FORMING 4K SKILLS IN STUDENTS WHEN TEACHING THE TOPIC OF ACIDS

Sadikova Umidakhan Bakhtiyar kizi
Independent researcher at Tashkent State Pedagogical University Tashkent.Uzbekistan
E-mail: umidasodikova1244@gmail.com

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Abstract: This article develops tasks focused on 21st century skills: communication, creative and critical thinking, and collaboration in teaching the topic of acids in chemistry lessons. All chemistry teachers can use them to explain the topic of acids in 7th grade. In the formation of communication skills, tasks are given that link the importance of acids in our daily lives, which serves to increase students' interest in the lesson.

Keywords: chemistry lesson, communication, creative and critical thinking, collaboration, daily activities, acids, acetic acid, sour taste, shovel leaf.

KISLOTALAR MAVZUSINI O‘QITISHDA O‘QUVCHILARDA 4K KO‘NIKMALARINI SHAKILLANTIRISH

Annotatsiya: Ushbu maqolada kimyo darslarida kislotalar mavzusini o‘qitishda XXI asr ko‘nikmalari: kommunikativlik, kreativ va kritik fikrlash, kollaboratsiyaga yo‘naltirilgan topshiriqlar ishlab chiqilgan bo‘lib,ulardan barcha kimyo fani o‘qituvchilari 7-sinflarda kislotalar mavzusini tushuntirishlarida foydalanishlari mumkin. Kommunikatsiya ko‘nikmalarini shakillantirishda kislotalarning kundalik hayotimizdagi ahamiyatiga bog’lagan topshiriqlar berilgan bo‘lib, bu o‘quvchilarni darsga bo‘lgan qiziqishlarini ortishiga xizmat qiladi.

Kalit so‘zlar: kimyo darsi, kommunikativlik, kreativ va kritik fikrlash, kollaboratsiya, kundalik faoliyat, kislotalar, sirka kislota, nordon ta’m,shavel bargi.

ФОРМИРОВАНИЕ НАВЫКОВ 4К У СТУДЕНТОВ ПРИ ПРЕПОДАВАНИИ ПРЕДМЕТА КИСЛОТЫ

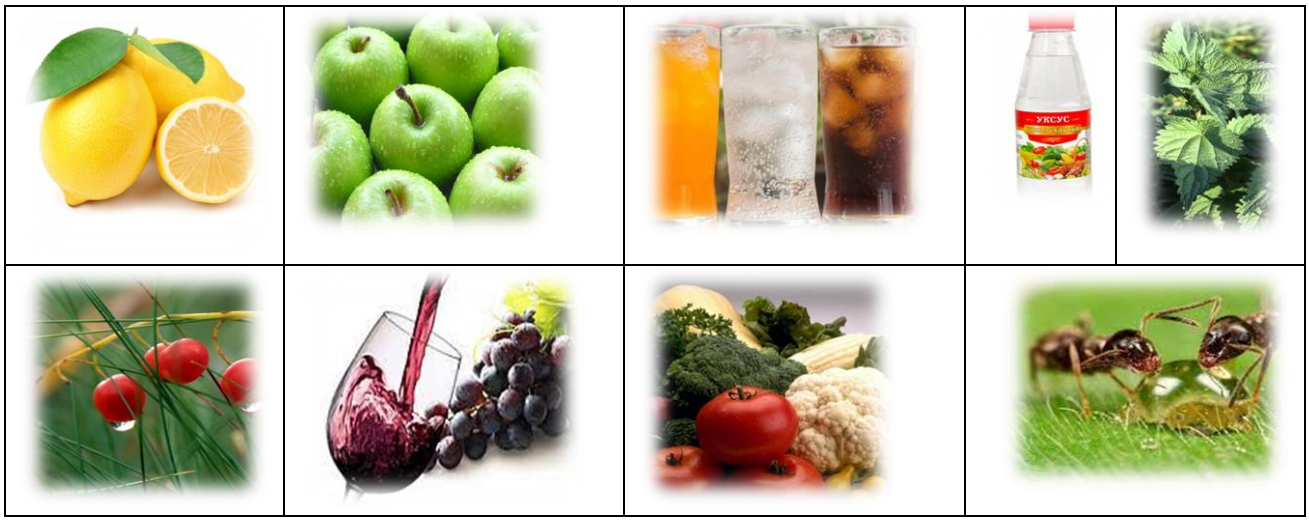
Аннотация: В данной статье разработаны навыки XXI века: коммуникабельность, творческое и критическое мышление, задания на сотрудничество для преподавания темы «Кислоты» на уроках химии, которые могут быть использованы всеми учителями химии при объяснении темы «Кислоты» в 7 классе. При формировании коммуникативных навыков даются задания, связанные с значением кислот в нашей повседневной жизни, что способствует повышению интереса учащихся к уроку.

