

## FORMATION OF ASTRONOMICAL CONCEPTS IN LESSONS IN PHYSICS

**Sheroz Eraliyevich Nurmatov**

Teacher of Chirchik State Pedagogical University

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**Abstract.** *This article, methods for explaining the concepts of astronomy in physics classes are presented.*

**Keywords:** *method, astronomy, eclipse, observing, physics, concept, judgment, inference.*

## ФОРМИРОВАНИЕ АСТРОНОМИЧЕСКИХ ПРЕДСТАВЛЕНИЙ НА УРОКАХ ФИЗИКИ

**Аннотация.** *В данной статье представлены методы объяснения понятий астрономии на уроках физики.*

**Ключевые слова:** *метод, астрономия, затмение, наблюдение, физика, концентрация, суждение, вывод.*

Thinking is the most generalized and mediated form of psychological reflection that establishes connections and relationships between cognizable objects. There are three forms of thinking:

concept - the unity of essential properties, connections and relations of objects or phenomena reflected in thinking; a thought or a system of thoughts that singles out and generalizes objects of a certain class according to certain general and, in the aggregate, specific features for them;

judgment - a form of thinking in which something is affirmed or denied about an object, its properties or relations between objects. Judgment allows you to speak about the presence or absence of features in objects ("The liquid has volume, but does not have a shape"). This is a more complex form of thought than a concept;

inference - the process of reasoning, during which a transition is made from some initial judgments (premises) to new judgments - conclusions. The rules for transforming an initial system of premises into a system of conclusions are called rules of inference or rules for drawing inferences. If the type of premises and conclusions is specified explicitly, then the conclusion is called direct. If the premises and the conclusion indicate only the types of conclusions, from one of which it is allowed to move to another, then the conclusion is called indirect).

Education in a general education institution is built in such a way as to teach students to reason and draw conclusions on the basis of concepts. Most researchers identify two main characteristics of the concept: 1) the content of the concept; 2) the scope of the concept. Academician A.V. Usova refers to the characteristics of the concept also its connections and relations with other concepts.

The content of a concept is understood as a set of essential properties (sides) of a class of objects or phenomena reflected in the mind with the help of this concept.

Essential properties are those properties of a class of objects in which this class of objects (or phenomena) differs from all other objects (or phenomena). In other words, essential properties are those properties without which an object ceases to be itself. So, for a spring dynamometer, the presence of a graduated spring scale is essential, for the concept of "telescope objective" - the presence of a reflective surface, its shape, dimensions are insignificant features.

The scope of a concept is understood as the number of objects covered by a given concept (or reflected in the mind with the help of a given concept). By volume, concepts are divided into single, general and categories.

Single concepts are called, the volume of which is equal to one: the polar star, the Galaxy, etc. Concepts, the volume of which is more than unity, are called general, for example, the concept of a star of the main sequence (cover many space objects). In the process of studying the basics of science, students form mainly general concepts.

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