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Application of high school knowledge of physical mechanics in daily life

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Abstract: Physics is a subject that has a close connection to daily life. The role of physical knowledge is reflected in all aspects of life, and it has a positive impact on human learning and life. In the process of learning physics in high school, mechanics occupies an important position, mainly studying the interaction between the motion of objects and forces, and has great application value in daily learning and life. The application of high school physics and mechanics knowledge in daily life can help us actively engage in to the process of physical learning, constantly master the knowledge, and improve our abilities.

Key words: high school physics; mechanics knowledge; daily life; application

1 Introduction

In high school, physics, as a rational discipline, is closely related to the generation and development of physics knowledge and the continuous learning of physicists. As an important part of high school physics, mechanics permeates all aspects of life, no matter in ancient society or modern life. The application of physical and mechanical knowledge plays a positive role in promoting the development of human society. In the process of learning, we should not only clarify the relevant theories of mechanical knowledge, but also closely link the knowledge with daily life, to strengthen the understanding and mastery of knowledge.

2 Common forces in daily life

Mechanics knowledge is reflected in every aspect of life and affects every item in life. Mechanical knowledge plays an important role in human life. First of all, gravity is one of the most common forces in daily life, and its essence is the gravity between objects and the earth. The gravity borne by the human body is equal to the force produced by the Earth, which is the basis for beings to stand on the Earth. This shows that gravity is ubiquitous in the daily life of human beings. Secondly, in high school physics, two objects are in contact with each other. When they are about to move or have already moved, a force will hinder the movement on the contact surface, which is the common friction force in daily life. Friction is a common phenomenon in daily life, and the process of human walking is the use of friction between shoes and the road. Finally, in their daily lives, humans will use elasticity to support and buffer the objects in motion, which is widely used in their daily lives. The application of elasticity can be more convenient for life, and elasticity provides parts and technical support for many industries.

3 The significance of high school physics and mechanics knowledge applied in daily life

3.1 Ensuring the safety of human life

The application of physical and mechanics knowledge in high school in daily life plays an important role in ensuring the safety of human life. Human life cannot be separated from clothing, food, shelter and transportation, and mechanics permeates all aspects of life. To ensure the stability and safety of human vehicles, we need to conform to the mechanical principle when designing. In the design process of buildings, it is necessary to take into account the role of many kinds of forces, to ensure that they can withstand a certain amount of external forces and the building itself will not collapse. Moreover, mechanics also plays an important role in human health. Understanding the principle of force can reduce the possibility of injury during exercise. Mechanics plays an important role in human life, which involves many aspects of human life. Mechanics can make human life more safe, more convenient, and more comfortable.

3.2 Promoting the development of a social economy

The application of physical and mechanics knowledge in daily life plays a positive role in the development of social economy. Every development of mechanics can drive the progress of science and technology and the development of society and economy, and provide a guarantee for the happy life of human beings. In real life, mechanics can be fully applied in the process of production and manufacturing. Mechanics can make industrial manufacturing or agricultural manufacturing provide high-precision mechanical control, making the process of production more efficient. The application of mechanics in the field of transportation can make it have more superior properties, which can effectively promote its continuous development. The continuous development of mechanics has made a certain contribution to the development of the social economy. The application of mechanics in the process of daily life and production can not only improve the safety of the production process, but also provide certain technical support for it. Mechanics play a positive role in daily life. The application of mechanics can not only make human life more beautiful, but also effectively promote the development of the social economy.

3.3 Strengthening the mastery of students' knowledge

There is a close connection between high school physics and mechanics knowledge and daily life. By strengthening the connection between the two, it plays an important role in daily learning. The application of mechanical knowledge makes knowledge no longer only the theoretical knowledge in the old textbooks. Through continuous observation, mechanical knowledge can be found everywhere in daily life. Behind many life phenomena is knowledge related to mechanics. In the process of learning, knowledge can be related to the reality of life, and life-like resources can be used to deepen the understanding of abstract knowledge, to effectively strengthen students' mastery of knowledge. By applying the knowledge of high school physics in daily life, students can observe the knowledge of physics through the life phenomenon in the process of learning, connect the theory with the practice, and then effectively strengthen the students' mastery of mechanical knowledge.

