## Core Skills Analysis

### Simulator game

- The 12-year-old student learned about physics concepts like inertia and gravitational forces through designing rollercoaster tracks in the simulator game.
- They gained problem-solving skills by overcoming challenges related to constructing loops, curves, and drops in the rollercoaster design.
- The student developed creativity and critical thinking by experimenting with different track layouts and coaster speeds to optimize the experience for virtual riders.
- Through trial and error in the simulator game, the student understood the importance of balance and stability in creating a thrilling yet safe rollercoaster ride.

### Tips

To enhance learning beyond the activity, encourage the student to research real-world rollercoaster designs and principles. They can explore concepts like friction, momentum, and energy conservation to improve their virtual coaster creations. Additionally, encourage them to collaborate with friends to create multiplayer rollercoaster experiences or participate in online forums dedicated to simulator game enthusiasts to share ideas and learn from others.

### Book Recommendations

- Roller Coaster by Marla Frazee: A picture book that follows the construction of a roller coaster, introducing engineering concepts in a fun and engaging way.
- The Thrilling Adventures of Lovelace and Babbage: The (Mostly) True Story of the First Computer by Sydney Padua: A graphic novel that explores the history of computing with a humorous twist, inspiring creativity and problem-solving skills.
- Rosie Revere, Engineer by Andrea Beaty: A story about a young inventor who learns that failure is an essential part of the creative process, promoting resilience and innovation.