

Liceul Tehnologic "Axiopolis"

Cernavodă -România

E-Magazine -Green Chemistry



Our students participated in collaborative activities focused on creativity, communication, and teamwork. They worked in groups to complete tasks, share ideas, and develop new skills. The activities helped them understand the importance of cooperation and cultural exchange.

FOOD ADDITIVES - THE CHEMICALS IN OUR FOOD

WHAT ARE FOOD ADDITIVES?
Food additives are chemicals added to food to improve taste, color, texture or to make food last longer.

COMMON TYPES OF ADDITIVES:

- Preservatives - prevent spoilage
- Colorants (E100-E182) - give bright colors
- Flavor (E150-E165) - make food taste better
- Emulsifiers (E320-E322) - help mix oil and water
- Stabilizers (E310-E317) - help mix and prevent separation

HEALTH AND ENVIRONMENTAL EFFECTS:

- Some additives can cause allergies or hyperactivity in children
- Artificial colors and flavors can be harmful
- Long-term health risks

SAFER ALTERNATIVES:

1. Eat fresh fruits and vegetables
2. Choose products with no artificial additives
3. Use natural colors and flavors (like beet juice, turmeric or lemon)

21.10.2025
Georgehe Robert-Andrei

AGRICULTURE AND PESTICIDES

WHAT ARE PESTICIDES:

- Pesticides are chemical or biological substances used to control pests that harm crops.

TYPES OF PESTICIDES:

- Insecticides - control insects
- Herbicides - kill weeds
- Fungicides - prevent fungal diseases
- Rodenticides - control rodents

ROLE OF PESTICIDES IN AGRICULTURE:

- Protect crops from pests
- Increase crop yields by reducing losses from pests
- Ensure food security by making production more reliable
- Reduce labor costs and the need for manual weeding or pest control

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Chemistry use in Medicines

How is chemistry used in medicines?

- Chemistry helps extend the shelf life of foods by adding chemical preservatives (sulfuric acid, nitrites)
- Food safety: Chemistry allows for detection of contaminants, pH control to prevent bacterial growth, destruction of natural toxins

WHAT ARE FOOD ADDITIVES USED FOR?

- Improving taste, texture, and appearance
- Food additives have many purposes beyond just making food taste better. Some help maintain the nutritional value of food, others improve processing and storage, while some are used to meet special dietary needs.

21 October 2025

CHEMICALS IN COSMETOLOGY

Chemistry is everywhere - even in products we use daily! From toothpaste to shampoo, deodorant, lotions, and makeup, chemicals help these products work, smell good, and last longer.

Daily Products & Chemicals:

- Toothpaste: Fluoride protects teeth
- Shampoo: SLS and SLES foam
- Deodorant: Aluminum compounds
- Creams/Lotions: Parabens as preservatives
- Perfume: Alcohol and fragrance chemicals

Why it matters: Some chemicals can cause allergies, skin irritation, or harm the environment.

Healthier Alternatives:

- Use natural or organic cosmetics
- Choose products paraben-free, sulfate-free, or alcohol-free
- Try plant-based oils and creams instead of chemical creams
- Read labels carefully before buying
- Recycle packaging

Conclusion: Understanding the chemistry behind everyday cosmetics helps us make safer and more eco-friendly choices for our health and the planet.

Cleaning Tools and their connection to chemistry

Cleaning products are substances used to remove dirt, stains, and bacteria. They work through chemical reactions that dissolve grease, kill germs, and clean surfaces.

- 1 Soap**
It is made from fats and sodium hydroxide. It is better than because molecules attract both oil and grease.
- 2 Detergents**
Detergents contain surfactants that reduce the surface tension of water, making it easier to wash away oils and dirt.
- 3 Disinfectants**
Disinfectants such as chlorine, alcohol, and hydrogen peroxide kill bacteria and viruses through oxidation.
- 4 Descalers**
Acids like vinegar or citric acid are used to remove mineral deposits from surfaces.
- 5 Bleaches**
Bleaches contain strong oxidizing agents that remove colored stains and make surfaces white and clean.
- 6 Cleaning tools**
Cleaning tools such as sponges, cloths, brushes, and vacuum help physically remove dirt and increase the effect of cleaning products.

21.10.2025
ra mont Alexandra

Chemistry and Medicines

The Science Behind Healing
Chemistry is at the heart of every medicine we use. It helps scientists understand how molecules behave in the body and how to design drugs that fight disease, ease pain, and improve lives. Without chemistry, modern medicine would not exist.

The Importance of chemistry in medicines

- Designing New Medicines**
Chemists use their knowledge of molecular structures to create new drugs that target specific parts of the body.
- Improving Safety and Effectiveness**
Chemistry helps scientists understand how a drug interacts with the body, ensuring it is safe and effective.

From Nature to Cure

- Nature as a Source**
Many medicines are derived from natural sources like plants, animals, and minerals.
- How Medicines Work**
Chemistry explains how a drug enters the body, how it interacts with cells, and how it produces its effects.
- Chemistry Saves Lives**
From antibiotics to cancer treatments, chemistry has revolutionized medicine and saved countless lives.

