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# SCIENCE IS YOUTH WORK

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**Abstract**
The science of physics contributes to the development of human civilization, improving living standards, and has the most important factors in promoting science and technology to new levels. There is no periodicity in the development of science and modern technologies, in raising people's living standards. To achieve success, qualities such as hard work and hard work arerequired of youngpeople. The purpose of this article is to motivate young people embarking on

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## Introduction

Today's world lives with science. We are witnessing countless scientific and technical achievements at every step. Science has always been and will always be a force that elevates real life. Therefore, if a person who seeks to know and change the world he lives in is not aware of modern science and its achievements, he will definitely be helpless.

Every student knows very well that he cannot learn this subject, such as physics, without solving problems. Simple problems are solved in classes, more complex problems that require more time are solved at home. The so-called "non-standard" complex problems are solved in science olympiads. Many people think that it is necessary to solve the problem, but it is boring. The reason for this is that the problem is about an oversimplified ideal body, which does not seem to be related to any interesting, real events that we encounter in our daily life. Therefore, it remains abstract whether the solution of these issues is related to the understanding of any interesting phenomenon. In fact, the solution of any problem in physics allows not only to study the laws of physics given in school textbooks, but also to learn these laws and to understand the physical phenomena happening around. Therefore, it is necessary to be able to see the connection between the simple system in question and real events. Students, in many cases, need the help of teachers to identify such closeness.

We wanted to provide this brief information for students who dream of becoming a physicist. We take the first step to study physics in the classroom, and in the introduction we begin with the words "physics is derived from the Greek word "physis" which means nature." Indeed, physics is the science of nature and the laws of its existence. Humanity has been studying natural phenomena, that is, the laws and rules of physics and their application, ever since they realized their identity. In a certain sense, the history of the development of physical science can be divided into three periods: classical, new and modern physical science. By the end of the

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19th century, such departments of physics as mechanics, thermodynamics, electromagnetism, optics, hydrodynamics were thoroughly and deeply studied. Based on the theories developed for these sections, it seems as if they have been completed and no new discoveries will be made. That is why we call the period up to the end of the 19th century the period of classical physics or **classical physics**.

At the end of the 19th century and the first three decades of the 20th century, a number of world-class and amazing discoveries were made in physics. In particular, the phenomenon of radioactivity was discovered, the theory of relativity was created. Using the radioactive property of some substances, the structure of the atom was studied, and this led to the emergence of the quantum theory. The creation of the theory of relativity forced people to look at space and time from a different perspective, and as a result, the nature of physical research changed completely. That is why we call this period the new physics.

In the 30s of the last century, radio radiation from stars was observed for the first time, neutrons and nuclear fission were observed, and light particles that could not be part of atoms were discovered. These particles were later called "elementary particles". The analysis of a large amount of experimental data collected as a result of research into the properties of elementary particles led to the opening of new departments in physics, known as "Physics of elementary particles" and "Physics of high energies". The first theories of the origin of the universe were created. It was shown that these theories can be tested experimentally using devices that accelerate charged particles to high energies. Due to the development of physical research in this way, this period was called the period of **modern physics.**

Physicists try to understand the most complex systems in nature. The discoveries made by them not only expand our knowledge of physical processes, but also play an important role in the development of other sciences. For example, the laws of propagation of sound waves in solid bodies discovered by physicists showed geologists that seismology methods can be used to study the Earth's depths. The theory of the movement of gas streams is important for meteorologists and oceanographers. Many sciences try to express the processes in a complex system in a general way. Physicists begin their study of natural phenomena and their laws with a perfect study of the most elementary system. For example, if geology tries to express the formation of mountains from solid rocks in some way, a physicist starts by studying the physical processes that occur in the smallest atom when solving problems in a solid body. Only after that, he moves on to study a somewhat more complex system - a molecule, and then a solid body.

"Why is physics important and how useful is it?" The answer to this question is as follows: of course, physics does not directly build new houses or vehicles, directly heal patients or bring new equipment to our rooms. Physics expands our knowledge of the Universe, its components, the microcosm. Architects who build houses, engineers and designers who build airplanes, rockets or ships use the laws created by physicists and cannot deviate from them. Methods used in modern medical diagnostics and therapy were developed in physics laboratories. The discovery of the transistor in the Solid State Laboratory ushered in a new era in electronics and computing. The continuous flow of ideas has led to today's technology era. It is also the responsibility of physicists to solve the problem of regular supply of energy, especially electricity, to mankind today and in the long future.

