Using the Physical Optical Law to Construct the Physical Picture to Solve the Dynamics Problem Skillfully

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Abstract: in the process of physics learning, often through the form of composition, to use the specific theoretical knowledge in the form of image stereo, and combined with the function of multimedia, to help students to understand the knowledge, and under the law of physical optics, using this way to solve the problem of dynamic knowledge learning, can effectively cultivate students 'subjective initiative, stimulate students' interest, but also can improve students' logical thinking ability. Mainly because the kinetic knowledge is generally more Abstract, students are more difficult to understand. This paper analyzes the concrete method of solving the dynamic problem under the construction of the landscape, and studies the idea of solving the dynamic problem.

1. Introduction

In the process of dynamic knowledge learning, it is mainly to connect abstract knowledge, using the relationship between graphics and knowledge, and effectively link them together. The problem of dynamics mainly includes two aspects: one is to analyze the specific movement condition according to various physical pressure conditions. The second is that according to the actual movement of the object, to study the force. In this process, the image can be used to show the motion curve of the object, and analyze the dynamic details according to the change of the speed. And the application of the picture under the law of physical optics is mainly studied through the method of light, plane mirror image, solar eclipse law and convex mirror. In the process of solving kinetic problems, there are many different methods that can be used according to the knowledge learned.

2. The Specific Application Method of Using Physical Optics in Solving the Kinetic Problems

2.1 Use the Reflection Law of Light Motion to Solve the Problem of Linear Motion

Like in the cloud height measurements in the sky, Based on the distance between the horizontal ground and the detector, Conduct explosion setting, And by the jet difference between explosion and sound in the clouds, Combined with the formulas to calculate the height of the cloud cover, So in the construction of the physical picture, You can use the principle of a plane mirror image, At point A is the specific location of the explosion, Point O is the place occupied by the surveyor, According to the reflection law, The clouds were on their downline, When an explosion occurs, Sound will pass from point A to the personnel, While the height below the clouds is represented by h, By the calculation of time and formula, To get the exact height of the clouds[1]. As reflected in Figure 1, light is applied.

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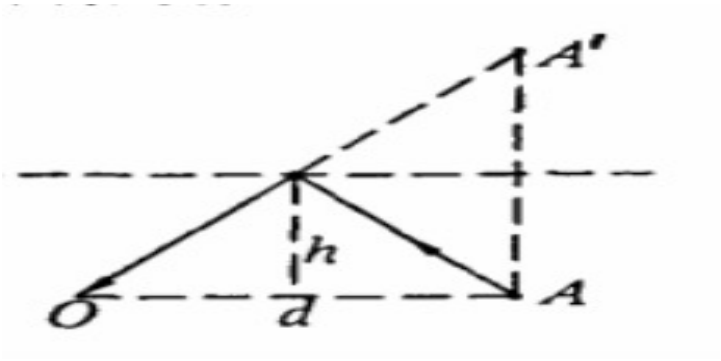

Fig.1 The Use of Light Reflection

2.2 Use Full Reflection to Handle the Shortest Time

Such as the car on the road to a certain speed, to calculate the specific time from somewhere to another, using the law of the mirror, combined with the formula to calculate the shortest time, the movement of the specific vehicle into light reflection, to scientific operations, assuming under the constant motion, combined with the construction of images, to solve the problems in the actual dynamics.

2.3 Strengthen the Study of the Plane Mirror Image and Analyze the Curve Motion

Such as between two walls, above the oblique object, at a point collision, and under the reaction of force, to calculate the speed of the curve motion and the height of the collision point, A and A'point is the distance between the two walls, and in A object, in B collision, B rebound at the same time, when there is no right wall, the object will fall into B wall, using the plane mirror principle, the object will fall near the origin, can understand it as the curve movement, combined with formula calculation to obtain accurate answer[2]. As shown in Figure 2, the application of the plane mirror image.

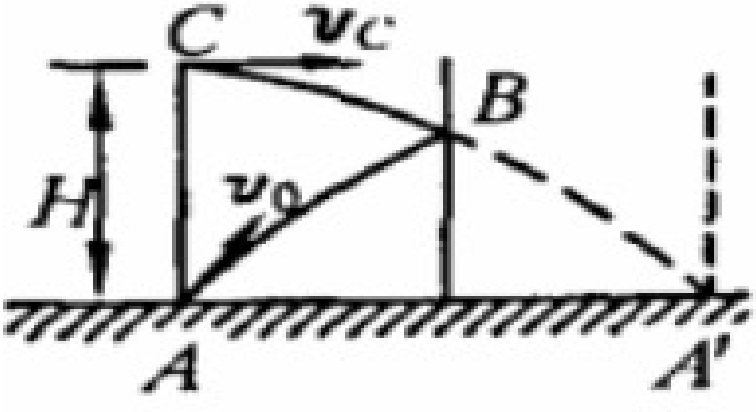

Fig.2 The Use of a Plane Mirror Image

2.4 According to the Law of the Solar Eclipse, Establish a Total Eclipse Picture

For example, in the launch of our country's satellites, To obtain the complete and detailed topography of the moon, By on the running setting of the track, Combined with microwave signals to transmit relevant data and information to the ground, Then, using the data analysis and processing techniques, Draw the corresponding landform image, In the construction of the physical images, According to the law of the solar eclipse, Combining the distance between the Earth and the moon, Depending on the size of each radius during motion, Using the period of the moon as it moves around

