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

CS.9-12.8.1.12.AP.4	Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue.
CS.9-12.8.1.12.CS.1	Describe ways in which integrated systems hide underlying implementation details to simplify user experiences.
CS.9-12.8.1.12.DA.2	Describe the trade-offs in how and where data is organized and stored.
CS.9-12.8.2.12.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).
CS.9-12.8.2.12.ED.6	Analyze the effects of changing resources when designing a specific product or system (e.g., materials, energy, tools, capital, labor).
	Describing a problem is the first step toward finding a solution when computing systems do not work as expected.

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.