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RECOMMENDATIONS FOR DEVELOPING STUDENTS' PHYSICAL LITERACY BASED ON THE PISA INTERNATIONAL ASSESSMENT PROGRAM

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Abstract
This article presents recommendations for the formation of the development of students' physical literacy within the framework of PISA - the international program for the assessment of student knowledge.

Keywords: PISA, Physical Science Literacy, International Assessment, International Experience, Science, Milly Curriculum, Ability, Creative Thinking, Application.

At a time when our life is rapidly developing on the path of innovative development, comprehensive support for the creative ideas and creativity of young people, who are the successors of our future, formation of their knowledge, skills and qualifications, as well as advanced foreign experiences, an international standard and improving the assessment system based on requirements, studying international experiences, comprehensive comparative analysis of the existing system, close cooperation with relevant international and foreign organizations, agencies, research institutions is important. For this purpose, with the decision of the Cabinet of Ministers of the Republic of Uzbekistan "On measures to organize international studies in the field of education quality assessment in the public education system" dated December 8, 2018 No. 997, the Quality of Education under the Cabinet of Ministers of the Republic of Uzbekistan The National Center for the Implementation of International Research on Education Quality Assessment was established under the supervision of the State Inspectorate. At the same time, the tasks of participation in international studies on the assessment of the quality of education were defined:

To date, it is planned to participate in PISA and PIRLS international programs in 2021 in accordance with the agreements signed between the State Inspectorate for Quality Control of Education and the Organization for Economic Cooperation and Development and the International Association for the Evaluation of Educational Achievements. As the literacy levels of the students of the Republic of Uzbekistan are tested for the first time within the framework of these studies, it is necessary to prepare for this with great responsibility. For this, it is important to develop special skills in students by conducting experimental tests based on the tasks developed in accordance with the requirements of international studies, gradually integrating them into the educational process [1].

The main goal is natural science literacy of students, and the main means of achieving this goal is the study of natural sciences based on scientific knowledge. Great changes are being made in the organization of the natural science teaching process at the school. The teaching process includes skills such as analyzing data presented by students in various forms, justifying and discussing the results of experiments, asking questions and planning the main stages of research, forecasting the results ("what

[1] D. Askarova , S. Akbarova . Students natural sciences according to literacy to increase directed assignments collection

will happen...") it is intended to help in formation [2].

The National Curriculum has been developed for the comprehensive teaching of physics, chemistry and biology with the task of forming basic research abilities, natural science literacy and scientific views. Based on modernized programs, new textbooks and training sets for natural sciences are being developed.

Therefore, the tasks in this article aimed at assessing the literacy of students in physics are intended to assess the literacy levels of students and can be used independently by teachers of physics in general education institutions.

Below are some examples from the set of tasks for assessing students' physics literacy.

Level 1 tests based on the directions of the PISA international assessment program .

1. Remember the basic rules of the molecular-kinetic theory.

Answer:

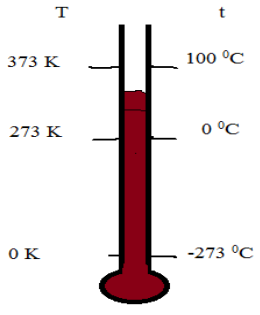
_____

_____

Answer: Substances are composed of small particles-molecules and atoms, they are in irregular, non-stop movement, atoms and molecules interact with each other, the properties of substances are determined by the movement and interaction of these molecules.

2-level tests based on the directions of the international assessment program PISA .

