3D Printer Project

I Can:

1. Complete the Engineering Design Process for a 3D printer project
2. Define basic terminology related to 3D printing
3. Create, save, and print my own 3d design

Competencies:

1. Define the additive process and understand how filament and raft supports are used
2. Download and save a 3d file and understand the file type (.STL) used for 3d printing
3. Design on all sides by understanding X, Y, and Z alignment
4. Build a 3D design by dividing, combining geometric shapes, and using measurement tools (units, scale, ratio, rotating, mirror, etc.)
5. Demonstrate the 3D printing process by extruding filament, getting the machine ready, choosing the correct preferences, printing, and withdrawing filament

Portfolio-Based Assessments:

1. Complete Assessment Literacy and Machine check list. (Done through written and/or demonstration to teacher)
2. Complete documentation using the Design Process Log and provide picture artifacts. (on-going throughout project)
3. Tell the story about the project and describe how project was completed using the grading rubric/outline (small group sharing)
4. Provide feedback on others’ projects using the listening and feedback rubric/outline (small group sharing)

Standards using Wisconsin Common Career Technical Standards (WCCTS):

1. Standard: 4C1: Students will think and work creatively to develop innovative solutions to problems and opportunities.
2. Standard: 4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.
3. Standard: 4C3: Students will communicate and collaborate with others to accomplish tasks and develop solutions to problems and opportunities.
4. Standard: CD4: Students will identify and apply employability skills.
5. Standard: IMT3: Students will use available information and communication technology to improve productivity, solve problems and create opportunities.
6. Standard: LE1: Students will apply leadership skills in real-world, family, community and business and industry applications.