🧪 Science in the Movies: Honey, I Shrunk the Kids (1989)

Grade Level: 5–9
Topics: Physics · Chemistry · Scale · Scientific Method
Scene: Wayne Szalinski's shrink ray accidentally miniaturizes his children.
Approx. Timestamp: 00 : 20 : 00 – 00 : 25 : 00

🌱 Before You Watch

1. What would happen if something the size of a human suddenly became the size of an ant?
2. How might scientists test inventions safely before human use?
3. Why is observation important when testing new technology?

💭 Prediction Time!

What everyday objects might become dangerous when someone is miniature-sized?

🧪 A. Science Connections

1. What scientific principle allows matter to be rearranged without changing its total mass?
2. Why would shrinking humans to microscopic size require changing atomic spacing?
3. What everyday forces (air resistance, friction, surface tension) become stronger when scale changes?
4. How does the inventor apply (and ignore) the scientific method?

📊 B. Data & Analysis

1. If a person 1.6 m tall is shrunk by a factor of 100, how tall are they now?
2. A grass blade 0.5 cm thick at normal scale appears how thick to the shrunken kids?
3. How does changing scale affect speed, strength, and energy use?

🌍 C. Real-World Connection

1. What real technologies use similar concepts of manipulating matter (e.g., nanotechnology)?
2. How do scientists study particles and molecules too small to see?
3. What safety measures keep experimental research under control?

💡 D. Reflection

- What lesson about responsibility in science does the movie teach?
- Why are failed experiments sometimes more valuable than successful ones?
- ✨ *Complete:* “Science lets us imagine the impossible by …”

🧮 Did You Know?

Real scientists explore the world at nano-scale using **Scanning Tunneling Microscopes (STM)** to move single atoms.
Manipulating matter at that level can create new materials for medicine, energy, and electronics.

🎯 Extension (Optional)

Design a **Nano-Invention!**
Draw or describe a tool that could help humans work at micro or nano scale.
Label its energy source, purpose, and safety features.
