

Photo Description



A tall building has a big clock on its stone wall. The American flag waves in the wind above the clock. The clock shows the time with black hands pointing to different numbers.

Scientific Phenomena

The Anchoring Phenomenon is the motion of objects caused by forces. The flag is moving because wind (moving air) pushes against it, creating a force that makes the fabric wave and flutter. The clock hands move in a circular pattern because of mechanical forces inside the clock that push the hands around the clock face at regular time intervals.

Core Science Concepts

1. Forces cause motion - Wind is a force that pushes the flag, making it move and wave
2. Objects can move in different ways - The flag moves back and forth while clock hands move in circles
3. Some motions repeat in patterns - Clock hands move around the same path over and over
4. Wind is moving air - Air that moves fast enough can push lightweight objects like flags

Pedagogical Tip:

Have students wave scarves or ribbons to feel how their arm motion creates "wind" that makes the fabric move, connecting their actions to the force concept.

UDL Suggestions:

Provide kinesthetic learners with hands-on experiences using pinwheels, streamers, or fans to observe how air movement creates forces that cause motion.

Zoom In / Zoom Out

1. Zoom In: Inside the clock, tiny gears and springs work together like a machine. The gears have teeth that push against each other to move the hands at just the right speed.
2. Zoom Out: This clock is part of a larger weather system where air moves across the city, state, and country. The same wind moving this flag might travel hundreds of miles and move flags in other places too.

Discussion Questions

1. What do you think would happen to the flag if there was no wind? (Bloom's: Predict | DOK: 2)
2. How are the flag's movement and the clock hands' movement different? (Bloom's: Compare | DOK: 2)
3. What other things have you seen move because of wind? (Bloom's: Remember | DOK: 1)

4. Why do you think the clock hands keep moving even when the wind stops? (Bloom's: Analyze | DOK: 3)

Potential Student Misconceptions

1. Misconception: The flag moves by itself

Scientific Clarification: Flags need wind (moving air) to push them and make them move

2. Misconception: All things move the same way

Scientific Clarification: Different objects move in different patterns - flags wave back and forth, clock hands move in circles

3. Misconception: You can't see forces

Scientific Clarification: While we can't see wind directly, we can see what it does when it pushes objects like flags

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

- * Force: A push or pull that can make things move
- * Motion: When something changes position or moves from one place to another
- * Wind: Moving air that can push against objects
- * Pattern: Something that repeats the same way over and over
- * Circular: Moving in a round path like a circle

External Resources

Children's Books:

- Forces Make Things Move by Kimberly Bradley
- The Wind Blew by Pat Hutchins
- Clocks and More Clocks by Pat Hutchins

YouTube Videos:

- "What is Force and Motion? | Physics for Kids" - Simple explanation of pushes, pulls, and movement with animated examples (<https://www.youtube.com/watch?v=1aKVZaP7dJU>)
- "Wind Power for Kids" - Shows how wind moves objects and creates energy with kid-friendly demonstrations (<https://www.youtube.com/watch?v=0fJUFb8eWS4>)