Task name: OXIDATION DRAWING (BANANA TATTOO)

Age: preschool, 7th grade of primary school, high school age

Description:

This task should encourage students to create their own drawing by the oxidation process on the surface of a banana peel. This task can also be called banana branding or tattooing. It is performed by the student transferring an indigo drawing or some other illustration to the surface of a banana peel. After that, by stabbing the surfaces (which should be dark in the illustration - the initial drawing), it causes an oxidation-reduction process that darkens the stung surfaces and thus obtains an image.

• **Project**:

Brand - personalize a banana

• Topics covered in the STEAM area:

Chemistry

Art

• Target group (age and group size)

Preschool age up to 18 years

• Duration of activities:

- two workshops in school,

- two evaluation workshops in school (one for the evaluation of learning objectives and one for the evaluation and summarization of results and each phase of the process)

Each activity lasts 20 minutes. Preparation for each activity takes 20 minutes.

• Key words:

Chemistry, oxidation, fine arts, texture

• Key sentence describing the context of the activity, followed by a short description (200 words)

This is a learning activity in which students will acquire and improve their knowledge in the field of chemistry, natural physical and chemical processes, artistic expression.

Students will create tiles on a banana peel by transferring them with indigo paper from an illustration of adequate size (cut-out from a newspaper, etc.) or, if they have drawn it themselves, they will print the desired motif.

For preschool age, it is necessary for adults to prepare the material for children. The prepared illustrations are transferred to the surface of the banana and there the parts of the illustration that should be darker are pricked with a needle or a toothpick, thus causing the physico-chemical, oxido-reduction processes.

The surface of the banana treated with the sting darkens and in this way an image is created modeled on the initial illustration. This project enables students to materialize and apply knowledge and skills in chemistry while solving problems and making decisions based on their own knowledge, creativity and imagination.

In preparation for this project, explain to students the oxidation-reduction processes in accordance with their age and previous knowledge. Give preschool children examples from nature where oxidation-reduction processes take place: in autumn, when dark spots-oxidation appear on plants. Also, it is very important for preschool children to respect the boundaries of the drawn motif and not to cross them when stinging (it is recommended that they sting with a toothpick).

This project is designed to encourage students to get to know and apply physical and chemical processes that we apply in nature through the expression of their own creativity. Also, this project should encourage them to apply, observe, and analyze these and similar processes in various projects. This project can also be applied when it comes to advertising and marketing in general.

• Description of the activity environment, including a list of required materials and tools:

Formal activities are performed in school, kindergarten, where students express their creativity by working on this project.

Materials needed for work: fresh bananas, illustration, thin needle or toothpick

• Step by step, detailed description of activities, including teaching and learning strategies:

- Students have a dialogue with the teacher and with each other about the application of previously learned concepts in chemistry, art - surface, texture

- Students participate in workshops and learn about oxidation-reduction processes

- Students draw or otherwise prepare their illustrations in art classes

- Students learn chemistry

- Students give suggestions for further research on the topic.

During this scenario, students will explore:

- The natural environment

- Chemistry, physico-chemical, oxido-reduction processes

- Transmitting the drawing and stinging, they will see the importance of gradualness in making this project

- Aesthetic principles and values

• Learning objectives / competencies:

This workshop describes how to research chemistry through practical activities. The described activities can be used to connect chemistry and art. Workshops could be realized in regular school classes as a project in several possible subjects and with several ages of project participants.

Domain-specific goals are learning about:

- Symmetry

- Proportions

- Recycling

- Sustainability

- Gender equality

- Inclusion

• Guidelines for evaluation / assessment

Evaluation is done through informal feedback from students by interacting with other students and through formal assessment by the teacher

• **Contact**:

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