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| ACTIVITY PLAN | | | | |
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| **Theme** | **Subtopic** | **Activity Title** |
| Environmental Awareness and Conservation | Sustainable Living and Green Technologies | * The Role of Microplastics in Cosmetics: Challenges and Possible Solutions * Natural Body Scrub Making |

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| Introduction part (or activity overview) |
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| **Introduction part (or activity overview)** | In exploring the topic of microplastics' role in cosmetics, students will learn about the environmental and human health issues associated with microplastics and possible solutions that could be implemented to reduce the use of microplastics in the cosmetics industry. Students will gain practical skills in making natural body scrubs while adhering to hygiene standards. |
| **SETTING** | A classroom equipped with multimedia projectors, mobile phones, computers for groups of students to perform the theoretical part.  A chemistry lab where necessary educational materials are available. |

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| Materials Needed |
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| **Materials Needed** | Various materials for making body scrub (see activity content or use information found in digital space).  Tools: scales, measuring cylinder, pestle and mortar, electric grinder, reusable containers for the finished product (e.g., used cosmetic containers), tools for creating labels, dyes, coloring tools (colored pencils, gouache, markers, acrylic paints, and other decoration tools). |

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| **Learning Outcomes** | * Understand the prevalence of microplastics and their impact on cosmetics products. * Acquire knowledge about the effects of microplastics on water systems, ecosystems, and human health. * Gain the ability to analyze and assess the situation regarding the reduction of microplastics in cosmetics based on scientific research, statistics, and legal analysis. * Identify and evaluate possible solutions that could be implemented to reduce the use of microplastics in cosmetics. * Improve skills in creating unique body scrubs with different components and textures. * Enhance digital skills in searching for information in various sources and applying them to product manufacturing. |  |
| **Activity Contents** | **Activity 1: Introduction about microplastics, their prevalence, impact on human health, and ecosystems.**  **Theoretical Part (Duration: 90 minutes):** Discussion about microplastics and their use in cosmetic products, including creams, shampoos, toothpaste, laundry detergents, and many other products. They were added to these products as softening, shining, or abrasive elements. Microplastics were favored for their cheapness, flexibility, and long shelf life. However, many countries have taken action to limit or ban the use of microplastics in cosmetic products due to environmental pollution. For example, the European Union adopted a law prohibiting the use of microplastics in cosmetic products from January 1, 2020. However, some microplastics can still be used in cosmetic products, such as polyethylene, polypropylene, polystyrene, etc. This may be why it is important to carefully read product labels and avoid products containing such ingredients. Many cosmetics companies have also started to create alternative products where microplastics are replaced with natural or biodegradable ingredients. For instance, instead of microplastic abrasives, natural particles such as sugar, salt, ground coffee, or olive pits, etc., can be used.  **Task 1: Discussion**  Students are divided into groups and, after reviewing links:  <https://www.youtube.com/watch?v=Q1EWocb7oR0>  Duration: Approx. 3 minutes  <https://www.youtube.com/watch?v=QGDKmA-ZU3w>  Duration: Approx. 7 minutes    <https://www.youtube.com/watch?v=B4pzGayFV4w>  Duration: Approx. 14 minutes  or using digital sources, discuss the following topics:   1. **Environmental Impact:**    * How can microplastics from cosmetic products enter water systems and soil?    * What impact do they have on aquatic animals and ecosystems?    * Are there alternative materials that can be used in cosmetics without negative consequences for the environment? 2. **Health Risks:**    * Can microplastics in cosmetics pose a danger to human health?    * How can they enter the human body through the skin or other means?    * What kind of research is needed to assess this risk? 3. **Actions of the Cosmetics Industry:**    * How does the cosmetics industry respond to concerns about microplastics and what measures does it take?    * Do companies take responsibility and strive to transition to more environmentally friendly ingredients? 4. **Legal Measures and Regulation:**    * What are the legal regulations regarding the use of microplastics in cosmetics in different countries or regions?    * Are stricter legal measures needed to protect the environment and consumers? 5. **Consumer Information and Awareness:**    * How can consumers be informed about products containing microplastics?    * How to encourage conscious consumption and choices that are friendly to the environment? 6. **Alternative Materials and Innovations:**    * What alternative materials can be used in cosmetics as substitutes for microplastics?    * How can innovations encourage the development of more environmentally friendly cosmetic formulas?   Each group prepares a presentation using Microsoft PowerPoint, Padlet, Canva, Movie Maker (for creating movies), or another presentation program.  **Task 2:** Students bring 2-3 cosmetic product packages to the class. They analyze, discuss, draw conclusions, and present to their classmates on the following aspects:   1. **Ingredients:** Look at the list of ingredients. It's important to pay attention to the first ingredients listed, as they make up the majority of the product. 2. **Preservatives:** Note the presence of chemical substances such as parabens or sulfates. 