CREAM PRODUCTION

Unite/Theme: Entrepreneurship

Pursope: To develop a useful product/design for society by using innovative thinking skills.

CURIOUS BOX

MEB Learning Outcomes

Students discuss a need encountered in daily life and use innovative thinking skills to develop a product or design that benefits society.

Designs a name, packaging, and usage recommendation for the cream. Shares the product's societal benefit and the development process within the group.

What Do You Know?

- Which products do we use in daily life to protect our skin? ☐
- Why do you think the skin is so important for our body? ☐
- What should be considered for a product to be "beneficial" and "safe"? ☐

CURIOUS BOX

Explain what you know! ✅

Let's Spark Curiosity!

Come on, let's start exploring!

"It is our five sense organs that guide us in understanding and experiencing our environment. With our eyes, we observe the world; with our ears, we distinguish sounds; with our tongue, we explore tastes; with our nose, we recognize smells; and through our largest sense organ, the skin, we interact with our surroundings by touch. The skin not only acts as a shield protecting our body from external factors but also allows us to perceive stimuli such as temperature, pressure, and touch.

So, what can we do for our skin, which covers and protects our entire body? Is it possible to design products that are healthier, safer, and more beneficial?"

The activity materials are then taken out and examined. Students are asked, "What do you think we will do with these materials?" After receiving their answers, the activity begins.

Kit Contents

The activity video is watched by pausing at certain points. Before starting the activity, the contents of the kit are checked. All lid-opening and package-opening steps are carried out simultaneously with the students.

- [ ] Mixing bowl
- [ ] Raw Material A
- [ ] Raw Material B
- [ ] Cream container
- [ ] Fragrance
- [ ] Stirring stick
- [ ] Label
- [ ] "Cream Production" experiment report

CURIOUS BOX

How Do We Do It?

1. Half of Raw Material A is poured into the mixing bowl.
2. All of Raw Material B is then added to the bowl and mixed thoroughly.
3. The remaining portion of Raw Material A is poured in and stirred slowly until the mixture reaches the desired consistency.
4. Fragrance is added and mixed.
5. The finished cream is transferred into the cream container using a stirring stick.
6. The container lid is closed, and a label is attached to the box. The cream is ready!
7. The produced cream is then given as a gift to the intended person.

The cream we produced is suitable for use on the hands and feet.

What Should the Scientists of the Future Discover?

Students are asked the following questions:

- What can we do to keep our skin healthy?
- What are the functions of creams, and what do they contain?

Being able to perceive life and continue it in a healthy way depends on the cooperation of the five sense organs. The nose, eyes, skin, ears, and tongue are the sensory organs that carry out this vital function. These organs interact with each other, helping us explore and understand the world around us.

Our largest sense organ is the skin, which covers the outer surface of the human body. The skin is the body's largest organ, with an area of approximately 2 square meters. It makes up about 15% of body weight. For example, in a person weighing 30 kilograms, roughly 4–5 kilograms is skin.

Even though our skin appears soft, it is actually a strong and protective layer that covers the body. It not only protects the body from various microbes but also shields it from chemical and physical effects as well as the sun's harmful rays. The skin contains hair follicles, sweat glands, fat tissue, connective tissue, and blood vessels.

Regular skin care is very important for maintaining a healthy life and protecting overall body health. This care can include simple but effective methods such as cleaning, moisturizing, and sun protection..

What Do Creams Contain?

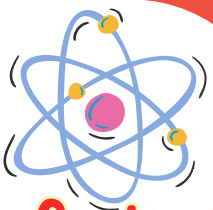
- Water: Creams contain water, which helps keep our skin moisturized.
- Oils and Moisturizers: They include oils and moisturizers that make our skin soft and flexible.
- Vitamins: Some creams contain vitamins, which benefit the skin and help it stay healthy.
- Sun Filters: Sunscreens contain sun filters that protect our skin from the harmful effects of the sun.
- Plant Extracts: Some creams include plant extracts, which can soothe the skin and sometimes add a pleasant fragrance.

The hand cream we produced repairs cracks that form on our hands in cold weather, accelerates cell regeneration, and makes our skin soft and smooth.
Creams are products that help moisturize the skin, keep it soft, and protect it from external factors. In this activity, students create their own cream designs using safe and simple materials, learning through experience how a product is developed.

During this activity, you learned that recognizing a need and developing a product to meet that need forms the basis of entrepreneurship. Entrepreneurship is not only about producing a product, but also about creating safe solutions that make people's lives easier and provide benefits. In the cream production process, you acted like an entrepreneur by deciding which materials to use, determining the purpose of the product, and thinking about how it could be developed.

By using your innovative thinking skills, you transformed a simple idea into a functional product and shared ideas on how this product could benefit society. This process is a real entrepreneurship experience, involving recognizing a problem, generating solutions, and developing them.

A SCIENTIFIC Explanation for the Curious



Students are asked the following questions:

- Do you know that the skin is made up of multiple layers?
- Besides protecting the body, what other functions does the skin have?

The skin consists of three layers: the epidermis, dermis, and subcutaneous tissue. The thickness of the skin and its three layers varies in different regions of our body. For example, the thinnest area is the eyelids, while the thickest areas are the palms of the hands and the soles of the feet. The skin on the back is also among the thickest areas.

Did You Know?

The tongue is a structure that contains taste receptors and allows us to perceive the taste of foods and drinks. The taste buds on the surface of the tongue help us detect flavors such as sweet, sour, salty, and bitter.

