

Photo Description



The picture shows orange and white food pieces on top of green lettuce leaves. The orange pieces look bumpy and round. The white pieces are smooth and flat.

Scientific Phenomena

This image represents the Anchoring Phenomenon of matter having different properties. The food items demonstrate how different materials have distinct observable characteristics - the cauliflower has a bumpy, clustered texture while the cheese or other white ingredients appear smooth. This occurs because different types of matter are made up of different structures and compositions, giving them unique physical properties that we can observe and describe.

Core Science Concepts

1. Observable Properties of Matter - All objects have characteristics we can see, feel, and describe using our senses
2. Sorting and Classifying - Objects can be grouped based on their similar properties like color, texture, shape, and size
3. Using Senses for Investigation - We use our eyes to see colors and shapes, and can use other senses to learn about materials
4. Describing Materials - Scientists use specific words to tell others about what they observe

Pedagogical Tip:

Have students practice being "material detectives" by describing objects without naming them. This builds scientific vocabulary and observation skills essential for First Grade investigations.

UDL Suggestions:

Provide actual food samples for tactile exploration alongside visual observation. Some students learn better through hands-on manipulation and can describe textures, temperatures, and other properties through multiple senses.

Zoom In / Zoom Out

1. Zoom In: At the tiny level we cannot see, the cauliflower is made of many small parts called cells that grow together in clusters, creating the bumpy texture we observe.
2. Zoom Out: These food materials came from plants that grew in gardens or farms, connecting to larger systems where plants need soil, water, and sunlight to grow and create the different materials we eat.

Discussion Questions

1. What words can you use to describe how these foods look different? (Bloom's: Analyze | DOK: 2)
2. How could you sort these food pieces into groups? (Bloom's: Apply | DOK: 2)
3. What do you think would happen if you touched each piece? (Bloom's: Predict | DOK: 2)
4. Which senses could help you learn more about these materials? (Bloom's: Evaluate | DOK: 3)

Potential Student Misconceptions

1. Misconception: "All food is the same material"

Clarification: Different foods are made of different materials with unique properties we can observe and describe.

2. Misconception: "Color is the only way to tell materials apart"

Clarification: Materials have many properties including texture, shape, size, and hardness that help us identify them.

3. Misconception: "Bumpy things are always hard"

Clarification: Texture (bumpy or smooth) and hardness are different properties - something can be bumpy but still soft.

Cross-Curricular Ideas

1. Math - Sorting and Graphing: Create a simple bar graph showing how many bumpy pieces versus smooth pieces are on the plate. Students can practice counting, comparing amounts, and representing data visually.
2. ELA - Descriptive Writing: Have students draw their own food salad and write or dictate 2-3 sentences using describing words (adjectives) like "bumpy," "smooth," "green," and "orange" to tell a story about their meal.
3. Social Studies - Where Our Food Comes From: Discuss how the vegetables in the salad grew on farms. Create a simple "farm to table" sequence showing plants growing in soil, being harvested, and arriving at our plates for eating.
4. Art - Texture Collage: Students create art by gluing different textured materials (bumpy cotton balls, smooth foil, rough sandpaper) onto paper to explore how artists use textures, just like nature creates different textures in foods.

STEM Career Connection

1. Farmer: Farmers grow vegetables like lettuce and cauliflower in gardens and fields. They water plants, pull weeds, and harvest food when it's ready to eat. Farmers help make sure we have healthy food to eat every day. Average Salary: \$68,000/year
2. Food Scientist: Food scientists study how different foods are made and what makes them healthy or yummy. They learn about the properties of ingredients and create new recipes and ways to prepare food. Average Salary: \$75,000/year
3. Chef or Cook: Chefs prepare delicious meals by combining different ingredients like vegetables and other foods. They use their knowledge of how different foods taste and feel together to create meals that look beautiful and taste great. Average Salary: \$63,000/year

NGSS Connections

- Performance Expectation: 1-PS4-1 - Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate
- Disciplinary Core Ideas: 2-PS1.A - Different kinds of matter exist and many of them can be either solid or liquid

- Crosscutting Concepts: Patterns - Patterns in the natural and human designed world can be observed and used as evidence

Science Vocabulary

- * Property: Something you can observe about an object, like its color or shape
- * Texture: How something feels when you touch it, like bumpy or smooth
- * Material: What something is made of
- * Observe: To look carefully and notice details
- * Describe: To use words that tell about what you see
- * Sort: To put things into groups that are the same in some way

External Resources

Children's Books:

- Materials by David Dreier
- What Is It Made Of? by Robin Nelson
- Solids, Liquids, and Gases by David Dreier