

Unit 1: Game On! Understanding the Video Game Design Industry

Content Area: **Technology**
Course(s):
Time Period: **September**
Length: **4 weeks**
Status: **Published**

Enduring Understandings

Effective use of technology enables us to live, learn and work.

Engineering design is a creative and interactive process for identifying and solving problems that meet established criteria and constraints.

Technology is used to create effective and interactive digital media.

Video game design involves creating an experience that is both functional and engaging for the user.

Essential Questions

How do we as humans rely on technology in today's society?

How has technology evolved throughout human history?

How has technology helped to extend human capabilities throughout history?

What are the major steps of the design process?

How does the design process help to produce more successful technologies?

What are some methods used to share design ideas?

What problems are typical to engineers?

How are science, technology, engineering, and math interrelated?

How do the constraints of a design challenge ultimately impact the final product?

Which societal influences impact engineering design?

How do engineering designs dictate societal behaviors and changes?

Why is it so important for average citizens to become technologically literate?

Content

Skills

Formulate a responsible, legal, safe and ethical use of information resources and technology. (mature content, online content laws and user privacy)

Develop a sound understanding of technology concepts, systems and operations and use computers and other technologies for productivity, problem-solving, and learning across all content areas.

Develop a sound understanding of history of video games and the impact of gaming on culture.

Understand the game platforms, operating systems and their relationships.

Gain insight into genres, game mechanics, audiences and target consumers.

Articulate appropriate academic vocabulary for computers and associated materials:

computer hardware and software

video game terms

industry, Internet, mobile / wireless, online technology

social media

Resources

Every student should have the opportunity to learn computer science. Exposing the learner to multiple platforms for learning code facilitates a better understanding of the extensive resources available while creating a broad foundation of the basic concepts and principles behind computer science. The Video Game Design class will use the following platforms and resources across the Units of Study:

1. YoYo Games - GameMaker for MAC; Based on C programming language, this resource gives you all the power of other programming languages but with added Drag and Drop functionality.
2. "Alice" is an innovative, open source 3D programming environment that makes it easy to create an animation for telling a story or playing an interactive games.
3. "Scratch" helps young people learn to think creatively, reason systematically, and work collaboratively — essential skills for life in the 21st century.
4. An Hour of Code (web based) is an introduction to JavaScript that provides an opportunity to students to learn the basics of JavaScript programming while creating fun drawings with code.
5. A derivative of Java known as Processing. Processing is a flexible software sketchbook and a language for learning how to code within the context of the visual arts.
6. Other programming languages that may be explored are Ruby or Python.

Throughout this course the learner's experience will be enhanced using the following:

- TED-Ed Originals; short, award-winning animated videos about ideas that spark the curiosity of learners everywhere.
- Ted Talks videos (Ted.com). TED Talks are influential videos from expert speakers on education, business, and computer science. For instance, this video will enhance students understanding of pixels and advancements in technology that will be realized in their lifetime. Reach into a computer and grab pixels: https://www.ted.com/talks/jinha_lee_a_tool_that_lets_you_touch_pixels
- Many YouTube videos that relate to computer science. Ie. This sample video will be used to supplement the animation unit: PIXAR Explained - <https://youtu.be/Z1R1z9ipFnM> or <https://www.youtube.com/watch?v=Z1R1z9ipFnM&feature=em->

[uploademail](#) .

Makey Makey inspires science, technology, engineering, art and math (STEAM). This product is an invention kit for the 21st century. It turns everyday objects into touchpads and combine them with the internet.

Dash Robot teaches robotics. Dash uses Wonder, Blockly, and other apps to create new behaviors for Dash. It works with iOS and Android devices.

Textbook: Level Up! The Guide to Great Video Game Design Paperback – April 28, 2014 by Scott Rogers

Three "older" computers to be used for hardware labs and demonstrations.

Standards

TECH.8.1.5.C.1	Engage in online discussions with learners of other cultures to investigate a worldwide issue from multiple perspectives and sources, evaluate findings and present possible solutions, using digital tools and online resources for all steps.
TECH.8.1.8.D	Digital Citizenship: Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.
TECH.8.1.8.D.CS1	Advocate and practice safe, legal, and responsible use of information and technology.
TECH.8.2.8.B.1	Evaluate the history and impact of sustainability on the development of a designed product or system over time and present results to peers.
TECH.8.2.8.B.2	Identify the desired and undesired consequences from the use of a product or system.
TECH.8.2.8.C.2	Explain the need for optimization in a design process.
TECH.8.2.8.C.3	Evaluate the function, value, and aesthetics of a technological product or system, from the perspective of the user and the producer.
TECH.8.2.8.C.4	Identify the steps in the design process that would be used to solve a designated problem.