FOOD ADDITIVES

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HOW CHEMISTRY SHAPES WHAT WE EAT?

Chemistry helps preserve food, improve its taste, texture, and appearance, and keeps it safe for consumption. Through chemical reactions, such as fermentation or the Maillard reaction, raw ingredients are transformed into delicious meals.

Some of our work



**ENVIRONMENTALLY
FRIENDLY
CHEMISTRY**



**GREEN
CHEMISTRY**



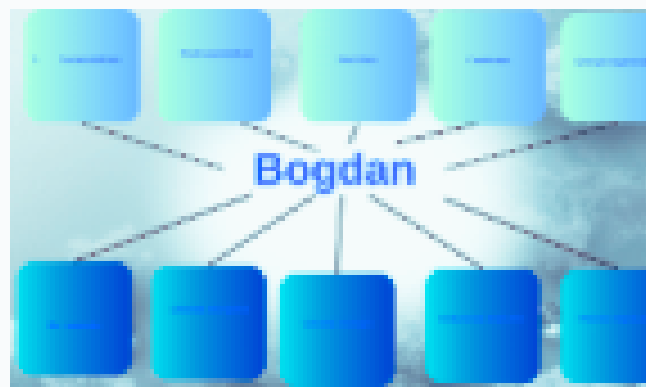
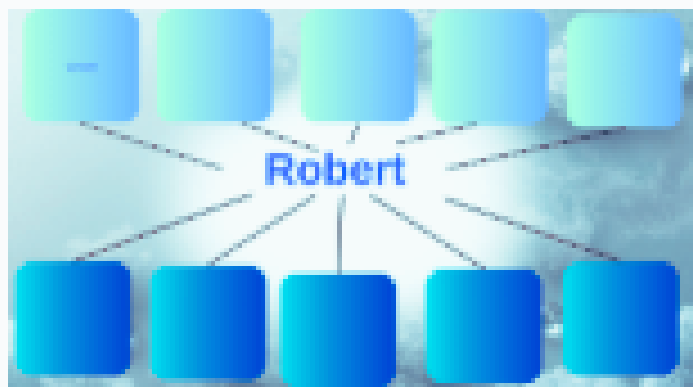
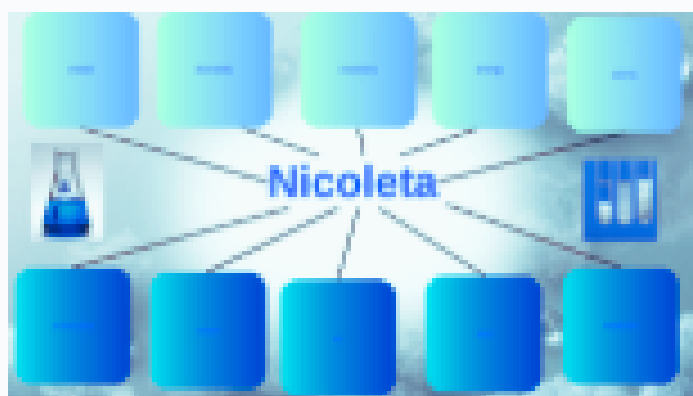
**ENVIRONMENTALLY
FRIENDLY
CHEMISTRY**



