Unit 3: Story and Game Creation

Content Area: **Technology**
Course(s):
Time Period: **Marking Period 1**
Length: **7 Blocks**
Status: **Published**

Enduring Understandings

Gameplay is fully customizable in Unity through the use of programming and basic Unity interface adjustments.

Interactive storytelling and narratives are essential in creating an exciting, playable game.

Planning tools such as storyboards lead to more organized and interesting game designs.

Essential Questions

How do game designers use tools in the Unity interface to add interest to gameplay?

How can game designers organize their ideas for game narratives?

What are the fundamentals of game narrative creation?

Student Learning Objectives

Students will be able to…

- Adjust the scale of an object proportionally in order to get it to the size you want
- Create an if-then statement in order to implement basic logic in your project, including the use of greater than (>) and less than (<) operators
- Use comments and automatic formatting in order to make their code more clean and readable to other programmers
- Transform a game object into a prefab that can be used as a template and instantiate Prefabs to spawn them into the scene
- Override Prefabs to update and save their characteristics
- Apply components to multiple objects at once to work as efficiently as possible
- Create an empty object with a script attached
- Use arrays to create an accessible list of objects or values
- Use integer variables to determine an array index
- Randomly generate values with Random.Range in order to randomize objects in arrays and spawn positions
- Change the camera's perspective to better suit your game
- Write custom functions to make your code more readable
- Edit Box Colliders to fit your objects properly

- Deconstruct and review the general principles of storytelling
- Explain the benefits of storytelling and the power of narrative
- Explain the use of storyboarding in game design
- Identify the benefits of creating a storyboard
- Create and control terrains within the Unity Editor
- Explain how storyboard techniques can be used to further a storyline

Vocabulary and Learning Experiences

Vocabulary:

If-then statement, variant prefab, instantiation, else-if statement, arrays, keycodes, perspective projection, isometric projection, abstraction, narrative

Planned Learning Experiences:

Feed the Animals:

Learn to implement basic gameplay with this top-down game where you throw food at animals, who are charging towards you.

Work Breakdown Structure (WBS) Exercise:

In the last unit, students were introduced to a basic project charter. In this unit, they will learn how to manage resources (i.e. time and talent) to accurately predict how long a project will take. They will also create a roadmap, which details the steps they need to take in order to meet the milestones to keep the project on track. The Work Breakdown Structure (WBS) document will be used to itemize specific tasks to be completed in order to finish a project. This can include very high level tasks as well as very detailed and highly specific tasks. For this part of the project, just enough project management is recommended and learners will only create a WBS for the higher level tasks. They will complete the WBS by listing the higher level tasks to be completed on the Final Project. This can be changed and edited as new knowledge and under- standing of the process occurs.

Group Story Generation Exercise:

Within small groups, each student is assigned a number (one, two, or three). Each group is given a sheet of paper and asked to write the words “Once Upon A Time...” at the top. Next, write the word “Who?” on the board for the class to see. Instruct the first person from each group (number one’s) to write one or two sentences, describing who was going to be in the story. Tell them that they only have two minutes to write their notes, encouraging them to write adjectives and have fun with it. Next, write the word “Where?” on the

board for the class to see. The second person from each group then has two minutes to write where the story takes place. Continue the process until all of the following questions are addressed on the sheet of paper:

• When?

• What is the problem?

• Who said What? (Let the learners know that someone in the story has to say something, so that learners have an opportunity to reinforce quotation marks)

• Who said What back to that person?

• Something bad happens

• Something good happens

• Something funny happens

• How it ends

Resources

Unity Learn

Unity Curricular Framework

Google Classroom

Standards

CLKS:

9.4.12.CI.1: Demonstrate the ability to reflect, analyze, and use creative skills and ideas

9.4.12.CI.2: Identify career pathways that highlight personal talents, skills, and abilities
9.4.12.CI.3: Investigate new challenges and opportunities for personal growth, advancement, and transition

9.4.12.CT.1: Identify problem-solving strategies used in the development of an innovative product or practice

9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving

9.4.12.IML.9: Analyze the decisions creators make to reveal explicit and implicit messages within information

and media

9.4.12.TL.3: Analyze the effectiveness of the process and quality of collaborative environments. 9.4.12.TL.4: Collaborate in online learning communities or social networks or virtual worlds to

analyze and propose a resolution to a real-world problem.

CSDT:

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.6: Analyze the effects of changing resources when designing a specific product or system (e.g., materials, energy, tools, capital, labor).

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.
8.2.12.ITH.3: Analyze the impact that globalization, social media, and access to open source technologies has had on innovation and on a society's economy, politics, and culture.

8.2.12.NT.1: Explain how different groups can contribute to the overall design of a product.

8.2.12.NT.2: Redesign an existing product to improve form or function.

TECH.8.1.12.A.1	Create a personal digital portfolio which reflects personal and academic interests, achievements, and career aspirations by using a variety of digital tools and resources.
TECH.8.1.12.A.3	Collaborate in online courses, learning communities, social networks or virtual worlds to discuss a resolution to a problem or issue.
TECH.8.1.12.B	Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.
TECH.8.1.12.B.2	Apply previous content knowledge by creating and piloting a digital learning game or tutorial.
TECH.8.1.12.D.1	Demonstrate appropriate application of copyright, fair use and/or Creative Commons to an original work.

TECH.8.1.12.D.5	Analyze the capabilities and limitations of current and emerging technology resources and assess their potential to address personal, social, lifelong learning, and career needs.
TECH.8.1.12.F.1	Evaluate the strengths and limitations of emerging technologies and their impact on educational, career, personal and or social needs.
TECH.8.2.12.A.1	Propose an innovation to meet future demands supported by an analysis of the potential full costs, benefits, trade-offs and risks, related to the use of the innovation.
TECH.8.2.12.B.3	Analyze ethical and unethical practices around intellectual property rights as influenced by human wants and/or needs.
TECH.8.2.12.B.4	Investigate a technology used in a given period of history, e.g., stone age, industrial revolution or information age, and identify their impact and how they may have changed to meet human needs and wants.
TECH.8.2.12.C.1	Explain how open source technologies follow the design process.
TECH.8.2.12.C.2	Analyze a product and how it has changed or might change over time to meet human needs and wants.
TECH.8.2.12.C.4	Explain and identify interdependent systems and their functions.
TECH.8.2.12.D.6	Synthesize data, analyze trends and draw conclusions regarding the effect of a technology on the individual, society, or the environment and publish conclusions.
TECH.8.2.12.E.1	Demonstrate an understanding of the problem-solving capacity of computers in our world.
TECH.8.2.12.E.3	Use a programming language to solve problems or accomplish a task (e.g., robotic functions, website designs, applications, and games).
TECH.8.2.12.E.4	Use appropriate terms in conversation (e.g., troubleshooting, peripherals, diagnostic software, GUI, abstraction, variables, data types and conditional statements).