

## Core Skills Analysis

### Physics

- Understood the fundamental concepts of kinetic and potential energy demonstrated through trampoline jumping.
- Learned how energy is converted between kinetic and potential forms during motion.
- Recognized real-life applications of physics principles by linking the trampoline activity to energy transformation.
- Gained introductory awareness of how forces and motion relate to energy changes in everyday activities.

### Tips

To deepen Tim's understanding of kinetic and potential energy, encourage hands-on exploration by building simple pendulums or ramps to observe energy conversion firsthand. Incorporating experiments such as measuring jump heights or timing trampoline bounces can reinforce concepts quantitatively. To bridge physics with creativity, challenge Tim to create diagrams or animations illustrating energy transition during different movements. Finally, connecting the physics of trampolines to sports, amusement park rides, or natural phenomena can broaden his appreciation of energy principles in the world around him.

### Book Recommendations

- [Energy Makes Things Happen](#) by Kimberly Brubaker Bradley: A child-friendly exploration of various types of energy and how they work in daily life.
- [Motion: Push and Pull, Fast and Slow](#) by Doreen Cronin: An accessible introduction to forces and motion with engaging illustrations and simple concepts.
- [Physics for Kids: Simple Experiments in Motion and Energy](#) by Robert W. Wood: Hands-on experiments designed to teach kids fundamental physics concepts including kinetic and potential energy.

### Learning Standards

- NGSS MS-PS3-1: Use models to describe that energy in animals' food was once energy from the sun.
- NGSS MS-PS3-2: Develop a model to describe that when the arrangement of objects changes, different amounts of potential energy are stored.
- NGSS MS-PS3-5: Construct, use, and/or present arguments supported by evidence for how energy changes form during various processes.

### Try This Next

- Create a worksheet where Tim labels the stages of energy transformation during a trampoline jump with diagrams.
- Design a quiz with questions such as 'What type of energy is highest at the top of a jump?' and 'When is kinetic energy greatest?'

### Growth Beyond Academics

Tim's engagement in discussing the physics of trampoline jumping may reflect growing curiosity and enthusiasm for exploring how science applies to fun activities. This indicates a developing confidence in connecting abstract concepts with everyday experiences, promoting independent thinking and focus.