

Photo Description



This picture shows a house on a hill with lots of green trees around it. In the distance, you can see a city with tall buildings. The land has rolling hills covered in trees, and there are clouds in the sky above everything.

Scientific Phenomena

The Anchoring Phenomenon this image represents is landform variation and human settlement patterns. The rolling hills visible in the photograph were formed over millions of years through processes like weathering, erosion, and geological activity. Humans have chosen to build homes and cities in different elevations - some on hilltops for views and cooler temperatures, others in valleys near water sources and transportation routes. The dense vegetation shows how plants adapt to different elevations and microclimates within the same region.

Core Science Concepts

1. Landforms and Elevation: Earth's surface has different shapes including hills, valleys, and flat areas that were formed by natural processes over long periods of time.
2. Human Impact on Environment: People build homes, roads, and cities that change the natural landscape and affect plant and animal habitats.
3. Weather and Climate Patterns: Different elevations can have different temperatures and weather conditions, which affects what plants grow there.
4. Natural Resources and Settlement: Humans choose where to live based on access to water, good soil, and natural resources.

Pedagogical Tip:

Use the "I Notice, I Wonder" thinking routine with this image. Have students first observe what they notice, then generate questions about what they wonder. This builds scientific observation skills and natural curiosity.

UDL Suggestions:

Provide multiple ways for students to share observations - verbal discussion, drawing, or using sentence frames like "I see ___" and "This makes me think of ___" to support diverse learners and language development.

Zoom In / Zoom Out

1. Zoom In: At the soil level, tiny organisms like bacteria, fungi, and insects are breaking down dead plant material to create rich soil that helps new plants grow. Root systems of trees and plants help hold the soil in place on these hillsides.

2. Zoom Out: This landscape is part of a larger watershed system where rainwater flows from the hills down to rivers and eventually to the ocean. The trees here help clean the air for the entire region and provide habitat for many animals as part of a bigger ecosystem.

Discussion Questions

1. What do you think this area looked like before people built houses here? (Bloom's: Analyze | DOK: 2)
2. Why might someone choose to live on a hill instead of in the valley? (Bloom's: Evaluate | DOK: 3)
3. How do you think the plants and animals were affected when people built homes in this area? (Bloom's: Analyze | DOK: 2)
4. What evidence can you see that shows how humans have changed this natural landscape? (Bloom's: Apply | DOK: 2)

Potential Student Misconceptions

1. Misconception: Hills and mountains have always been the same shape.

Scientific Clarification: Landforms change very slowly over thousands and millions of years due to weathering, erosion, and other natural processes.

2. Misconception: Building houses doesn't affect nature.

Scientific Clarification: When humans build homes and roads, it changes the natural habitat where plants and animals live, and can affect how water flows across the land.

3. Misconception: All places have the same weather and plants.

Scientific Clarification: Different elevations and locations can have different temperatures, rainfall, and types of plants that grow there.

NGSS Connections

- Performance Expectation: 2-ESS1-1 Use information from several sources to provide evidence that Earth events can occur quickly or slowly.
- Disciplinary Core Ideas: 2-ESS1.C and K-ESS3.1
- Crosscutting Concepts: Patterns and Cause and Effect

Science Vocabulary

- * Landform: A natural feature of Earth's surface like hills, valleys, or mountains.
- * Elevation: How high or low a place is compared to sea level.
- * Habitat: The natural home where plants and animals live and find what they need.
- * Erosion: The process where wind, water, or ice slowly wears away rocks and soil.
- * Settlement: A place where people choose to build homes and live together.
- * Vegetation: All the plants that grow naturally in an area.

External Resources

Children's Books:

- The Magic School Bus Inside the Earth by Joanna Cole
- Mountains by Seymour Simon

- Our Earth by Anne Rockwell

YouTube Videos:

- "Landforms for Kids" - Educational video explaining different types of landforms with simple animations and examples:

<https://www.youtube.com/watch?v=Q5QkdY2NJal>

- "How Mountains are Formed" by National Geographic Kids - Shows how different landforms are created over time: <https://www.youtube.com/watch?v=XiT0eiU8Qws>