

## **THE METHODS USED IN THE EXPLANATION OF GENETIC CONSISTENCY IN CHEMISTRY AND THE ROLE OF THE CHEMICAL EXPERIMENT**

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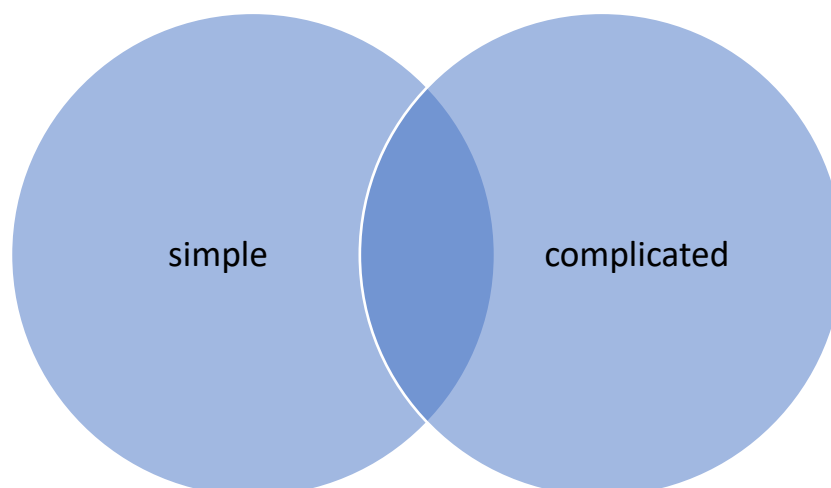
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<b>ABSTRACT</b>	<b>KEYWORDS</b>
The article talks about the use of effective methods and the role of chemical experiments in explaining the genetic consistency of inorganic and organic compounds.	Organic, experiment, venn diagram, cluster, snake, chemical puzzles, heuristic conversation.

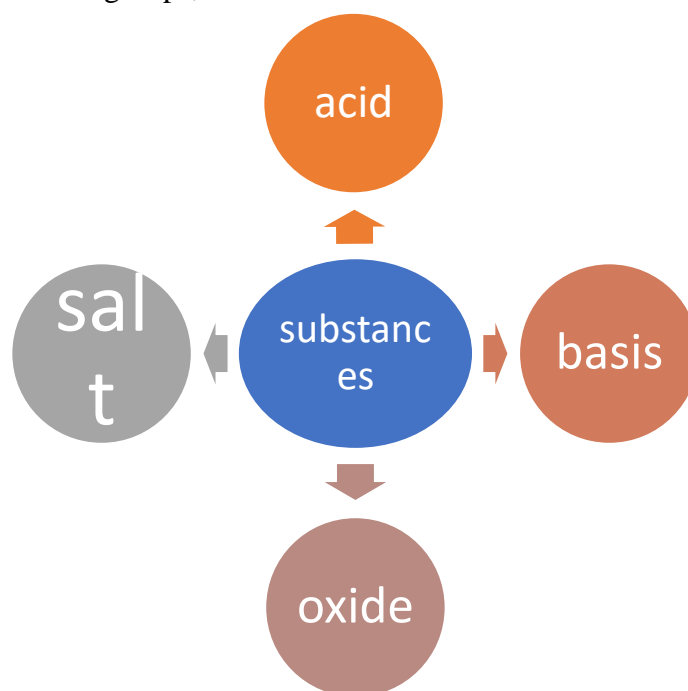
### **Introduction**

To write any chemical reaction, we must first answer the question of what is the substance. This substance has physical and chemical properties, has an aggregate state, and constitutes the composition of the body. We will teach the subjects in two types, and it will be appropriate if we use the Venn diagram method.

