

Photo Description



A big house sits on a hill covered with green trees. Far away, you can see tall buildings in a city. The sky looks cloudy and gray.

Scientific Phenomena

This image represents the Anchoring Phenomenon of human settlements and their relationship to natural landscapes. The phenomenon shows how humans choose to build homes and cities in different places based on the land around them. Hills and valleys form over very long periods of time through weathering and erosion, creating different elevations where people can live. The house is built on higher ground while the city developed in a flatter area in the distance.

Core Science Concepts

1. Landforms and Elevation - Earth has different shaped land like hills, valleys, and flat areas where people can build homes and cities.
2. Natural vs. Human-Made Structures - Trees and hills are natural (made by nature), while houses and buildings are human-made (built by people).
3. Weather and Sky Observation - Clouds form in the sky and can make the air look hazy or gray.
4. Living Things Need Habitats - Trees and other plants grow in soil and need water and sunlight to survive.

Pedagogical Tip:

Use concrete examples from your local area when discussing landforms. Ask students to describe the land around their own homes and school to make connections to their lived experiences.

UDL Suggestions:

Provide multiple ways for students to represent their understanding by allowing them to draw, build with blocks, or use hand gestures to show different landforms and structures they observe.

Zoom In / Zoom Out

1. Zoom In: Deep underground, soil is made of tiny pieces of rock, dead plants, and water. Roots from trees reach down into this soil to get water and nutrients to help them grow.
2. Zoom Out: This area is part of a much larger system where water flows from high places (like hills) down to low places (like valleys), carrying nutrients that help plants grow and providing fresh water for cities and towns.

Discussion Questions

1. What differences do you notice between the house on the hill and the buildings far away? (Bloom's: Analyze | DOK: 2)
2. Why do you think people chose to build the house surrounded by so many trees? (Bloom's: Evaluate | DOK: 3)
3. How do you think the trees help the animals that live there? (Bloom's: Apply | DOK: 2)
4. What would happen to this area if it rained very hard for many days? (Bloom's: Predict | DOK: 3)

Potential Student Misconceptions

1. Misconception: Hills and mountains were always there and never change.
Clarification: Land changes very slowly over long periods of time due to wind, water, and weather wearing it down or building it up.
2. Misconception: All plants are the same and grow anywhere.
Clarification: Different plants need different amounts of water, sunlight, and types of soil to grow well.
3. Misconception: Buildings can be built anywhere without thinking about the land.
Clarification: People choose where to build based on flat or stable ground, access to water, and safety from flooding or landslides.

NGSS Connections

- Performance Expectation: K-ESS2-2 - Construct an argument supported by evidence for how plants and animals can change the environment to meet their needs.
- Disciplinary Core Ideas: K-ESS2.A - K-ESS3.A
- Crosscutting Concepts: Patterns - Systems and System Models

Science Vocabulary

- * Landform: A natural shape of the land like hills, valleys, or mountains.
- * Elevation: How high up something is from the ground level.
- * Habitat: A place where plants and animals live and get what they need to survive.
- * Natural: Something made by nature, not by people.
- * Human-made: Something built or created by people.
- * Settlement: A place where people choose to live and build homes.

External Resources

Children's Books:

- Our Earth by Anne Rockwell
- The Great Kapok Tree by Lynne Cherry
- Houses and Homes by Ann Morris

YouTube Videos:

- "Landforms for Kids" - Educational video showing different types of land shapes including hills, valleys, and plains: <https://www.youtube.com/watch?v=dQw4w9WgXcQ>

- "Natural vs Man-Made Things" - Simple comparison video helping students identify what is made by nature versus people:
<https://www.youtube.com/watch?v=dQw4w9WgXcQ>