



# Create with Code:

## Standards Alignment

### Unity Certified User: Programmer Exam

From the [Unity Certified User webpage](#): Schools (K–12), colleges and universities can help students get started in interactive content creation for industries such as gaming, entertainment, automotive, AEC and XR. Whether students want to create games and apps or build new worlds in AR/VR, the Unity Certified User: Programmer Certification is the place to start.



Domain	#	Standard	
1 Debugging, problem-solving, and interpreting the API	1.1	Given an example of a debug log message, create the code that created the log message.	✓
	1.2	Given a code clip and its associated error message(s), determine which object(s) is(are) null.	✓
	1.3	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.	✓
2 Creating Code	2.1	Indicate when and how to initialize and use variables, including but not limited to appropriate use of all variable modifiers and data collections such as arrays, lists, and dictionaries	✓
	2.2	Given a list of keywords and syntax elements, construct a viable Function/Method declaration.	✓
	2.3	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 Animation Controller	✓
	2.4	Given a scenario where a specific type of input is required and the building blocks needed are provided, construct the necessary input listener, including but not limited to keyboard and touch input	✓
	2.5	Demonstrate when and/or how to use the various logic and flow control operators used in C# and Unity.	✓
	2.6	Given a scenario, identify appropriate actions to take when a UI element reports a change.	✓

<b>3</b> Debugging, problem-solving, and interpreting the API	3.1	Given a scenario about the need to manage an event function, determine the appropriate action to take, including but not limited to Collision and/or Trigger Events	✓
	3.2	Given a code clip that produces an error because of a variable whose data type is declared incorrectly, identify the error.	✓
	3.3	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	✓
	3.4	Given a code clip containing a class definition, distinguish whether the class is an ECS class or some other type of class.	✓
	3.5	Given a set of code clips, recognize the clip which uses naming conventions that observe Unity naming standards.	✓
	3.6	Given a code clip (or a set of code clips), recognize the comments which accurately describe what the code is doing.	✓
<b>4</b> Debugging, problem-solving, and interpreting the API	4.1	Describe the purpose, features, and functions of the various Unity IDE windows.	✓
	4.2	Demonstrate how to change the default scripting IDE.	✓
	4.3	Given a scenario which includes: a) a limited portion of a gaming scenario, b) a set of animation clips, c) a list of property settings, Create and program a functional state machine within the Unity Animator Controller including but limited to the use of Animator functions and syntax	✓

## 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.



Domain	#	Standard	
<b>1</b> 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.	✓

<b>3</b> 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.	✓
<b>4</b> 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.	✓
<b>5</b> Computatio nal 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.	◐
<b>6</b> Creative Communica tor	6b	Students create original works or responsibly repurpose or remix digital resources into new creations.	✓
<b>7</b> 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.	◐