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One of the main goals of physics is to systematize all physical phenomena and bring them to the relationship between numbers with a clear statement. The result of any experiment is expressed in tens and numbers, and the same experiment is repeated dozens and hundreds of times to achieve a reliable value.

It is known that one of the most important and memorable events in the life of applicants is to pass tests for admission to the OTM. For several years, young people who dream of becoming students of higher education institutions have been passing tests prepared by the Higher Education Institution in various subjects. We also see that the science questions offered to the applicants during the test require detailed and in-depth knowledge from them. In the first periods when the test method of admission to higher education institutions was introduced, there were defects in some physical questions prepared for the test of applicants. We think that some of the ideas and opinions that have arisen for this reason have led to the further improvement of the physics test questions. Of course, when creating test questions for applicants, it is not appropriate to think about which section of physics should be given more questions or to pay more attention to this section. For example, the modern age of information technologies and informatics should not leave aside the mechanical department of physics. It is known that the main tools of physicists are mathematics and logic. In order to equalize or bring the level of difficulty of the problems related to physics departments closer to each other, it is necessary to create more problems that are solved on the basis of logic or on the basis of the rules of geometry, and pay attention to symmetry and analogy.

Many people believe that scientific works, discoveries, formation of laws of nature are the result of the work of people of advanced age, who have a lot of life experience and skills in this field. In fact, the history of science shows that many great discoveries were made by people who were still young. Here are a few examples.

Many people are familiar with the picture of Galileo Galilei with a long beard in books. Galileo really lived a long life (1564-1642). But he made his first big discovery at the age of 19. Observing the vibration of the chandelier in the cathedral, comparing the period of oscillation with the pulse of his own vein, he determined that the period of the chandelier's oscillation does not depend on the amplitude. This discovery served as the basis for the creation of watches. Galileo became a professor at the age of 25 and soon established the law of gravity. Newton, like Galileo, made his first discovery - the law of universal gravitation - at the age of 20. Lense's law, familiar to tenth graders, was discovered by Emilia Khristianovich Lense at the age of 29. The four equations of James Clark Maxwell (1831-1879) serve as the theoretical basis of modern electrical engineering, electronics, radio engineering and optics. Maxwell published his first scientific work at the age of 15. He became a university professor at the age of 25. Dmitriy Ivanovich Mendeleev (1834-1894) was a 21-year-old student of the St. Petersburg General Pedagogical Institute when he published his first scientific work. D. I. Mendeleev made the great discovery that marked him in history - the periodic system of elements at the age of 35.

The discovery of radioactivity laid the foundation for modern nuclear physics and nuclear technology. Maria Skladovskaya Curie (1867-1943) was the first scientist to study the nature of radioactivity at the age of 30. She received the Nobel Prize for her work at the age of 36.

In 1905, three scientific articles were published in the German journal "Annalen der Physik" by one author, leaving his name forever in science. The author of these works was Albert Einstein

(1879-1955), who at that time was 26 years old. The scientific article called "On the Electrodynamics of Moving Bodies" served as the beginning of a revolution in physics, and the foundations of the special theory of relativity were described in it. The second article was photoelectric. was dedicated to the theory of the phenomenon of the effect, and later A. Einstein was awarded the Nobel Prize for this work. The third work led to the transformation of the molecular hypothesis into a molecular theory.

In 1913, Danish physicist Niels Bohr (1885-1962) was 28 years old when he created the quantum theory of the atom.

## CONCLUSION

It can be concluded from the above brief information that a person who wants to devote himself to science should start from a young age - from a student, and even better, from school. Because knowledge acquired in youth is like a pattern carved in stone. The knowledge and experience gained over the years will serve as a stepping stone for young people to reach higher heights in the future. We think that it would be appropriate to organize "Young Innovator" scientific-educational clubs in schools and higher education institutions in order to increase interest and needs in science. We can see this in the case of the developed countries USA, England, France, Canada and other developing countries. As Benjamin Franklin, the famous politician and statesman of the USA, said, "The best investment is an investment in science." Therefore, we think that it is appropriate to educate a person's interest in science from a young age and bring it to adulthood in this environment.

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