



Lesson 4 – Designing for Production

Lesson Focus

This lesson will introduce students to computer-assisted designing (CAD). Students will work individually to innovate and design a new quadcopter drone hardware part, utilizing CAD and 3D printing.

Lesson Synopsis

Students will utilize a form of AutoDesk programming, TinkerCAD to learn the basics of 3D designing. Students will innovate an existing part on their drone or design a new part for their quadcopter drone, utilizing the program.

Objectives

During this lesson, students will:

- Apply the engineering design process, using the Design Brief, to design a 3D part for their quadcopter drone.
 - Design, print, test, and redesign a quadcopter drone 3D prototype.
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Anticipated Learner Outcomes

As a result of this activity, students will have:

- Applied the engineering design process, using the Design Brief, to design and build a 3D part for their quadcopter drone.
 - Designed, tested, and redesigned a quadcopter drone 3D prototype.
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Lesson Activities

Students will write a design brief for a fictional client and design one part for the clients' quadcopter drone.

Students will use TinkerCAD to design the part and a 3D printer to print the part for testing.

Resources / Materials

- Teacher Resource Documents (attached)
 - Student Worksheets (attached)
 - Student Resource Sheets (attached)
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Alignment to Curriculum Frameworks

See attached curriculum alignment sheet.