

AI-assisted3D Design

From idea to digital object

17 November 2026 · 10am to 1pm · Singapore

A hands-on introduction for high school students. Teams use AI to create a digital object, improve it and explain their design choices.

The design process

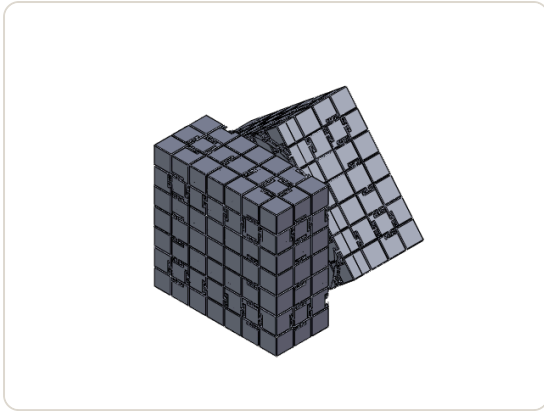
Generate Start with a prompt or reference.	Inspect Rotate it. Check its shape and surface.
Improve Choose an issue to improve.	Export Save it and explain the changes.

Session	Instructor	Group	Format
Three hours · Short break	Chee Wei Jie	20 high school students	Four teams · Four laptops

No prior 3D modelling experience is needed. Meshy is the proposed platform, subject to account and licence confirmation.

Chee Wei Jie

From an award-winning mechanical design to engineering simulation and interactive showrooms, Wei Jie combines experience in 3D design with his current work in AI and software.



Original CAD assembly from Wei Jie's Rubik's Cube design project.

A foundation in mechanical design

His SolidWorks Rubik's Cube design project received a Gold Award at the Singapore Science and Engineering Fair (SSEF).

Engineering simulation

At DSO National Laboratories, he used CST to model a balun for a dipole antenna.

For Q Analytica Limited, a London startup associated with Imperial College London and John Hassard, he used ANSYS Fluent to model a solar updraft tower and investigate energy conversion efficiency.

Interactive 3D environments

His current work combines Blender and Three.js to create interactive showrooms, including work for Eclat's Henderson Road space.

Learning outcomes

By the end of the session, participants should be able to:

- ✓ Translate an idea into a clear prompt or suitable reference image.
- ✓ Generate and inspect a 3D model using the selected platform.
- ✓ Distinguish the object's geometry from its surface appearance.
- ✓ Identify a problem and improve the result through a deliberate revision.
- ✓ Export the chosen model and explain its purpose and limitations.

Session flow

Watch a demonstration, practise together, then develop a team concept.

Pacing adjusts to students' experience and progress, with a short break during the session.

1. Introduction and examples

Explore applications of AI-assisted 3D design through engineering projects and interactive digital environments.

2. Core concepts and demonstration

Follow an idea through prompting, model generation, inspection, revision and export. Discuss geometry, textures and common limitations.

3. Guided practical exercise

Teams generate a simple practice object, examine it from different angles and identify possible improvements.

4. Team design challenge

Create a small exhibition object that communicates an idea. Review the initial result and make a deliberate revision.

5. Sharing and next steps

Present the object, explain the design decisions and discuss a remaining limitation. Receive the subsequent practical task brief.

Substantial time is allocated to hands-on work. Teams share responsibility for ideas, software operation, inspection, documentation and presentation.

Team task: an object with a story

Create a small exhibition object that communicates a cultural, educational or personal idea. A Singapore-inspired display object or souvenir is one possible direction.

After the workshop, teams develop or refine their object using the same software and skills. They may continue their workshop concept or choose a new idea within the same scope.

What each team submits

The object

One exported digital 3D model and at least two images showing different views.

The design record

The prompt or reference and the initial result, with a short explanation of the purpose, one deliberate improvement and one remaining limitation.

After the workshop: Allow approximately 1 to 1.5 additional hours for the task, depending on scope and generation times.

Assessment can consider the purpose of the object, how the team inspected and revised it, and how clearly they explain the result.

Software and equipment

Meshy

The proposed platform for generation, inspection and export, subject to confirmation of accounts and licences.

Four laptops

One per team, with internet access and a shared display for the instructor's demonstrations.

The proposed deliverable is a digital model. Physical printing requires separate preparation and confirmation of the available equipment.