the Earth, Transmission of the microwave signals, To ensure the science and accuracy of information transmission, By connecting line, male tangent and symmetry, Establish images of the total food area.

2.5 Using the Focusing Effect of the Convex Mirror, the Relevant Knowledge is Clarified

Electrostatic lenses are mainly used in TV imaging and microscopy, The specific working principle is to focus the relevant electrons on the central axis, Then we operate, Under the focus action of the convex lens, Combined with the data obtained from the relevant test detection, Draw the surfaces, According to the changes of the surrounding electric field during the operation, To analyze and study the role of the focus, When parallel to the main optical axis after refraction, Focus the light on a certain point, Then it emits the electron beam into it through the electrode, And after the exercise, Combining the acceleration and deceleration motion in the horizontal and vertical directions in the electric field, Analyze the characteristics and specific location of the focus[3].

3. Specific Measures to Solve the Kinetic Problem

3.1 Overall and Isolation

Mainly in the dynamic problem involves multiple elements at the same time, can separate different objects, combined with the actual motion of force analysis, and Newton's law and force interaction, isolation processing, and in the same state, can use the overall processing, such as a kitten in the process of climbing, when the cantilever open, if the height, to analyze the force and movement speed, can first be the kitten and the rod as a whole, after the broken line strength and height unchanged, the acceleration is zero,

3.2 Decomposition Acceleration

Mainly according to Newton's law, for the relationship between the motion and speed change, to solve the related problems, the object in the slope acceleration, scientific calculation, such as with a line tied object end, and then accelerate along the slope, when the object stays on the surface, calculate the object in the pull and support.

3.3 Picture

For example, the object level is placed on the horizontal position, the speed under the rest is zero, and then a certain force is applied to the right and left to promote its movement, and repeat the movement back and forth, and at the specified time, its movement trajectory is drawn in the method of image[4].

3.4 The Limit

Mainly in the specified area, the physical continuous movement, the specific research problems to the limit state, and then expose the hidden problems and conditions, such as the end of the spring, then hang the tray and the object, under the static length, under the large pressure, and reach the limit, to calculate the tray support on the object, but if not tensile force, the object and spring will be in a relative balance state, so the support force and the gravity of the object.

3.5 Micro Yuan

Such as in a bucket hanging on the cable, and make and horizontal surface form a certain Angle, and then under the action of pulley with bucket to accelerate movement, to calculate the pressure inside the bucket, can the pulley and bucket as a whole, so under the acceleration, the bucket will also with movement, under the action of gravity the water and cable into parallel state.

3.6 Hypothesis

Put two different types of objects on the rod piece, and encourage them to accelerate the downward movement on the inclined plane, but it is not clear that the friction coefficient and relationship between the two objects and the inclined plane when they move, when the tensile force is different, or the movement speed is different, so in this case, the rod may not produce force.

3.7 Invented

Choose a sealed container, and put the table tennis with a rope at the bottom, then loosen the rope, calculate the sphere in the process of floating, container of the car for the ground pressure calculation, can rise virtual into accelerated down, if the water pressure is higher than the sphere, will make in a state of weightlessness, so the pressure will gradually decrease.

3.8 Scale

In different objects, will only be the effect of a force, the resistance and the same mass, according to Newton's law, can know the external force and mass is proportional relationship, such as two different mass objects on the horizontal surface, and then apply thrust, to calculate the force between the two objects, using the relevant law formula, can clearly get the calculation results, find the corresponding answer. Also put two objects of different masses and shapes on the horizontal surface, applying a certain amount of thrust, in order to ensure the connection between the objects, the applied thrust size is calculated.

4. Conclusion

in summary, In solving dynamic problems and carrying out relevant teaching activities, Different methods can be used to handle the problems involved, Learn specific responses, In the dynamic problem under the law of physical optics, Mainly through the reflection and mirror law of light, Build the corresponding map environment, Show the specific problems and information in images, Combined with the relevant physics knowledge and formulas, To Analyze and solve problems, By using this method, Can train students' logical thinking ability, Deepen the understanding of knowledge, It can also improve the actual application level, Promote the flexible use of knowledge.

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