

Lesson Plan

Title of the Lesson	3D Modeling of Historic or Famous Buildings
Duration	2 h
Teaching methods and strategies	<ul style="list-style-type: none"> • Live software demonstrations • Hands-on modelling practice • Architectural style exploration with visuals • Group discussions and creative collaboration
Learning Outcomes	<ul style="list-style-type: none"> • Understand basic tools in 3D modeling software (e.g., Tinkercad, SketchUp) • Digitally recreate simple architectural elements or structures • Develop appreciation for historic and iconic architecture • Explore the cultural context of buildings from around the world • Strengthen spatial reasoning, design thinking, and digital literacy
Steps to be Followed	<p>1. Introduction (15 min)</p> <ul style="list-style-type: none"> • Discuss global architectural styles (Gothic, Modernist, Classical, Islamic, etc.) • Show famous buildings (e.g., Eiffel Tower, Taj Mahal, Sydney Opera House) • Demonstrate key 3D modeling software tools (shapes, resize, rotate, align) <p>Adaptation for Inclusivity:</p> <ul style="list-style-type: none"> • Use large, high-contrast visuals • Offer tactile models or printed diagrams

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	<ul style="list-style-type: none"> • Vocabulary sheets with images for multilingual or neurodiverse learners • Assistive technology (screen readers, captions, zoom tools) • Recorded software demo for review <p>2. Main Activity (90 min)</p> <p>Step 1 – Tool Practice (20–30 min)</p> <ul style="list-style-type: none"> • Ask students to create basic shapes: cube, cylinder, cone • Ask students to explore aligning, resizing, rotating, and grouping <p>Step 2 – Building Design (30–40 min)</p> <ul style="list-style-type: none"> • Ask students to choose a structure to model based on reference images • Ask students to build base structure, then to add detail and refinements <p>Step 3 – Creative Customization (15–20 min)</p> <ul style="list-style-type: none"> • Ask students to personalize models while maintaining defining features <p>Adaptation for Inclusivity:</p> <p>Tool Practice</p> <ul style="list-style-type: none"> • Handouts with screenshots and keyboard shortcuts • Peer pairing for support • Stylus, touchscreen, or adaptive input options • Preset shape templates for easier modelling
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	<p>Design Selection</p> <ul style="list-style-type: none"> • Curated building list with varied difficulty • Option to design a portion (e.g., dome, column) • Use offline sketching or printed design prompts <p>Detailing Work</p> <ul style="list-style-type: none"> • Time checkpoints and visual timers • Task chunking for better focus • Optional co-design with a peer or aide • Celebrate progress, not just finished products <p>3. Wrap-Up / Reflection (15 min)</p> <ul style="list-style-type: none"> • Allow students to present and explain models to the class • Invite students to share why the building was chosen and what was learned • Encourage students to reflect on process and problem-solving <p>Adaptation for Inclusivity:</p> <ul style="list-style-type: none"> • Presentation alternatives (video, writing, audio clips) • Sentence starters and visual prompts • Flexible timing for model completion • Create a digital showcase for everyone's work • Private check-ins for shy or sensory-sensitive students
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<p>Required material and resources</p>	<ul style="list-style-type: none"> • Computers or tablets with Tinkercad, SketchUp, or similar • Internet access (if browser-based tools are used) • Headphones (optional for focus) • Reference images or books featuring architecture • Adaptive devices (stylus, large keyboards, zoom tools) • Visual guides and printed handouts <p>In details:</p> <p>3D Modelling Tools:</p> <ul style="list-style-type: none"> • Tinkercad – Free, browser-based modeling tool • SketchUp for Web – Free 3D modeling tool • BlocksCAD – Intro to 3D modeling with coding <p>Architecture Inspiration</p> <ul style="list-style-type: none"> • Google Arts & Culture: Architecture • Great Buildings Collection – Famous structures • ArchDaily – Explore modern and classic architecture <p>Support for Teachers & Learners</p> <ul style="list-style-type: none"> • Tinkercad Lesson Plans • Inclusive Teaching Tools – CAST UDL Guidelines • Using Tinkercad with Students with Disabilities – MakerEd
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	<ul style="list-style-type: none"> • Accessible Architecture Curriculum – ACE Mentor Program
Assessment or evaluation techniques	<p>Hands-On Engagement: Evaluate students based on their active participation in each phase of the modelling process, including learning the software tools, building the structure, and customizing their design.</p> <p>Cultural Insight: Assess students' ability to make meaningful connections between their model and its architectural or cultural context, including an understanding of the building's style, history, or cultural significance.</p> <p>Collaboration and Teamwork: Evaluate how students work together in pairs or small groups, ensuring all members contribute to the design, decision-making, and digital construction tasks.</p> <p>Final Product: Assess the completeness and creativity of the 3D model, considering how closely it reflects the reference structure and how effectively students used the digital tools to express key architectural features.</p>
Ethical Considerations	<p>Accessibility & Equity</p> <ul style="list-style-type: none"> • Ensure tech tools are compatible with assistive tech • Provide alternative task paths and pacing options • Offer diverse content in various formats (audio, print, simplified) <p>Cultural Awareness</p>

	<ul style="list-style-type: none"> • Represent buildings from many cultures and time periods • Let students explore architecture tied to personal identity or interest <p>Tech & Environmental Responsibility</p> <ul style="list-style-type: none"> • Promote file reuse and digital conservation • Limit unnecessary printing and emphasize screen-time balance • Encourage thoughtful, respectful peer feedback
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