

Elizabethtown Area School District  
Scope & Sequence - Quick Reference



**Department:** Technology and Engineering Education

**Course:** Game Design and Development

**Grade Level(s):** 10-12

<b><i>Unit Title</i></b>	<b><i>General Topic(s)</i></b>	<b><i>Pacing</i></b>
<b>1. Introduction to Game Design</b>	<ul style="list-style-type: none"><li>• Games (Why we play?)</li><li>• Game Analysis (end-user perspective)</li><li>• Game Industry (Careers and Pathways)</li><li>• Introduction to Unity</li></ul>	1 Weeks
<b>2. Critical Thinking in Game Design</b>	<ul style="list-style-type: none"><li>• Creative vs. Critical Thinking</li><li>• Developing a SWOT Analysis</li><li>• Brainstorming and Mind Mapping</li><li>• Critiquing Games using MDA Framework</li><li>• How perspective influences gameplay and genre (2D, 3D, Orthographic)</li></ul>	2 Weeks
<b>3. Game Design Theory</b>	<ul style="list-style-type: none"><li>• Developing a Concept</li><li>• Game Rules, Mechanics and Balance</li><li>• Game Flow</li><li>• Game Development Tools (SDKs, Level Editors, Engines)</li></ul>	2 Weeks

	<ul style="list-style-type: none"> <li>• Creating 3D and 2D Environments</li> </ul>	
<b>4. Story and Game Creation</b>	<ul style="list-style-type: none"> <li>• Coloring a Game (Setting)</li> <li>• Motivation</li> <li>• Character Archetypes</li> <li>• Developing Backstory and Narrative</li> </ul>	2 Weeks
<b>5. Scripting Fundamentals</b>	<ul style="list-style-type: none"> <li>• Anatomy of Scripts (Name Spaces, Classes, Variables, Functions, Conditions)</li> <li>• Scripting Conventions</li> <li>• Variables and Functions</li> <li>• If/Than Statements</li> <li>• Loops</li> <li>• Computational Thinking</li> <li>• Manipulating Objects (Translation/Rotation)</li> <li>• Instantiate/Destroy</li> </ul>	5 Weeks
<b>6. Physics and the Build Process</b>	<ul style="list-style-type: none"> <li>• Defining/Planning Interactivity</li> <li>• Working with Colliders and Rigidbodies</li> <li>• Applying Forces</li> <li>• OnCollision/OnTrigger</li> <li>• Physics Materials</li> <li>• GetKey/GetButton</li> <li>• Character Control</li> </ul>	3 Weeks
<b>7. Animation</b>	<ul style="list-style-type: none"> <li>• Animating Cameras, Objects, and Effects</li> <li>• Modes of Interpolation</li> <li>• 2D Sprite Animations</li> <li>• Character Controllers</li> <li>• Blend Trees</li> </ul>	2 Weeks
<b>8. User Interface</b>	<ul style="list-style-type: none"> <li>• Menu Systems</li> <li>• Buttons</li> <li>• Screen Space/World Space</li> <li>• Health Bars and Score</li> </ul>	2 Weeks

<b>9. Other Integrated Topics</b>	<ul style="list-style-type: none"><li>• Audio</li><li>• Lighting</li><li>• Particle Systems</li></ul>	Integrated at various times within above units.
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