

Drafting & Design

3D Coin Design

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Project brief: Students were given the challenge of designing a series of coins in 3D using either Fusion 360 or AutoCAD. They first had to sketch their concepts, then produce them on the computer. Students had to pick 1 coin design to print on our 3D printer.

Coin Constraints:

- No larger 4cm wide and 5mm tall
- Must not be double sided
- Must have adequate detail and a well-thought out design (in terms of the printer capabilities)
- All design components must be unified as one object so it will print properly•

Variables:

- Imagery or text
- Design composition
- Colour

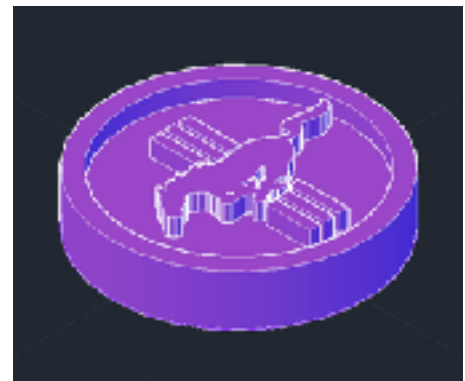
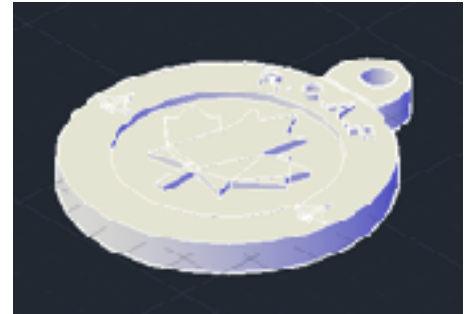
Design Process Evidence:

Empathize - Students had to find a way to identify with their design, finding something meaningful or representative of themselves. If the coin is intended for someone else, they

Define - Students had to find a way to translate their sketched design (2D) into 3D, within the constraints of a small scale coin. They needed to visualize how different shapes of their design would need to be different heights, as well as how much detail to include that would be appropriate for the 3D printer's limitations.

Ideate - During the 3D design process, students encounter many issues or challenges with how to create their desired shapes or designs in 3D. There are several opportunities for students to be innovative, finding unique solutions with how to construct their coins.

Prototype - Students design 3 coins total, as through the design process they may find one of their original designs does not translate well into 3D. Exporting the design into the 3D printing format also shows students any potential issues before printing. Once students printed their



chosen coin design, they could look at areas that could be improved based on the ABS filament used as well as their original design.

Test - After the students' initial coin has been printed, many of them choose to make modifications to ensure a better product outcome for their second print. This cycle can continue until they are satisfied with the final outcome.