### **Venn diagrammasi**

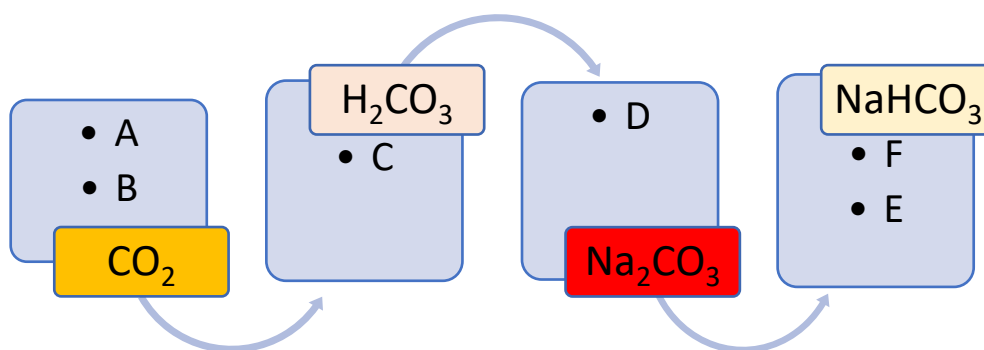


Compounds are divided into 4 groups, we show it in the Cluster method

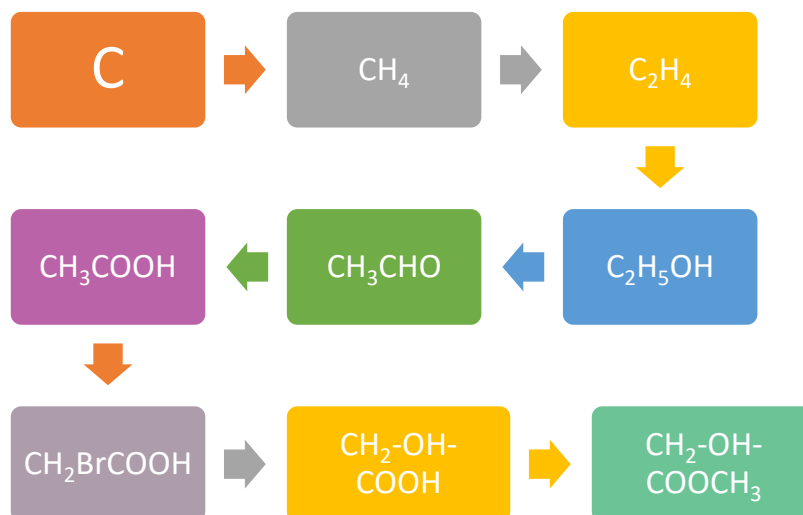


There is an interrelationship between these four classes of inorganic compounds, which we have explained to the students through the step-by-step method. This method helps students to focus on one place and to repeat the previous knowledge they have learned, to form creativity. If students correctly find the substances hidden under the letters, they can go to the next level. This method is considered to be a very effective method for evaluating students.

### "Step by step" method.



"SNAKE METHOD" - this method helps to find the reactant at each step, to repeat the previously covered topics and to create genetic consistency between the classes that are considered important in organic chemistry. Examples of the steps in the formation of methyl ester of lactic acid from carbon:



"CHEMICAL PUZZLES" question-and-answer method.

1. Coal turns into diamonds (how?).
2. Carbon dioxide turns into sugar (how?).
3. Air becomes acid (when?)

The "heuristic interview" method consists of a certain set of questions that guide students' thoughts and answers in the right direction. In fact, children discover certain facts and events. I like this method because it develops creativity, creative thinking and logical thinking, students develop effective approaches to learning information, the fear of making a wrong guess disappears (because a mistake leads to a negative assessment does not lead) and a trusting relationship with students is established.

Question 1: In a cave called "Cave of Dogs" only dogs die when they enter, but people do not? Explain why?

Question 2: One element hydrogen is in two groups in the periodic table (why?).

Question 3: When and where can acid rain fall?

When using a chemical experiment in organic chemistry, it is necessary to know its descriptive features, methodological features of the formula [241]. In this case, the teacher's task is to choose the appropriate chemical experiments that confirm the genetic consistency between the classes of organic compounds.

A specially selected chemical experiment will objectify the knowledge that students should learn, show how the chemical properties of substances are manifested, and how substances interact with each other. However, by itself, well-chosen chemical experiments according to certain criteria cannot guarantee that students will draw correct conclusions when they are shown, so the experiment is effective. We determined the methodological conditions of use for the formation of the studied concept:

a) students' interest and readiness to perceive the experiment.

The organization of an experiment is connected with observation according to a specific plan, and any purposeful observation is connected with thinking. During the entire educational process, logical thinking is inseparable from the process of acquiring knowledge and concepts. A successful review of the evidence is possible when the theoretical knowledge with the help of the experiment reaches a certain state, that is, it is sufficient for a conscious and meaningful perception of the observation, which in turn is sufficiently connected with the theory.

b) expediency of the experiment. Through the experiment, we consciously set ourselves a goal, striving to help students directly perceive an object or event with different senses and thereby contribute to the creation of correct sensations and perceptions in them. At each stage of education, in each lesson, a certain educational problem is solved, and with the help of experience, they come to a certain conclusion or acquire one or another characteristic of the studied phenomenon or substance. Along with the theoretical data used to form the concept of "genetic consistency", the chemical experiment must also meet specific requirements:

- it is cognitively important in the system of formed knowledge;
- shows changes of substances and their classes;
- helps to acquire knowledge about the emerging concept and to include them in the system of general knowledge.

c) repetition of experiments. Chemical experiment is not the goal of learning, but one of the means of acquiring knowledge and concepts. Repetition should be infused with understanding. It is necessary to organize similar experiments, because it introduces various aspects of the studied phenomenon and increases the interest of students in it. It has a special place in generalizing lessons.

d) a combination of the experiment with other visual aids and a sketch of experiments. Skillfully combining the experiment with visual aids can have a significant positive effect on the meaningful acquisition of what is being observed. Sketching devices or apparatus that students see in labs and hands-on activities is equivalent to understanding their observations.

In the course of organic chemistry, in order to form ideas about the genetic consistency between compounds and their classes, its content and size, in the development of a sub-system of a chemical experiment, students of this subject will study all the interrelated chemical we took into account that it should be understood as a holistic science with many different carbon compounds, which make up about 90% of substances. To date, about 10 million carbon compounds are known, and all inorganic compounds are only about 1 million. As mentioned above, it is desirable to define genetic relationships between classes of organic compounds, not individual substances.

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