

Foundations of Engineering - Modified from Unit 1- Engineering Design Process

Targeted Goals from Stage 1: Desired Results

- Utilize the design process; including defining a problem, brainstorming, researching and generating ideas, identifying criteria and specifying constraints, exploring possibilities, selecting an approach, developing a design proposal, making a model or prototype, testing and evaluating the design using specifications, refining the design, creating or making it, and communicating processes and results.
- Students will develop an understanding of engineering design.
- Explore and hone techniques, skills, methods, and processes to create and innovate
- Demonstrate professionalism through exhibiting attentiveness, growing from feedback, and adhering to industry standards (safety).

Content Knowledge: Basic CAD overview - sketching, smart dimensioning, scale printing

Skills: Use CAD software to design a working prototype in solving a challenge/problem.

Expectation: Students will get an introduction to computer aided drafting in helping design prototypes in step 5 of the engineering design process.

Description of Task (s):	Resources and Materials:	Daily Checks (Return to Google Classroom or snapshots from a cell phone)
Monday: Log into Tinkercad for the first time with your Google account. Students then finish the Tinkercad activities listed in Classroom. BE SURE YOU USE A COMPUTER MOUSE IF YOU HAVE ONE.	Tinkercad Mr. Kiefer Tinkercad login tutorial	-Partial class meeting (demo)- recorded for students who cannot attend
Tuesday: Work on completing the following Tinkercad activities: <ul style="list-style-type: none"> • Place It! • View It! • Move It! • Rotate It! • Size It Up! • Group It! • Align It! 		-Small meeting conducted at beginning of class to review and to provide feedback for students that need assistance -Teacher will moderate student progress via Tinkercad dashboard.
Wednesday: Work on learning more essential Tinkercad functions by completing slightly more advanced self-paced lessons.		-Small meeting conducted at beginning of class to review and to provide feedback for students that need assistance

Description of Task (s):	Resources and Materials:	Daily Checks (Return to Google Classroom or snapshots from a cell phone)
Work on the following Tinkercad activities: <ul style="list-style-type: none"> ● Creating Holes ● Scale, Copy & Paste ● Key Ring, Letters! ● Die on the Workplane 		-Teacher will moderate student progress via Tinkercad dashboard.
Thursday: Work on completing the following Tinkercad activities: <ul style="list-style-type: none"> ● Creating Holes ● Scale, Copy & Paste ● Key Ring, Letters! ● Die on the Workplane 		-Small meeting conducted at beginning of class to review and to provide feedback for students that need assistance -Teacher will moderate student progress via Tinkercad dashboard.
Friday: Work on completing the following Tinkercad lesson: <ul style="list-style-type: none"> ● Die from Scratch 		-Small meeting conducted at beginning of class to review and to provide feedback for students that need assistance -Teacher will moderate student progress via Tinkercad dashboard.

Week criteria for success (attach student checklists or rubrics):

The following activities will be worked on until completed correctly:

- Place It!
- View It!
- Move It!
- Rotate It!
- Size It Up!
- Group It!
- Align It!
- Creating Holes
- Scale, Copy & Paste
- Key Ring, Letters!
- Die on the Workplane
- Die from Scratch

Supportive resources and tutorials for the week (plans for re-teaching):