Unit 4: Prototyping

Content Area: **Business**
Course(s): **Foundations of Creative Design**
Time Period: **Semester 1**
Length: **4-5 Weeks**
Status: **Published**

Standards

1.5.12prof.Cr2b	Explain how traditional and non-traditional materials may impact human health and the environment, and demonstrate safe handling of materials, tools and equipment.
	Reflect, Refine, Continue
8.2.12.ED.1	Use research to design and create a product or system that addresses a problem and make modifications based on input from potential consumers.
8.2.12.ED.3	Evaluate several models of the same type of product and make recommendations for a new design based on a cost benefit analysis.
8.2.12.ED.4	Design a product or system that addresses a global problem and document decisions made based on research, constraints, trade-offs, and aesthetic and ethical considerations and share this information with an appropriate audience.
8.2.12.ED.5	Evaluate the effectiveness of a product or system based on factors that are related to its requirements, specifications, and constraints (e.g., safety, reliability, economic considerations, quality control, environmental concerns, manufacturability, maintenance and repair, ergonomics).
8.2.12.ITH.1	Analyze a product to determine the impact that economic, political, social, and/or cultural factors have had on its design, including its design constraints.
8.2.12.ITH.2	Propose an innovation to meet future demands supported by an analysis of the potential costs, benefits, trade-offs, and risks related to the use of the innovation.

Enduring Understandings

- Prototypes allow designers to test and refine ideas before final development.
- Low-fidelity prototypes are valuable tools for exploring and communicating ideas quickly.
- Iteration based on user feedback leads to more effective, user-centered designs.

Essential Questions

- Why is prototyping a critical step in the design process?
- What are the benefits of low-fidelity prototyping?
- How can we use feedback to improve our designs?

Knowledge and Skills

- Differentiate between types of prototypes
- Construct low-fidelity paper prototypes to simulate app or website functionality.
- Build physical models using accessible materials such as cardboard, foam, and tape.
- Conduct peer-based user testing with early-stage prototypes and document user reactions.
- Source and use materials sustainably and ethically
- Use feedback loops to improve design clarity, usability, and user experience.
- Communicate design intent and prototype function through informal presentations and critiques.

Transfer Goals

- Students will independently apply prototyping as a flexible, problem-solving strategy for testing and refining ideas.
- Students will recognize iteration as a necessary and valuable part of any design or creative process in academic, personal, and professional contexts.