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HOW TO GET STUDENTS INTERESTED IN CHEMISTRY

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Abstract. Kids are always interested in everything. They ask thousands of questions and want to know not just an answer, but a complete answer, a colourful answer with bright vivid images. And we, adults, should always answer their questions to captivate them, maintain their interest.

Interest in a subject often begins with questions “Why”, “How”, “Why for”, “What”, “Where”. A big fire starts with a small spark. A long journey to science starts with small steps. And deep understanding of the subject begins with solving unusual, exciting problems. They make both adults and children develop their creative thinking, the ability to predict and foresee [1].

Several examples of such tasks are offered in our article.

Keywords: interest, understanding of the subject, exciting problems, ability to predict.

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КАК ЗАИНТЕРЕСОВАТЬ СТУДЕНТОВ ХИМИЕЙ

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Аннотация. Детям всегда все интересно. Каждый день они задают тысячи вопросов и хотят получить ответы на них, но не просто ответы, а яркий, интересный, образный рассказ. И всегда рядом должен быть взрослый, который своим ответом увлечет ребенка, поддержит в нем интерес, желание и дальше познавать мир.

Интерес к учебному предмету часто начинается с вопросов: “Почему”, “Как”, “Зачем”, “Что”, “Где”. Большой костер начинается с маленькой искорки. Долгое путешествие в науку начинается с маленьких шагов. И глубокое, полное понимание предмета начинается с решения необычных, увлекательных задач, которые позволяют развить творческое мышление, способность предсказать и предвидеть [1].

В данной статье мы предлагаем примеры таких заданий.

Ключевые слова: интерес, понимание предмета, увлекательные задачи, способность предсказывать.

1. There are four solutions:

A) 0,1 M HCl

B) 0.1 M NaCl

C) 0.1 M HC₂H₃O₂

D) 0.1M KOH

1) Which one is weakly acidic.

2) Which one has the highest PH.

3) Which one reacts with an equal volume of 0.05 M $\text{Ba}(\text{OH})_2$ to form a solution with $\text{PH} = 7$ [2].

2. Five ionic species are given:

A) X^+ B) X^{2+} C) X^{3+} D) XO_3^{2-} E) XO_4^{2-}

1) Which type of ion found in potassium acetate.

2) Which type of ion found in aluminum oxide.

3) Which type of ion found in rubidium phosphate [2].

3. Each question consists of two statements. Determine whether both statements are correct.

A) The rate at which salt dissolves in water increases with stirring

I

as stirring exposes surface of a salt crystal to a less concentrated layer of solution.

II

B) Diamond has a high melting point

I

as in a diamond crystal, the carbon atoms are held in place by ionic bonds.

II

C) Sodium has a lower first ionization energy lithium has

I

as sodium has more protons in its nucleus than lithium has.

II

D) Magnesium reduces Ag^+ ions in solution

I

as silver is more active metal than magnesium is [2].

II

4. Determine which statement(s) about carbon dioxide is (are) true.

A) It can be prepared by the action of acid on limestone.

B) It's used by firefighters.

C) It dissolves in water at room temperature.

D) It's poisonous because it blocks hemoglobin.

E) It's less dense than air at a given temperature and pressure [2].

5. List two elements that are liquids and 11 elements that are gases at room temperature and atmospheric pressure [3].

6. Hydrogen is a colourless, odorless gas that has a very low density, reacts with nitrogen to form ammonia and with oils to form fats. Which of these six properties are physical and which are chemical [3]?

7. What three things occur in every chemical reaction [3]?

8. In a chemical reaction, what happens to chemical bonds and the identities of atoms [3]?

9. Determine what is wrong with the statement, "To calculate molarity, you must know the number of moles of solute and the number of liters of solvent [3]."

10. Determine whether a given solution at 25°C is acidic, basic or neutral. Tell its $[\text{OH}^-]$ and pH [3].

A) $[\text{H}^+] = 1.0 \times 10^{-9} \text{ M}$

B) $[\text{H}^+] = 1.0 \times 10^0 \text{ M}$

C) $[\text{H}^+] = 1.0 \times 10^{-7} \text{ M}$

D) $[\text{H}^+] = 1.0 \times 10^{-3} \text{ M}$

10. Give two important reasons for using aluminum in the construction of airplanes [4].
11. Why is stainless steel resistant to corrosion [4]?
12. Determine the colour of a strip of litmus paper moistened with lemon juice, milk of magnesia, vinegar, ammonia water, a solution of baking soda, a solution of washing soda, carbonated water [4].
13. A popular shampoo is advertised as low pH, nonalkaline. Does that make sense [4]?

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