

Name _____

The Time Machine of 3D Printing: How Long Does It Take to Print an Object?

Open-Ended Response Answer Key

1. For the highly detailed figurine, factors like its complexity, small size, and choice of finer layer heights would likely increase printing time. In contrast, the large, simple cube with thicker layer heights would print faster. Additionally, support structures may be needed for the figurine, adding to its printing time.
2. Strategies to minimize printing time while maintaining quality could include choosing appropriate layer heights, optimizing print settings for speed, reducing the complexity of the design if possible, and using materials that allow for faster printing.
3. A thicker layer height might be preferable for a prototype or a functional part where extremely fine details are not necessary. This can reduce printing time while still providing a functional object.
4. To minimize delays and waiting time when using a shared 3D printer with a long queue, you could schedule your print during off-peak hours, optimize your design for faster printing, and monitor the queue to start your print as soon as possible.