Nigora is in 9th grade. In the physics lesson, the teacher gave the students a lot of information about temperature: "Temperature is a physical quantity that quantitatively determines the heat level of a substance. The state of thermal equilibrium is when the temperature in all parts of the system has the same value. Celsius (t, ^{0}C) and Kelvin (T, K) temperature scales are widely used in practice. T=t+273. The absolute zero temperature is the lowest possible temperature - T=0 K, at which the thermal movement of the substance molecules stops. Drinking water freezes at 0 $^{0\,C,}$ boils at 100 $^{0\,C}$ at normal atmospheric pressure, and its temperature does not change from 100 ^{0} C during evaporation. The density of water has the greatest value at $^{40\ degrees}$ C ... "Air temperature on the street 0^0C. Nigora took her body temperature when she got home. In this case, the thermometer showed 38.3 $^{0\,C.}$



Question 6: Classify thermometers according to their intended use?

Answer:

_____

_____

[2] B. _ N. _ Nurillaev , K. _ T. _ Suyarov . Physics subject in teaching modern approaches and innovations module according to educational - stylistic complex

Answer: Water temperature measuring, human temperature measuring (medical thermometer), air temperature measuring thermometers.

the PISA international assessment program.

15. Derive the formula for finding the density of a substance, knowing that the concentration of molecules is n=N/V.

Answer: _____

_____

Answer: $n = \frac{N}{V} = \frac{1}{V} * \frac{m}{M} * N_A = \frac{\rho}{m_0} \quad \longrightarrow \quad \rho = m_0\, n$

The PISA international assessment program.

16 : For an isothermal process (T=const) Boyle-Mariot law: gas pressure is inversely proportional to its volume: i.e. $\frac{P_1}{P_2} = \frac{V_2}{V_1}$ Given the Boyle-Mariot discovery, draw an isotherm graph, giving the numerical values in the table using the figure below.