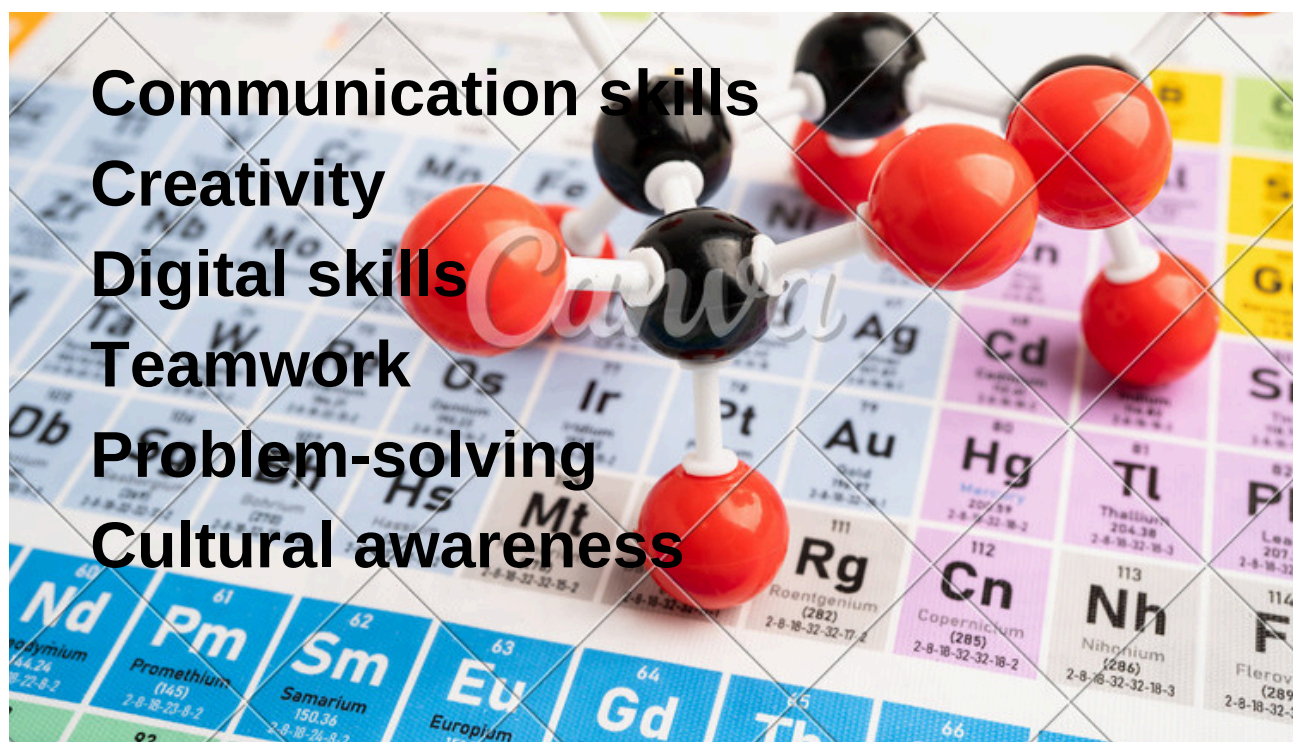
**Environmentally Friendly
Chemistry**

**TOGETHER FOR A
SUSTAINABLE
TOMORROW**

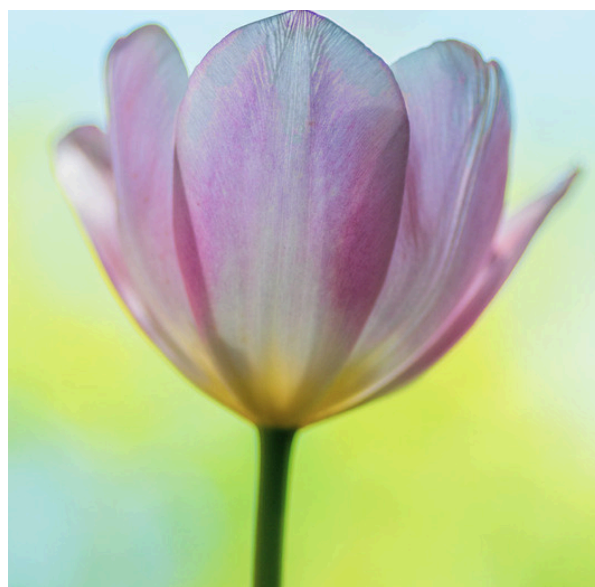
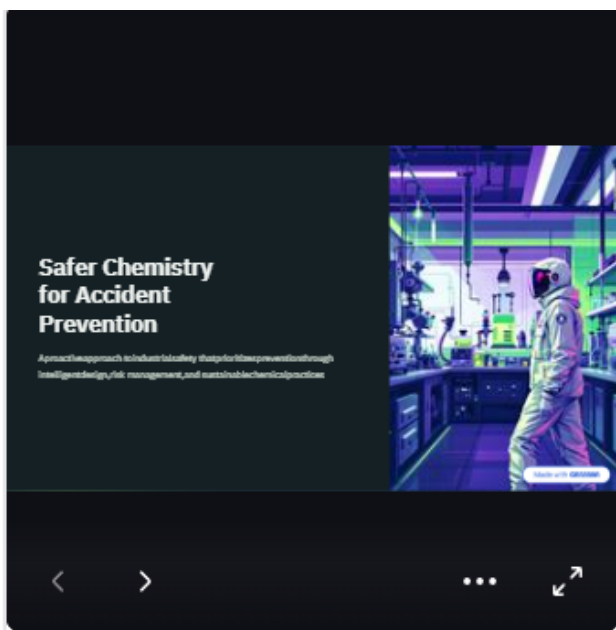




Skills Developed ★



Communication skills
Creativity
Digital skills
Teamwork
Problem-solving
Cultural awareness



- “I enjoyed working with students from other countries and learning new things.”
- “The project helped me improve my communication skills.”
- “I learned how important teamwork is.”
- “Green chemistry taught me that science can help protect the planet, not just change it.”
- “I learned that small choices in experiments can reduce pollution and waste.”
- “Before this project, I didn’t realize how chemistry affects the environment every day.”
- “Green chemistry makes me feel like scientists can be heroes for the Earth.”
- “I liked learning how to create safer materials and use less harmful chemicals.”
- “Now I understand why recycling and reducing waste are connected to chemistry.”
- “I discovered that chemistry is not only about formulas, but also about responsibility.”

Our team members: Ramona , Ionuț, Robert, Nicoleta, Andrei, Mario, Bogdan.

Conclusion