Ключевые слова: урок химии, коммуникативное, творческое и критическое мышление, сотрудничество, повседневная деятельность, кислоты, уксусная кислота, кисловатый вкус, лист лопатки.

INTRODUCTION.

Developing communication skills. If you look at the fruits and plants in the pictures below, almost all of them have a sour taste.

	What do you think gives them their sour taste? What are the positive and negative effects of eating them on the body? Why are there ants and shovel leaves in the picture?



Why does the body crave sour foods? What does the desire to eat sauerkraut or a slice of lemon mean?

Students engage in discussions with each other, begin to analyze, think about the chemicals used in our daily activities, collect sour-tasting fruits and vegetables, and try to determine what they have in common, developing their communication skills. Solution. The word acid comes from the Latin word "acidus" meaning sour. Acids are widely distributed in nature and can be found in almost all the products we consume. [1].For example, lemons contain citric acid, grapes contain tartaric acid, ant stomachs contain formic acid, and willow leaves contain oxalic acid. Due to their bitter taste, they are called sour substances in some literature.[2] Acids are a key component in the production of many products we use in everyday life.[3]

MATERIAL AND RESEARCH METHODS

"Pea Rain" experiment. Collaborative tasks.

1.Required equipment and reagents: beaker, spatula, glass rod, acetic acid, baking soda, peas.

Pour 100 ml of acetic acid into a glass. Put 6-7 peas on top of it. What process was observed? Then pour baking soda on top of it, stir with a glass rod. Observe the process that occurs and answer the following questions.

Why did the peas sink to the bottom of the container when you put them in acetic acid?

Why did the peas slowly float to the top of the solution after you added baking soda to the acetic acid?

Write the equation for the reaction between acetic acid and baking soda.

2.Place the given acids in the tables below according to their bases.H_2SO_4 , HNO_3, HCl, CH_2O_2, $C_6H_8O_7$, H_2S, H_3PO_4, H_2CO_3, H_2SiO_3, HF, HBr,HJ, H_2SO_3, $HMnO_4$, H_2 MnO_4, $C_2H_2O_4$, H_3BO_3,

Classification table			
Monobasic acids	**Dibasic acids**	**Tribasic acids**	**Organic acids**

3. Read the following information about the uses of acids and determine which acid is being discussed.

1. HCl / H2SO4 is widely used in varnishes and paints, mineral fertilizers, chemical technology, the food industry, as an electrolyte in battery production, and as a paper dryer (hygroscopic substance).[4]

2. H2SO4 / HNO3 is used in the production of explosives, in the production of mineral nitrogen fertilizers, and in the production of medicines (nitroglycerin).

3. HCl / H2SO4 - used in metallurgy, food production, electroplating, and medicine. It is found in gastric juice.

4. CH2O2 / C6H8O7 - used in medicine as an antiseptic. A colorless liquid with a pungent odor. Food additive E236, used in agriculture as a preservative for feed, in beekeeping, to eliminate parasites, and in the textile industry.

5. CH2O2 / C6H8O7 - used in the food industry as an acidity regulator, flavor additive, preservative, in medicine, and in the production of cosmetics. It is a weak acid. It dissolves well in water. It is a component of drilling fluids in oil and gas extraction.

Answers for verification

1-H2SO4, 2- HNO3, 3-HCl, 4- CH2O2 , 5- C6H8O7

CONCLUSION

Completing this task will help students quickly and easily apply the theoretical topic in practice, create mental activity during the lesson, and develop not only understanding of the topic, but also the ability to explain it. Teachers will also make theoretical lessons enjoyable and interesting.

Liretarure

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