4 Application of high school knowledge of physical mechanics in daily life

4.1 The application of gravity in daily life

The force due to the attraction of the Earth is called gravity. Through the fall of ripe apples, Newton realized that gravity permeated everyday human life. Mechanics knowledge is the key content of high school physics, and the physics knowledge of gravity runs through high school physics learning. The wide application of gravity in daily life has an important influence on the production and life of human beings.

For example, toys are a common object in daily life, and many toys are closely related to gravity. The tumbler is usually a cylinder with a wider bottom and a narrower top. On pushing the tumbler, it will eventually return to its original state by constant rocking, and will never fall. This is due to the center of gravity of the tumbler is at the bottom of the

tumbler. The center of gravity of the tumbler is determined in the design and manufacturing process through careful design, which is the key to the tumbler. Another important factor is gravity, which acts on the center of gravity of the tumbler and returns the tumbler to its upright position after generating movement. By using gravity in the design and manufacture of the tumbler, the purpose of the tumbler can be achieved. The application of gravity in daily life is not only limited to toy design but also uses the principle of gravity in house building, acrobatics, and other aspects. It can be seen that gravity plays a very important role in human life. Reasonable use of gravity can create a better life.

4.2 The application of elasticity in daily life

The shape of the object changes after the action of the external force. The force that can restore the object to its original shape after the withdrawal of the external force is called the elastic force. Because there are some differences in the shape of the object, the elasticity produced in the object also has certain differences. Elastic force is a more common force in daily life, and in daily production and life, elasticity plays an important role.

For example, rubber bands, which are often seen in daily life, are often used to tie hair or other objects because of their elasticity and the ability to stretch. The rubber band can bounce up because it contains the principle of elasticity. The main component of the rubber band is rubber, which has high elasticity and tensile characteristics. In the process of stretching the rubber band, a certain amount of mechanical energy is saved in the rubber band. When the external force acts on the rubber band, the rubber band will save the potential energy. When the external force withdraws, the rubber band will restore its original shape, convert its potential ability into kinetic energy, and release it. This release and transformation will eventually lead to the occurrence of elasticity force. The reason why rubber bands can bounce is closely related to the principle of saving and releasing energy in rubber bands. The principle of elasticity is reflected in many aspects of life. The rubber band is the most direct form. The clothes and shoes we wear daily contain the principle of elasticity. Each is an indispensable force in human life and is of great significance to the development of human life.

4.3 The application of friction force in daily life

Two objects in contact with each other and extrusion, when they occur a relative motion or have a relative motion tendency, will produce a force on the contact surface that impedes the relative motion or relative motion tendency, and this force is called friction. The friction force is a force that is opposite to the direction of objects moving or already moving. It is widely used in daily life and is of great significance for human life.

For example, braking is a common action in daily life, whether the car or the bicycle has the function of braking, which is closely related to friction. The basic principle used in the car brake is to use friction to cut off the function of the steering engine, and finally achieve braking. In short, it is the use of brakes during the driving process of a car, causing friction between the tires and the ground. The kinetic energy of the car is converted into heat energy after friction, causing the vehicle to stop driving and achieve the purpose of completing the braking function. In daily life, friction is an extremely important force, if there is no friction, it will have a certain impact on human life. The application of friction is extremely extensive, whether it is daily life or industrial production, friction plays an important role.

5 Conclusion

To sum up, physics is everywhere. High school knowledge of physics and mechanics has been widely used in the daily life of human beings. Through this application, the correlation between abstract physics knowledge and real-life can strengthen students' understanding of knowledge. The application of mechanical knowledge in daily life provides certain convenience for human life and development. Through the application of mechanics, it can effectively guarantee the safety of human life and the continuous development of the social economy. From the perspective of daily life, to understand mechanical knowledge can truly combine theory with practice and promote the all-round development of students.

Conflicts of interest

The author declares no conflicts of interest regarding the publication of this paper.

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