

CAPITAL SCHOOL · A-LEVEL PRODUCT DESIGN

A-Level Product Design Transition



Summer Transition Project 2026 — Introduction to 3D Design Using TinkerCAD

Student Name

Tutor Group

Submission Date

This project introduces you to computer-aided design and additive manufacturing. Over four weeks, you will build digital modelling skills, apply iterative design thinking, and produce an original 3D printed product that solves a real problem for a student.

4 - WEEK PROGRAMME

| Week | Focus | Course Sections | Required Evidence |
|------|------------------|---|---|
| 1 | CAD Fundamentals | Introduction · Workspace · Basic Shapes · Aligning · Grouping · Holes · Mirroring | Screenshots of 3 practice models + short written reflection |
| 2 | Modelling Skills | First Model · Further Modelling Techniques · Extrusions · Revolves | Reverse-engineered household product model |
| 3 | Design Challenge | Shape Generators · Shapes · Models from Images | Research notes, annotated sketches, and developed CAD ideas |
| 4 | Refinement | Final Course Sections | Final CAD model and written evaluation (~300 words) |

DESIGN BRIEF

Design and model an original 3D printed product that improves everyday life for a student. Consider ergonomics, aesthetics, material properties, and how additive manufacturing shapes your design decisions.

| | | |
|--|---|--|
| Cable organiser <i>Manage desk and bag cables neatly</i> | Desk tidy <i>Store stationery and small items</i> | Phone stand <i>Adjustable viewing angle holder</i> |
| Headphone holder <i>Clip or hang from desk edge</i> | Revision card organiser <i>Indexed storage for flashcards</i> | Bag hook <i>Attach bag to desk or chair</i> |

PORTFOLIO REQUIREMENTS

| Portfolio Section | What to Include |
|--------------------|---|
| Research | 3D printing and additive manufacturing — processes, materials, applications |
| Skills Development | Annotated CAD screenshots from course activities (Weeks 1–2) |

| Portfolio Section | What to Include |
|---------------------------|--|
| Design Ideas | Annotated freehand sketches and initial concepts (minimum 3 ideas) |
| Design Development | Improvements and iterations showing how your design evolved |
| Final Design | Rendered CAD model with dimensions, views, and material notes |
| Evaluation | Approximately 300 words — strengths, limitations, and suggested improvements |

SUCCESS CRITERIA

| | By September you should be able to: |
|--------------------------|--|
| <input type="checkbox"/> | Navigate TinkerCAD confidently |
| <input type="checkbox"/> | Create accurate 3D CAD models |
| <input type="checkbox"/> | Apply iterative design thinking |
| <input type="checkbox"/> | Present design work professionally |
| <input type="checkbox"/> | Explain how additive manufacturing influences product design |
| <input type="checkbox"/> | Demonstrate readiness for A-Level Product Design |

EXTENSION CHALLENGE (OPTIONAL)

| |
|--|
| + Export your design as an STL file ready for printing |
| + Produce a physical 3D printed prototype |
| + Calculate material usage and estimate print cost |
| + Investigate sustainable materials for additive manufacturing |
| + Compare TinkerCAD with professional CAD software (e.g. Fusion 360, SolidWorks) |

COURSE LINK

TinkerCAD for Complete Beginners — Udemy: <https://www.udemy.com/course/tinkercad-for-complete-beginners/>

TEACHER COMMENT & STUDENT REFLECTION

| | |
|---------------------------|--|
| Teacher Comment | |
| Student Reflection | |

SUBMISSION DEADLINE

First lesson in September 2026

Estimated time

8–12 hours