

Photo Description



A big American flag waves in the wind on top of a tall building. The flag has red, white, and blue colors. There are many tall buildings made of stone and glass around it.

Scientific Phenomena

The Anchoring Phenomenon shown here is wind causing motion. The American flag is moving and waving because invisible air (wind) is pushing against it. Wind happens when air moves from one place to another. Even though we cannot see air, we can see what it does when it pushes on objects like flags, leaves, or our hair.

Core Science Concepts

1. Air is real even though we cannot see it - Air takes up space and can push on things
2. Wind is moving air - When air moves, it can make other things move too
3. Forces cause motion - The wind pushes on the flag and makes it wave
4. We can observe evidence of invisible things - We see the flag moving, which tells us wind is there

Pedagogical Tip:

Use everyday examples like blowing on a pinwheel or feeling wind on the playground to help students connect to the concept that air can push and move things.

UDL Suggestions:

Provide multiple ways for students to experience air movement: visual (watching flags/pinwheels), tactile (feeling wind on their face), and kinesthetic (moving scarves or ribbons in the air).

Zoom In / Zoom Out

1. Zoom In: Air is made of tiny invisible particles called molecules that are always moving and bumping into things. When lots of air molecules move together in the same direction, they push against the flag fabric.
2. Zoom Out: Wind is part of Earth's weather system. The sun heats different parts of Earth differently, causing air to move around the whole planet, creating weather patterns and helping move clouds and storms.

Discussion Questions

1. What do you think is making the flag move? (Bloom's: Analyze | DOK: 2)
2. How can we tell that wind is there if we cannot see it? (Bloom's: Evaluate | DOK: 3)
3. What other things have you seen move because of wind? (Bloom's: Remember | DOK: 1)

4. What would happen to the flag if there was no wind? (Bloom's: Apply | DOK: 2)

Potential Student Misconceptions

1. Misconception: "There is no air when it's not windy."

Clarification: Air is always around us, but we only notice it when it moves (becomes wind).

2. Misconception: "Only big winds can move things."

Clarification: Even gentle air movement can make light objects like flags, leaves, or paper move.

3. Misconception: "The flag moves by itself."

Clarification: The flag needs a force (wind) to push it and make it move.

NGSS Connections

- Performance Expectation: K-PS2-1 Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object
- Disciplinary Core Ideas: K-PS2.A - Forces and Motion
- Crosscutting Concepts: Cause and Effect

Science Vocabulary

- * Wind: Moving air that we can feel and see effects of
- * Force: A push or pull that can make things move
- * Motion: When something moves from one place to another
- * Air: The invisible gas all around us that we breathe
- * Push: A force that moves something away from you

External Resources

Children's Books:

- The Wind Blew by Pat Hutchins
- Gilberto and the Wind by Marie Hall Ets
- Feel the Wind by Arthur Dorros

YouTube Videos:

- "What is Wind? - Weather for Kids" - Simple explanation of wind formation with animations (<https://www.youtube.com/watch?v=e8kfGg4psOE>)
- "Air is There - Science for Kids" - Demonstrates that air takes up space with fun experiments (<https://www.youtube.com/watch?v=VydPQuLyEns>)