Unit 5: Digital Design & Intro to Software Tools

Content Area: **Business**
Course(s): **Foundations of Creative Design**
Time Period: **Semester 2**
Length: **4-5 Weeks**
Status: **Published**

Standards

8.1.12.CS.1	Describe ways in which integrated systems hide underlying implementation details to simplify user experiences.
	Describing a problem is the first step toward finding a solution when computing systems do not work as expected.
8.1.12.DA.2	Describe the trade-offs in how and where data is organized and stored.
8.1.12.AP.4	Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue.
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.ED.6	Analyze the effects of changing resources when designing a specific product or system (e.g., materials, energy, tools, capital, labor).

Enduring Understandings

- Digital tools allow for precise and scalable prototyping of both physical and digital products.
- Good design balances user needs, aesthetics, and functionality.
- Understanding digital design software empowers students to bring their ideas to life and communicate them effectively.

Essential Questions

- How do digital tools enhance the design process?
- What makes an interface or physical product user-friendly and effective?
- How can we communicate our ideas visually and interactively?

Knowledge and Skills

- Apply basic UI/UX design principles to create intuitive user interfaces.

- Use no-code tools such as Figma or Canva to build digital wireframes and clickable prototypes.
- Explain the user flow of a digital interface and justify design choices.
- Use beginner-level 3D modeling software (e.g., TinkerCAD, Blender, Bambu Studio) to create physical product designs.
- Translate paper prototypes into higher-fidelity digital versions.
- Prepare files for 3D printing or digital presentation.

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.