Unity Essentials Pathway

Standards Alignment

International Society for Technology in Education (ISTE)
From the ISTE Standards webpage: The ISTE Standards are a framework for students, educators, administrators, coaches, and computer science educators to rethink education and create innovative learning environments.

Yes- ✓, No- x, Partial- ◐

Domain	#		
1 Empowered learner	1a	Students articulate and set personal learning goals, develop strategies leveraging technology to achieve them, and reflect on the learning process itself to improve learning outcomes.	◐
	1c	Students use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.	✓
	1d	Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use, and troubleshoot current technologies, and are able to transfer their knowledge to explore emerging technologies.	✓
3 Knowledge constructor	3b	Students evaluate the accuracy, perspective, credibility, and relevance of information, media, data, or other resources.	✓
	3c	Students curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.	◐
	3d	Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories, and pursuing answers and solutions.	✓
4 Innovative Designer	4a	Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts, or solving authentic problems.	✓
	4b	Students select and use digital tools to plan and manage a design	✓

		process that considers design constraints and calculated risks.	
	4c	Students develop, test, and refine prototypes as part of a cyclical design process.	✓
	4d	Students exhibit a tolerance for ambiguity, perseverance, and the capacity to work with open-ended problems.	✓
5 Computational thinker	5a	Students formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models, and algorithmic thinking in exploring and finding solutions.	◐
	5c	Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.	◐
6 Creative communicator	6b	Students create original works or responsibly repurpose or remix digital resources into new creations.	✓
7 Global collaborator	7b	Students use collaborative technologies to work with others, including peers, experts, or community members, to examine issues and problems from multiple viewpoints.	◐

Certified User: Artist exam

The Unity Certified User Artist exam will test the basics of 2D and 3D digital artistry within Unity software to create interactivity in games, apps, AR/VR, and other experiences. The exam objectives are aligned with current industry standards set by professionals and educators. Individuals will be expected to have at least 150 hours of Unity software use and training
to obtain this certification.

Domain		Tutorial	
Asset management	Import assets including but not limited to settings for FBX, OBJ and associated textures.	Get 3D assets Essentials of real-time 2D Get 2D assets	◐
	Import and configure assets from the Unity Asset Store.	Get 3D assets Essentials of real-time 2D Get 2D assets	✓

	Slice sprite sheets for use in a 2D scene including but not limited to using the default Sprite editor and 9-slicing.		x
	Identify mesh components including vertices, polygon faces, and edges.		x
	Create keyframes and change tangents in the Curve editor using the Animation window.		x
	Create, modify and utilize Prefabs.		x
Lighting, cameras, materials and effects	Modify materials using the Standard Shader and editing properties including but not limited to specular, transparency, normal, and albedo.	Essentials of real-time 3D	◐
	Identify basic lighting including but not limited to shadows, light settings, and light shapes such as directional, area, spot, and point.	Essentials of real-time 3D	◐
	Utilize single-camera set up including but not limited to isometric vs. standard, camera component, background, culling masks, clipping planes, field of view (FOV), etc.		x
	Given a scenario, determine the appropriate rendering pipeline that should be used.		x
Scene content design	Utilize Transform tools and the Transform component in the Inspector.	Essentials of real-time 3D	✓
	Create prototype scenes using Unity primitives and/or low poly meshes utilizing white box/grey box techniques.	Essentials of real-time 3D	◐
	Create and edit a landscape with materials utilizing the Terrain tool including but not limited to mask maps, texture painting, and diffuse properties.		x

Certified Associate: Artist exam

Showcase your mastery of core Unity skills and concepts to obtain your first professional role as a Unity 2D and 3D artist with the Unity Certified Associate Artist exam