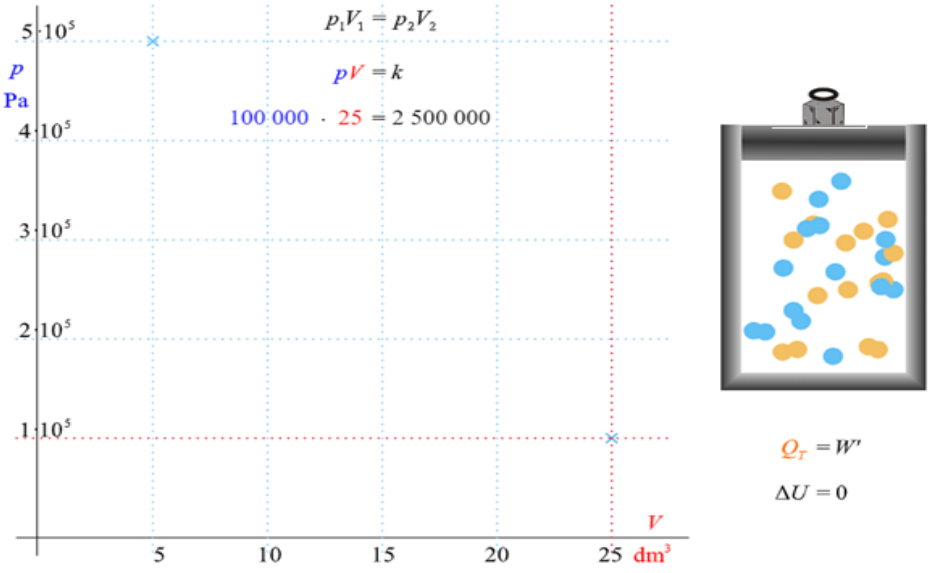
Answer: _____

_____

_____

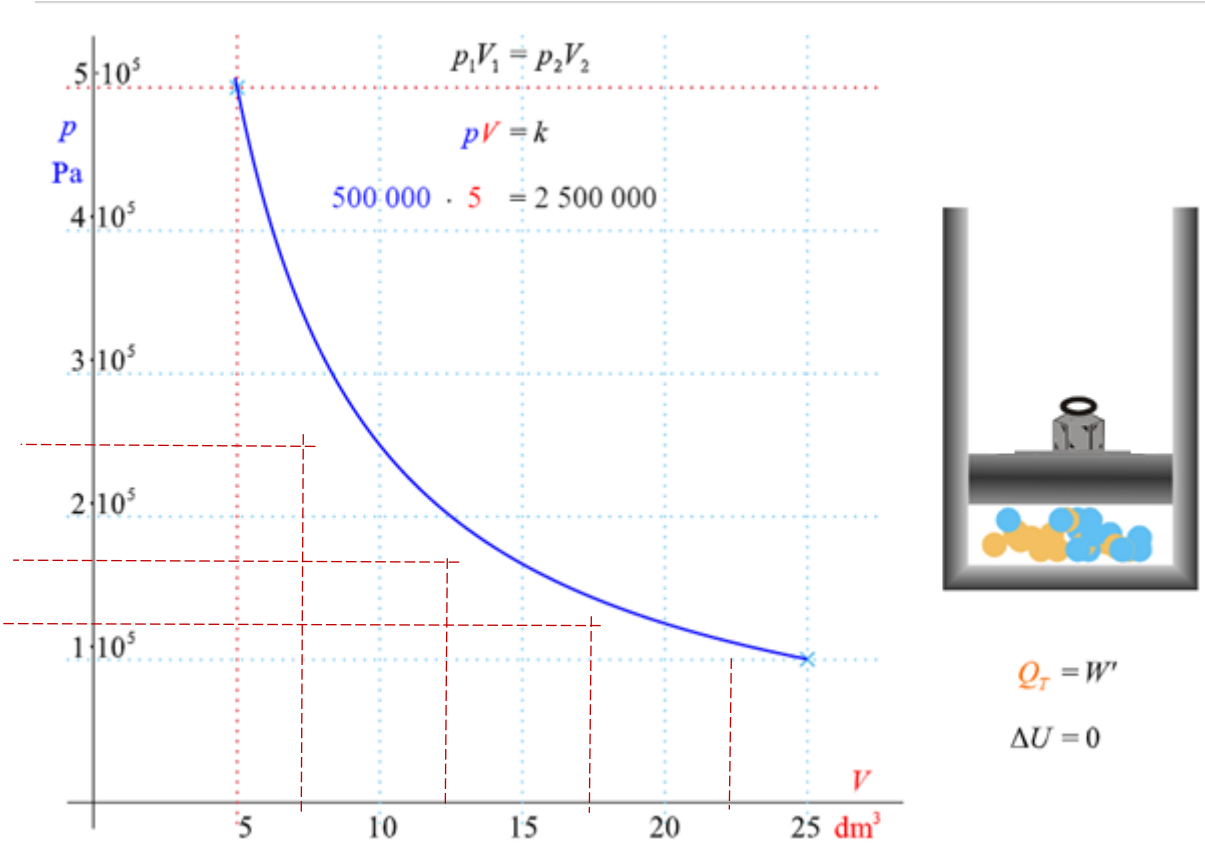
_____

No	1	2	3	4	5
P(Pa)	100000				500000
V(dm ^{3})	25				5



Answer: For an isothermal process (T=const) Boyle-Mariot law: the pressure of a gas is inversely proportional to its volume: that is, by $\frac{P_1}{P_2} = \frac{V_2}{V_1}$ specifying or PV = constand and we get the numerical value of k from the picture k=2500000 const = kthis number is Boyle-Mariot law b o taking into account that it does not change according to , we draw the isotherm graph by giving the numerical values in the table using the figure below.

K=2500	1	2	3	4	5
P(Pa)	100000	125000	166666,(6)	250000	500000
V(dm ^{3})	25	20	15	10	5



These tasks serve to evaluate the creative and critical thinking skills of students, the ability to apply the acquired knowledge in life, and then to stimulate the development of these skills. In addition to forming the knowledge and skills of schoolchildren in subjects, it provides revolutionizing the ability to apply their knowledge in various life situations. In the future, these skills will help the school graduate to actively participate in the life of the society and improve his knowledge throughout his life.

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