3. **Product Purpose:** Most cosmetics labels indicate the intended use of the product (for example, for dry skin, oily skin, shampoos for specific hair types). 4. **Usage Instructions.** 5. **Expiration Date.** 6. **Special Labels:** Cruelty-Free and Vegan.   Formos viršus  **Activity 2 (Duration: 90 minutes): Natural Body Scrub Making.**  **Theoretical Part:** Natural body scrubs help remove dirt, dead skin cells, moisturize, and nourish the skin. Therefore, they can be made by oneself.  **Task:** Students are divided into pairs, make body scrubs, with recipes from the internet or try to create their own recipe from the materials brought. They create a label for the product, packaging considering the following requirements:   1. The label must indicate the name, list of ingredients in descending order, package weight, expiry date, storage, and usage instructions. 2. Packaging material should be recyclable or made from renewable resources. 3. Choose packaging that is sustainable and made using fewer resources, such as cotton, bamboo, glass, or other natural and sustainable materials. 4. Opt for smaller packaging, as it means less waste and a smaller environmental impact. 5. Add labels on the package informing consumers how to properly recycle or dispose of the package. 6. Calculate the cost of the product. 7. Present and advertise the manufactured product. 8. Discuss their successes and failures in making the body scrub.   **1. Sea Salt Scrub:**   * 1 tablespoon of sea salt (or another fine salt) * 0.5 tablespoon of olive oil * 0.5 tablespoon of honey * A pinch of ground cinnamon and cardamom * 1 tablespoon of lemon juice (or 3 drops of grapefruit essential oil)   How to make: Mix everything together. Store the prepared scrub in an airtight and clean jar in a cool place. The salt can be replaced with brown sugar (it should be ground in a coffee grinder to make the exfoliating effect softer), and the olive oil can be substituted with coconut oil.  **2. Coconut and Lime Scrub:**   * 100g of white sugar * 25g of melted coconut oil * 1 teaspoon of coconut flakes * 3-4 drops of lime essential oil   How to make: Mix the melted coconut oil with sugar until it becomes a uniform mass. Add the coconut flakes and lime essential oil to the mixture and mix well. Store the prepared scrub in an airtight and clean jar in a cool place.  **3. Lavender Scent Scrub:**   * 0.5 cup of Dead Sea salt, * 1 tablespoon of baking soda, * 0.5 tablespoon of lavender flowers, * 0.5 teaspoon of apricot kernel oil, * 3-4 drops of lavender essential oil.   How to make: Mix the salt with baking soda, lavender flowers, apricot kernel oil, and lavender essential oil. Place the mixture in a tightly sealed container. Shake the contents of the container before use.  **4. Chocolate Scrub:**   * ½ cup of white sugar, * ½ cup of brown sugar, * ½ cup of coconut oil, * ¼ cup of cocoa.   How to make: Mix the white and brown sugar, pour in the coconut oil, and add the cocoa. Mix everything well. Place the mixture in a tightly sealed container. Store the prepared scrub in an airtight and clean jar in a cool place.**Formos viršus**  **5. Honey Scrub:**   * 3 teaspoons of honey, * ¼ cup of olive oil, * 1 cup of oatmeal, * 2 teaspoons of lemon zest.   How to make: Mix the honey with olive oil. Pour the mixture into the oatmeal, add lemon zest, and mix again. Place the mixture in a tightly sealed container. Store the prepared scrub in an airtight and clean jar in a cool place.  **6. Almond Scrub:**   * 3 teaspoons of honey, * 3 teaspoons of olive oil, * 1 cup of sea salt, * 11 almonds, * ¼ cup of lemon juice.   How to make: Grind the almonds in an electric grinder. Then mix them with olive oil, sea salt, honey, and lemon juice. Place the mixture in a tightly sealed container. Store the prepared scrub in an airtight and clean jar in a cool place.  Scrub recipies links:  <https://manogyvenimas.lt/odos-sveitikliu-receptai-kuriuos-galite-pasidaryti-namuose/>  <https://www.15min.lt/gyvenimas/naujiena/mada-ir-grozis/pasigaminkime-pacios-kuno-sveitikliai-1062-281483> |  |
| **Assessments** | Each student self-assesses their work according to the provided annex No. 1. Each group presents their work results, evaluates successes and failures, their contribution to the group work, performs a verbal reflection, and is graded. The assessment includes all class students. |  |
| **Key Competences** | Cognitive competence  Creativity competence  Communication competence  Social, emotional and healthy living competences  Citizenship competence  Digital competence  Cultural competence |  |
| **Connections with Eco STEAM** | Eco - choice of environmentally friendly materials and their property research.  Science - knowledge in biology, chemistry, economics, and environmental sciences.  Technology - technological solutions in making/creating body scrub.  Engineering – making body scrub from ecological materials/resources.  Art - creative solutions that convey the impact of microplastics on the environment, life, and promote sustainable thinking and aesthetics.  Math - students can analyze and interpret data about the use of microplastics in cosmetics, their prevalence in the environment, and their possible impact on health and ecosystems. |  |
| **References** | <https://www.15min.lt/gyvenimas/naujiena/mada-ir-grozis/pasigaminkime-pacios-kuno-sveitikliai-1062-281483?utm_medium=copied> |  |
| **Notes** |  |  |
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| Research Guide for Activity 1 |
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**Annex 1**. **Assessment Table**

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| Skills in addressing theoretical and practical questions: | I know very well | I know well | I know satisfactorily | What I didn't understand/didn't know and what else I need to learn |
| 1. Formulate the purpose and tasks of the practical work. |  |  |  |  |
| 1. Develop a work plan. |  |  |  |
| 1. Independently make a body scrub. |  |  |  |
| 1. Create a label for the product, considering the requirements. |  |  |  |
| 1. Create packaging for the product, considering the requirements. |  |  |  |
| 1. Calculate the cost of the product. |  |  |  |
| 1. Formulate conclusions and present the work. |  |  |  |