THE RELATIONSHIP BETWEEN PHYSICS WITH MATHEMATICS IN GENERAL SECONDARY EDUCATION SCHOOLS

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ABSTRACT

It is well known that interdependence is an important quality that demonstrates that educational process is organized on a specific basis, which is at a given stage to strengthen, extend and deepen the knowledge, skills and skill that constitutes the content of the previous one provides. The article analyzes the relationship between physics with mathematics in general secondary education schools. The principle of extravagance requires simultaneously with the process of increasing the knowledge, skills and abilities of learners, taking into account the inherent principles of methodology.

Keywords: Surface, volume, equation, atom and nucleus, logarithmic function, velocity, force, integral, move, density, mass, derived.

INTRODUCTION

The principle of theoretical knowledge related to practical skills is based on the theory of philosophy's knowledge of the theory and practice of cohesion. The use of this rule has the main objectives of physics education in secondary schools, academic lyceums, professional colleges and higher educational institutions. They need to be able to understand the concepts and norms in the physical education together with deep knowledge of the subject in physics, and to understand the relationship between them.

Physics training relies not only on physics knowledge, but also on the knowledge gained from other natural sciences. For example, the importance of mathematics as a scientific method is extensively reflected in physics teaching, physical laws are expressed in mathematical formulas, mathematical formulas and actions are used to prove some of the facts of physical laws, evaluate the accuracy of measurements, the results are important in the calculation and evaluation of various experimental methods that determine the application boundaries, their reliability level, and the physical parameters[1].

This study summarizes the interrelationships in physics and mathematics in general secondary schools.

Materials and methods

In the mathematical-optimized curriculum, the subject of fractions was transferred from 6th to 5th grades. In the solution of the problem it is necessary to solve the unknown quadratic equations. Finding an unknown number of equations in elementary classes is the solution of quadratic equations in the 8th grade mathematical course. Coordinate line, where placement of numbers, and the idea of negative numbers allow students to study the structure and

performance of the thermometer. The concept of the surface in mathematics allows the concept of pressure in physics, and the concept of volume enables the concept of density in physics. In elementary grades, students are accustomed to solving specific issues. The solution to some of the physics problems is approximate. Thus, mathematics and physics teachers need to be trained to carry out approximate calculations in solving some of the samples. It is also necessary to explain in physics some measurements of approximation and the approximate value of the calculated magnitude.

Typically, distance, surface, size, angular size is referred to as mathematical magnitudes. In mathematics, the properties of these magnitudes and the theory of their measurement have been developed.

Pupils spend a lot of work on experiments. Before doing this, they are practicing mathematics, and they use these skills because they have solved issues related to length, surface, volume, mass, velocity measurement, and some of them indirectly. Mathematical knowledge can also be used to form an understanding of measuring precision measurements of measuring devices.

One of the most important forms of interaction between physics and mathematics is solving mathematical problems in physics. At the same time, it is beneficial to deal with issues related to physics and mathematics. Physics is linked not only to arithmetic or algebraic expressions of mathematics, but also to geometry. The shape of objects is represented by a square, square, circle, triangle, polygon, sphere, cube, parallelepiped with right angle and so on. may appear on the display. In doing so, their size is determined by the use of knowledge gained in geometry.

Physics and mathematics in general secondary schools continuity of knowledge
Table 1

Advantages	**Note**
Persent will be required to start a Physics course.	Percent in the 5th grade math textbook
In the Physics lesson, the concept of Proportion ratio is very important	in the 5th class Proportions, inverse proportions, ratios.
The use of Archimedes in the 7th grade Physics textbook and the use of pressure	in the 5th grade math textbook surface, volume.
The 7th Grade Physics textbook should provide information about velocity expression vectors[2]	It was later given in Class 7 Geometry
The solution to the question "How many different ways can you confront opposition?"[3]	The 7th grade algebra textbook includes "combinatorial elements"
It increases the accuracy of calculations in physics, it does not have any difficulty in understanding the subject.	The math class takes 5-6 hours a week. It is as easy as possible and deeper into science, and it helps to consolidate.

