Core Skills Analysis

STEM and Design Technology

- Developed spatial reasoning skills by designing and arranging mazes and obstacle courses within Maker's Empire.
- Applied problem-solving techniques to create navigable paths and overcome design challenges in virtual environments.
- Practiced digital literacy by using specialized software tools for 3D modelling and creative construction.
- Enhanced understanding of cause and effect through iterative testing and refining of maze layouts to ensure they function as intended.

Creative Thinking and Problem Solving

- Encouraged creativity by inventing original maze and obstacle course designs, blending imagination with purposeful structure.
- Engaged in critical thinking to anticipate user interaction while planning challenging yet achievable courses.
- Fostered persistence by experimenting with different configurations and adjusting based on trial results.
- Built confidence in decision-making as designs transformed from concepts to interactive virtual experiences.

Tips

To deepen the student's understanding of design and problem-solving, encourage them to start documenting their maze ideas through sketches and flowcharts before moving into Maker's Empire. This helps translate abstract thoughts into tangible plans, reinforcing planning skills. Introducing real-world analogs, like building physical mazes with household items, can provide a hands-on dimension to complement digital creation. Challenge the student to explain their design choices verbally or through a simple presentation to build their communication skills and reinforce their strategic thinking. Additionally, connecting the activity to basic coding concepts—such as creating sequences or commands to navigate the maze—can lay groundwork for computational thinking.

Book Recommendations

- [Rosie Revere, Engineer](#) by Andrea Beaty: A story that inspires young learners to embrace creativity and persist in problem-solving, focusing on an inventive girl engineer.
- [What Do You Do With an Idea?](#) by Kobi Yamada: Encourages children to nurture their ideas and bring them to life, reinforcing the value of creativity and perseverance.
- [Maze Runner: The Graphic Novel](#) by James Dashner: An engaging graphic novel introducing readers to maze challenges, stimulating interest in puzzles and problem-solving.

Learning Standards

- Australian Curriculum: Technologies (Design and Technologies) - ACTDEK023: Investigate needs or opportunities for designing and producing digital solutions.
- Australian Curriculum: Technologies (Digital Technologies) - ACTDIP014: Work independently, or with others when creating a sequence of steps and decisions (algorithms) to solve a problem.
- Australian Curriculum: Critical and Creative Thinking - ACTDIP018: Use creative and critical thinking to generate ideas and solve problems.

Try This Next

- Create a worksheet prompting the student to design their maze first on paper, including start and end points, traps, and checkpoints.
- Develop a quiz on basic spatial vocabulary and problem-solving strategies related to maze construction.
- Encourage a storytelling task where the student imagines a character navigating their maze and writes a short adventure tale.

Growth Beyond Academics

The activity likely fostered a sense of accomplishment and persistence, as the student iterated on their designs to improve functionality. Their engagement with creating mazes suggests curiosity and willingness to solve complex problems independently, reinforcing self-confidence and focus.