



# LESSON PLAN

3D Modeling of Historic or  
Famous Buildings

2025

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## MAKE U IN Lesson Plan

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## Lesson Plan

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

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- Vocabulary sheets with images for multilingual or neurodiverse learners
- Assistive technology (screen readers, captions, zoom tools)
- Recorded software demo for review

## 2. Main Activity (90 min)

### Step 1 – Tool Practice (20–30 min)

- Ask students to create basic shapes: cube, cylinder, cone
- Ask students to explore aligning, resizing, rotating, and grouping

### Step 2 – Building Design (30–40 min)

- Ask students to choose a structure to model based on reference images
- Ask students to build base structure, then to add detail and refinements

### Step 3 – Creative Customization (15–20 min)

- Ask students to personalize models while maintaining defining features

### Adaptation for Inclusivity:

#### Tool Practice

- Handouts with screenshots and keyboard shortcuts
- Peer pairing for support
- Stylus, touchscreen, or adaptive input options
- Preset shape templates for easier modelling

	<p>Design Selection</p> <ul style="list-style-type: none"><li>• Curated building list with varied difficulty</li><li>• Option to design a portion (e.g., dome, column)</li><li>• Use offline sketching or printed design prompts</li></ul> <p>Detailing Work</p> <ul style="list-style-type: none"><li>• Time checkpoints and visual timers</li><li>• Task chunking for better focus</li><li>• Optional co-design with a peer or aide</li><li>• Celebrate progress, not just finished products</li></ul> <p><b>3. Wrap-Up / Reflection (15 min)</b></p> <ul style="list-style-type: none"><li>• Allow students to present and explain models to the class</li><li>• Invite students to share why the building was chosen and what was learned</li><li>• Encourage students to reflect on process and problem-solving</li></ul> <p><b>Adaptation for Inclusivity:</b></p> <ul style="list-style-type: none"><li>• Presentation alternatives (video, writing, audio clips)</li><li>• Sentence starters and visual prompts</li><li>• Flexible timing for model completion</li><li>• Create a digital showcase for everyone's work</li><li>• Private check-ins for shy or sensory-sensitive students</li></ul>
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## Required material and resources

- 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

In details:

### 3D Modelling Tools:

- [Tinkercad – Free, browser-based modeling tool](#)
- SketchUp for Web – Free 3D modeling tool
- [BlocksCAD – Intro to 3D modeling with coding](#)

### Architecture Inspiration

- Google Arts & Culture: Architecture
- [Great Buildings Collection – Famous structures](#)
- [ArchDaily – Explore modern and classic architecture](#)

### Support for Teachers & Learners

- 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"> <li>• <a href="#">Accessible Architecture Curriculum – ACE Mentor Program</a></li> </ul>
<p><b>Assessment or evaluation techniques</b></p>	<p><b>Hands-On Engagement:</b> 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><b>Cultural Insight:</b> 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><b>Collaboration and Teamwork:</b> 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><b>Final Product:</b> 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>
<p><b>Ethical Considerations</b></p>	<p><b>Accessibility &amp; Equity</b></p> <ul style="list-style-type: none"> <li>• Ensure tech tools are compatible with assistive tech</li> <li>• Provide alternative task paths and pacing options</li> <li>• Offer diverse content in various formats (audio, print, simplified)</li> </ul> <p><b>Cultural Awareness</b></p>

- Represent buildings from many cultures and time periods
- Let students explore architecture tied to personal identity or interest

**Tech & Environmental Responsibility**

- Promote file reuse and digital conservation
- Limit unnecessary printing and emphasize screen-time balance
- Encourage thoughtful, respectful peer feedback