Table 2

Disadvantages	**Note**
The classroom textbook in Grades 6 to 7 does not provide a standard calculation or a standardized number format.	The topic of the "Standard Form of the Tongue" is given in the 8th class algebra.
The theme of the 7th grade is "Module opens" in terms of forces, speeds, and square rows in the path of the invaded road.	The theme of the module is presented in the 8th grade algebra.
Failure to comply with the theme of the 7th grade textbook.	"The distance between two points" was removed in the 8th class geometry textbook.
The 7th Grade Physics textbook has the subject "Friction Force". The lack of "trigonometry" for the expression of frictional force in the plane.	The theme "trigonometry" is in the 9th class of Geometry and Algebra.
The absence of the Cosinus theorem on the "final velocity" or "relative velocity" in the 7th grade Physics textbook.	The Cosinus Theorem 9 is given in the Geometry textbook.
Do not know if $h=g\frac{t^2}{2}$ $h=h(t^2)$ is a parabola in the subject of the "Exercise force acting" in the 7th grade Physics textbook.	The topic of "square function" is given in the 8th class algebra.
In the Physics textbook of the 7th grade it is impossible to add vectors or to use the pifagor when adding or moving forces.	The theme of a straight angle triangle, pythagorean theme is given in the 8th class geometry textbook.
In the 7th grade, there are examples of quadratic equations in the subject of speeds.	The theme of "Quadratic Equation" is a 8th class algebra textbook.
The 9th grade Physics Lecture has shown that graphics can not be drawn on the topic of isoprocesses.[4]	Theme of "Elemental Functions" are given in the Class 10 algebra textbook
The 10th grade Physics textbook gives you an integral look on the theme "current force".	Topics of "Integral, derived" are given in the 11th grade math textbook.
The text of the 10th grade Physics textbook has the subject of "Forced Change": Logarithmic Decree.	Part 2 of the 10th class algebra lays out a logarithm, but the Physics textbook is needed early.
Failure to know about the fertility dimensions of the 10th grade Mechanics section of the Physics textbook[10].	The topic of derived is given in the 11th grade algebra.

RESULT AND DISCUSSION

For example, we analyze the above tables:

1) In the case of the "trigonometric function" as proof that the textbook of physics is closely connected with the subject of mathematics.

The 7th Grade Physics textbook describes the action of the object on the subject "frictional force". It is important to mention the basic concepts such as angular sinus, cosine, tangential definitions, meanings, properties, formulas in projection forces.

$y = \sin x$, $y = \cos x$ and function graphs are given in more detail in Class 9 Geometry textbook.

$$\frac{P_x}{mg} = \sin\varphi \qquad \frac{P_y}{mg} = \cos\varphi \qquad \mu = tg\varphi$$

2) In solving physics, we often need mathematics. In addition to the functions listed above, we often encounter parabolic functions.

This is especially true in the Mechanics Department of Physics for the effects of the force of the body. You can also see the Energy Conservation Act.

$$h = g\frac{t^2}{2} \qquad E = \frac{mv^2}{2} \qquad S = \frac{a*t^2}{2} \qquad W = k*\frac{x^2}{2}$$

In order to understand the parabolic function, first you need to know the graph, the field of detection, the field of values, the properties. It is best to use the reader to apply it to physics, knowing the following.

In the 7th Grade Physics textbook you will have to do this on the topic "Speeds". Solving quadratic equations requires little effort. The reason Discriminant, the roots should be able to read concepts.

This is a square equation $ax^2 + bx + c = 0$

$$x_{1/2} = \frac{-b \pm \sqrt{D}}{2a} \qquad D = b^2 - 4ac$$ D- Here is a Discriminant concept

Quadratic equation has 2 solutions, so one solution or, in some cases, a solution.
All of the above are listed in the 8th class Algebra tutorial.

REFERENCES

[1]. Begmatova D., Oltmishev O. "Methods of using mathematical knowledge in laboratory work in physics" - journal of journal of UzMU, 2009.
[2]. P.Q.Habibullayev, A.Boydedayev, A.D.Bahromov, S.O.Burxonov. "Physics textbook for the 7th grade of comprehensive schools". 2017 172-p
[3]. P.Q.Habibullayev, A.Boydedayev, A.D.Bahromov, M.Yuldasheva. "Physics textbook for the 8th grade of general secondary schools". 2014 year 155-p
[4]. P.Q.Habibullayev, A.Boydedayev, A.D.Bahromov, M.Yuldasheva. "Physics Textbook for 9th Class of General Secondary Education Schools". 2014 year 154-p
[5]. N.Sh.Turdiyev, K.Tursunmetov, A.G.Ganiev, K.T.Suarov, J.E.Usarov, A.K.Avliyokulov "Physics Textbook for 10th grade of general secondary schools". 2017 176-p