to the research of Modern teachers, the main problem of unwillingness to read is not knowing how to read. Teaching students to learn by reading them in relation to providing knowledge is a much more complex task. Accordingly, in teaching practice, it will be necessary to look for techniques and technologies that will help children acquire knowledge and understand why they are doing it.

One of the technologies that will help you do this is keys technology.

Keys will help the child understand why this topic is being studied, whether the knowledge gained in the lesson may be necessary for him.

Cases are discussed in groups, students remember where they faced the problem described in the text, questions and problems proposed in case are discussed together, children share their life experiences with each other, evaluate and discuss the experiences of their teammates. Recommended questions, situations, complement each other's knowledge by solving problems together. Unresolved questions during the discussion encourage children to read scientific literature, textbook, ask new questions born to their teacher, parents.

Case studies are another type of competence-oriented assignments. Case-study method or method of specific situations (English, case – Event (case), situation) is an active problem – situational analysis method based on learning by solving specific problems – situations (case solving). Keys is a story about an event (or sequence of events) in which a specific practical situation is brought, in which there are enough problems to solve further as a group. Keys is a single information Complex, consisting mainly of three sections: auxiliary information necessary to describe the case, a specific situation and analyze Keys, a description of a specific situation and an assignment for keys.

General algorithm for working with keys in the lesson:

1. The teacher's introduction.
2. Introducing students to the text of keys.
3. Determination of deadlines for work on Keys, assessment system.
4. Distribution of students in groups, Organization of group work.
5. Organization of discussion of the content of keys. The teacher conducts the discussion of keys in small groups, gives them additional information.
6. Solving case by students (answering questions or completing assignments).

7. Organization of presentations of groups.
8. Organization of general discussion.
9. Generalizing speech of the teacher, his analysis of the situation.
10. Student Assessment.

Below we will give examples of several keys that are used in physics education.

1-keys

The principle of operation of the microwave oven

Microwave oven-used to defrost food in everyday life, quickly cook or heat food using electromagnetic waves of the decimeter range (usually with a frequency of 2450 MHz). In industrial conditions, these furnaces are used to dry plastics, defrost, melt and soften adhesives, process ceramic materials, etc.k.used in. Unlike conventional ovens, the microwave not only heats the top of the product, but also heats it to a depth of about 2.5 cm in size. This will reduce the heating time of the product.

Heating in the oven is carried out on the principle of “replacing the dipole”. Molecular dipole displacement under the action of an electric field occurs in materials containing polar molecules. The energy of the vibrations of the electromagnetic field leads to a constant displacement of molecules, moving them along the lines of force of an electric field called the dipole moment. Since the field is variable, the molecules change direction from time to time. When moving, molecules vibrate, collide, hit each other, transferring energy to neighboring molecules in this material.

Since the temperature is directly proportional to the average kinetic energy of the movement of atoms or molecules in the material, such mixing of these molecules, by definition, increases the temperature of the material. Thus, dipole displacement is a mechanism for converting the energy of electromagnetic radiation into the thermal energy of a material. Heating in the microwave as a result of dipole displacement under the influence of a variable electric field depends on the properties of molecules and intermolecular interactions in the medium. For better heating, the frequency of the alternating electric field should be selected in such a way that the molecules reach full reposition for half a period.

Since water is present in almost all products, the frequency of the ultra-high-frequency irradiator of the microwave is selected in such a way as to better heat the water molecules in a liquid state. This heater heats ice, fat and sugar much worse.

Microwave radiation cannot penetrate metal objects, so food cannot be cooked in metal dishes. Metal objects (spoons, forks) that are in the oven while heating can damage it.

It is not necessary to put metal (“Golden water”) coated dishes on the surface of the microwave using a sprayer. The metal coating in the container heats up strongly with a homely vine, even if it is very thin. This thing can decompose the metal sprayed area of the container. You should not heat food in closed containers in the microwave and not heat whole bird eggs. Due to the strong evaporation of water, high pressure is created inside them, and as a result, they can explode. You also need to be careful when heating water in the microwave the water can overheat, that is, it can heat from the boiling point to a higher temperature. An overheated liquid can boil almost instantly from careless movements.

This applies not only to distilled water, but also to a liquid with slightly suspended particles. The smoother and more uniform the inner surface of the water tank, the higher the risk. If the container has a narrow neck, then there is a high probability that at the beginning of boiling, overheated water will overflow and burn your hands.

Keys questions:

Are you familiar with this device? What information was new to you and what was already known to you? Have you come across terms that you are not familiar with in Keys? How to determine their meaning?

What are the advantages of using this device in everyday life and what disadvantages do you see? What safety precautions should be observed when working with these household appliances?

For the next lesson, set tasks for yourself based on this situation.

The next keys are not usual. This is a video clip. However, not every video fragment can be keys. If a video fragment is not a real event that occurs in a person's life, then such a video fragment cannot be keys.

For Keys, the phenomenon method can be used, which implies working with additional sources of information.

2-keys.

Substance structure. Mutual attraction and repulsion of molecules.

Salima, a 6th grade student, and sister Rahima, her mother, are drinking tea in the morning. Salima poured himself tea, filling the bowl. Sister Rahima told him:

– "Pour a little of your tea back into the teapot, otherwise the tea will spill out when you mix the sugar with a spoon."

– "Of course I will pour it back a little into the teapot, because even if I put sugar in the tea, it can overflow," Salima agreed with a clever look.

- "You can put sugar, tea will not spill! But it will be inconvenient to mix it."

– "How not to spill, the bowl is already full!"- Salima was surprised.

Sister Rahima carefully put a spoonful of sugar in a teaspoon of tea. Tea from the bowl did not overflow.

– "How?"- exclaimed Salima.

- "Think about why this happened until the evening. We will discuss it together in the evening, and we will also invite physics to visit," sister Rahima said mysteriously.

Keys questions:

1. Have you ever observed a similar phenomenon in your life?
2. Why didn't tea overflow from the Cup when added sugar?
3. What safety rules should you follow when pouring hot tea?

Help can be obtained by reading the topics 10, 11 and 12 of the physics textbook of the 6th grade

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