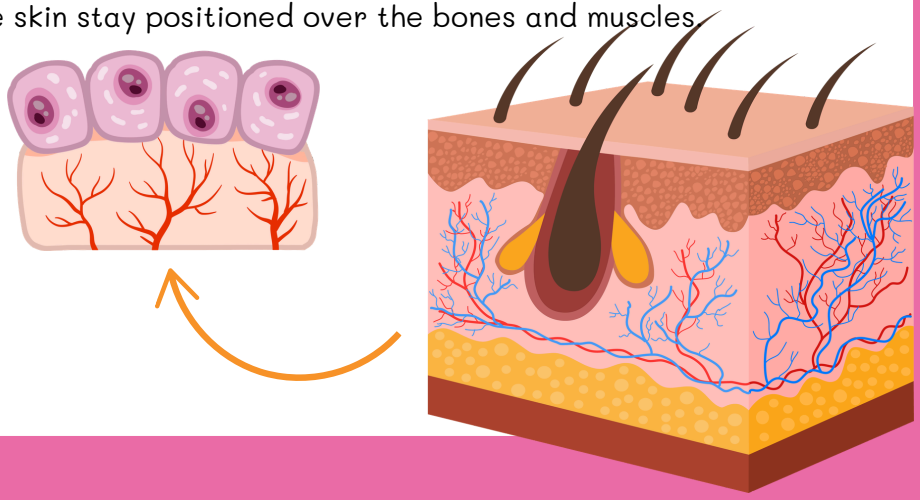
CURIOUS BOX

Skin: The Uppermost Layer

The skin is the outermost layer of the body and is divided into upper and lower layers. It is in direct contact with the external environment and serves a protective function. Melanin, which gives our skin its color, is synthesized in the living part of the epidermis. Nails and hair, which contain keratin, are part of the non-living upper portion of the epidermis. When the skin is damaged, it regenerates. During scrubbing, the dead cells in this non-living layer are removed.

Dermis: Located beneath the epidermis. The collagen in the dermis helps keep the skin youthful. The dermis contains oil glands, nerve endings, capillaries that nourish the skin, sweat glands, and hair follicles.

Subcutaneous Layer: Beneath the dermis lies the subcutaneous tissue, a layer of fat that helps the skin stay positioned over the bones and muscles.



The Importance of Skin in the Body

The skin actively plays a role in many functions, such as regulating body temperature, protecting the body from physical and chemical effects, preventing water loss, and assisting in respiration and excretion.

The first step in creating a product is imagining. Imagining allows you to identify a need noticed in daily life and generate ideas that could provide a solution to that need. Since each individual's imagination and perspective are different, even people designing the same product can develop unique and original ideas. This forms the foundation of innovative thinking and contributes to the emergence of diverse solutions.

The design process is very important for turning an idea into a product. During the design stage, it is planned what the product will be used for, what features it will have, and how it will be developed. Products designed for the same need can be developed differently by different people. This shows that design is not tied to a single "correct" solution. Experiments conducted during the design phase help identify areas of the product that are incomplete or can be improved. Products improved through experimentation become more functional, safe, and effective.

The production stage is when the designed idea is turned into reality. In this stage, selected materials are used carefully, and the work is carried out according to a plan. Even small changes can affect the product's quality, so attention must be paid to measurements, sequence, and safety rules. Ensuring that the product serves its purpose, is easy to use, and does not harm human health is a priority during production. Successful production is possible through the correct application of a well-planned design.
In this activity, during the cream production process, we selected materials according to the design we determined and carefully followed the measurements. While preparing the mixture, we paid attention to hygiene rules and combined the materials in a controlled and conscious manner. Considering the consistency of our cream, its intended use, and the benefits it would provide, we completed the production process. In this way, by using our innovative thinking skills, we consciously designed and produced a safe and socially beneficial product to meet a specific need.

What Did We Discover?

Today, you combined some raw materials to produce a hand cream, and during this process, you discovered that the skin is made up of layers, each of which has a different role in protecting the skin. You realized that the cream you produced is a product that helps keep the skin healthy and protects it against external factors.
You learned that the products you use in daily life are designed for specific needs and go through a planned production process. While making the cream, you experienced how important it is to choose the right and safe materials and how innovative thinking can help develop a product that benefits society.
You can be asked, “Did making the cream excite you?” A “Cream Production” experiment report is then prepared.

What Else Can We Do?

Come on, you try it too!

Dear Teacher,

You explored with your students the process of how a product comes to life and how its production stages take place. Through the Cream Production activity, your students learned by experiencing how an idea is planned and transformed into a product. During this process, by applying the production stages step by step, they developed their scientific thinking and creativity skills.
You can also have them carry out the “Designing Environmentally Friendly Packaging” activity.

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Materials

- Cardboard and paperboard (for the packaging body)
- Colored paper and stickers (for decoration)
- Recyclable string, thread, or rubber bands
- Scissors
- Glue or double-sided tape
- Pencil, markers, ruler (for measuring and drawing)
- Small bags or transparent packaging materials (for inner contents)

Application Steps

Discussion and Idea Generation:
A short discussion is held about the environmental impact of everyday packaging.

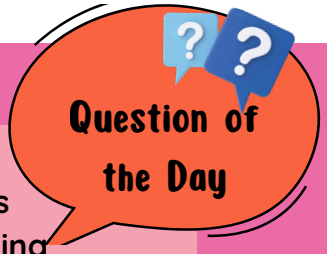
Imagining:
Students imagine a packaging that is easily biodegradable in nature or reusable.

Design Drawing:
They transfer their imagined packaging onto paper with a simple drawing.

Production:
Using recyclable materials such as cardboard, paper, and string, they create the packaging they designed.

Decoration and Completion:
They decorate the packaging with colored paper, stickers, and string, while also increasing its durability.

Discussion and Evaluation:
The class discusses what purposes the produced packaging can serve and how it contributes to the environment.
Students share which needs their product addresses and the points they paid attention to during production.



How many times did Thomas Edison experiment while inventing the electric light bulb?

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