Domain			
Asset management	Import and adjust Import Settings on assets including but not limited to assets such as rigged objects, tangents, associated textures, and target/blend shapes .	Essentials of real-time 3D Get 2D assets	◐
	Modify assets using the Inspector including but not limited to scripted components, animation, and materials.	Start creating	✓
	Import and configure assets from the Unity Asset Store and/or custom packages.	Essentials of real-time 3D Get 2D assets	✓
	Utilize the Sprite editor, Tilemaps, Unity UI, and UI Elements.		x
	Utilize Animator functions including states, parameters, transitions, and blend trees.		x
	Utilize level of detail (LOD).		x
	Given a scenario, optimize scene art assets for different build targets including standalone, mobile and web.	Publish your project	✓
Lighting, cameras, materials and effects	Create and edit materials including but not limited to different shaders such as different components of the Shader Graph.	Essentials of real-time 3D	◐

	Identify advanced lighting including but not limited to soft shadow width, bias, flares, halos, occlusion layers, and light shapes.	Essentials of real-time 3D	◐
	Given a scenario, determine the appropriate lighting techniques including global illumination, lightmapping, baking, reflection probe, and light probe.	Essentials of real-time 3D	◐
	Create, modify, and optimize particles and post-processing effects.		x
	Utilize multiple cameras including but not limited to split-screen gaming, maps, map overlays, etc.		x
	Given a scenario, determine the appropriate scriptable rendering pipeline that should be used including but not limited to URP and HDRP.		x
Scene content design	Create and implement assets using built-in 2D and 3D game objects as well as ProBuilder.	Essentials of real-time 3D Get 2D assets	◐
	Create finished-level art using terrain function, finished models, and colliders.		x

Unity Certified User: Programmer

Future creators, start here on your path to a career within the real-time 3D ecosystem. Test your foundational Unity and C# programming skills, and tell the world that you're ready to create games and apps in Unity.
Unity Certified User: Programmer

Domain			
Debugging, problem-solving, and interpreting the API	Given an example of a debug log message, create the code that created the log message.	Code in the default script	◐
	Given a code clip and its associated error message(s), determine which object(s) is(are) null.		x
	Given a specific programming task requiring the use of a particular class in the API, determine the appropriate method and/or properties, arguments, or other syntax to use.	Change a GameObject with script	◐
Creating code	Indicate when and how to initialize and use variables including but not limited to the appropriate use of all variable modifiers and data collections such as Arrays, Lists, and Dictionaries.		x
	Given a list of keywords and syntax elements, construct a viable Function declaration.		x
	Given a code clip and a description of its desired result, identify the appropriate function to control or trigger a state including but not limited to the Animator Controller.		x
	Given a scenario where a specific type of input is required and the		x

	building blocks needed are provided, construct the necessary input listener including but not limited to the keyboard and touch input.		
	Demonstrate when and/or how to use the various logic and flow control operators used in C# and Unity.		x
	Given a scenario, identify appropriate actions to take when a UI element reports a change.		x
Evaluating code	Given a scenario about the need to manage an event function, determine the appropriate action to take including but not limited to the keyboard and touch input		x
	Given a code clip that produces an error because of a variable whose data type is declared incorrectly, identify the error		x
	Given a code clip that produces an error because a function or variable is declared or used incorrectly (public/private mismatch), identify the error including but not limited to the use of Animation events		x
	Given a code clip containing a class definition, distinguish whether the class is an ECS class or some other type of class.		x
	Given a set of code clips, recognize the clip that uses naming conventions that observe Unity naming standards		x
	Given a code clip (or a set of code clips), recognize the comments that accurately describe what the code is doing.		x
Navigating the Interface	Describe the purpose, features, and functions of the various Unity IDE	Get started with scripts	x

	windows.		
	Demonstrate how to change the default scripting IDE.	Get started with scripts	◐
	Given a scenario that includes the following, then create a functional state machine. 1. a limited portion of a gaming scenario 2. a set of animation clips 3. a list of property settings		x
	Create and program a function state machine within the Unity Animator Controller including but not limited to the use of Animator functions syntax		x