



ISTE Seal Review Findings Report

Coding in Minecraft

2023



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ABOUT

ABOUT ISTE

The International Society for Technology in Education (ISTE) is home to a community of global educators and solution providers who are passionate about using technology to revolutionize learning. Our vision is to create a bold community where education innovators are supported in reimagining and redesigning learning with a focus on using technology to create transformational and equitable experiences for learners. We're making this vision a reality by delivering practical guidance, evidence-based professional learning, virtual networks, thought-provoking events and the ISTE Standards.

ISTE SEAL

The ISTE Seal serves as a mark of high-quality product design for solutions that enable and guide high-quality learning. By choosing to demonstrate their commitment to supporting best practices for teaching and learning, these products show a purposeful and meaningful dedication to practical usability, digital pedagogical implementation, and the ISTE Standards. With a focus on user experience, product usability, and the most essential elements of instructional technology today, the ISTE Seal provides a set of criteria and simple indicators to guide educators, students, and technology directors toward the very best products on the market.

ISTE awards a seal only after an extensive analysis conducted by trained ISTE reviewers that ensures a product meets all critical elements under specific review criteria.

By earning an ISTE Seal, ISTE verifies that this product:

- Promotes critical technology skills.
- Supports the use of technology in appropriate ways.
- Incorporates digital pedagogy and the learning sciences.
- Addresses key elements of tech usability, user experience and user interface.
- Aligns to ISTE Standards in specific ways.

RESOURCE DESCRIPTION

WHAT IS *Coding in Minecraft*?

Prodigy Learning's 'Coding in Minecraft' is a computer science credential program delivered through Minecraft Education. It engages young and diverse learners with game-based learning, offering an immersive curriculum that leads to industry-recognized credentials. The program empowers educators with limited computer science experience to deliver a standards-aligned computer science program. Through a series of courses, students develop coding skills using MakeCode, JavaScript, or Python in the Minecraft world. The program rewards learning with credentials and appeals to students by making learning and assessment enjoyable through Minecraft.

With 'Coding in Minecraft,' educators can facilitate computer science and coding education without a background in the subject. The program leverages Minecraft's popularity to captivate students and provides an online platform for easy assessment. Educators can assess student coding activities using automatic grading, which provides instant feedback and recommendations. This not only saves educators time but also enables them to gain knowledge of computer science while their students learn. Overall, 'Coding in Minecraft' combines Minecraft's appeal, an immersive curriculum, and user-friendly assessment tools to create an effective and accessible learning experience in computer science and coding.

HOW IS *Coding in Minecraft* IMPLEMENTED?

'Coding in Minecraft' is implemented through a comprehensive solution designed for K-12 educators with limited computer science or coding experience. It includes curriculum, Minecraft Worlds, assessments, micro-credentials, a capstone exam, and educator resources. The program offers flexibility in its format, allowing it to be used in traditional classrooms or as an after-school activity. Students engage in immersive learning experiences within Minecraft worlds, completing learning activities and assessments. They submit their code for assessment through an online portal, which automatically checks the code and allows educators to provide final grades and feedback. Successful completion of assessments earns students micro-credentials, and passing the capstone exam grants the appropriate Capstone Credential.



ISTE SEAL REVIEW

Product: Coding in Minecraft

Product Type: Assessment Tool

Organization: Prodigy Learning

Date of Award: June 2023

REVIEW METHODOLOGY

ISTE Seal reviews are conducted by a distinguished panel of experts in education, instruction, and technology. These experts utilize the most up-to-date data provided by the organization to conduct thorough evaluations of each solution. The evaluations focus on assessing the solution's performance in addressing specific elements outlined in the technical and pedagogical usability framework and the ISTE Standards.

To complete their rigorous evaluations, the reviewers utilize a comprehensive rating system, categorizing each solution as either "meets expectations" or "does not meet expectations." This assessment covers both the required and optional "Look Fors" outlined in the application. To ensure the validity and reliability of their results, the reviewers regularly engage in calibrations. Final review findings are then analyzed and combined, providing an overall score for alignment with each indicator.

At ISTE, we take great pride in our unwavering commitment to delivering results that schools and districts can have full confidence in. To be deemed education-ready learning solutions, products must meet the high standards in learning sciences, user experience and interface, accessibility, and content quality.

SCOPE OF REVIEW

Coding in Minecraft was reviewed against the technical, pedagogical usability framework and the ISTE Standards to determine whether **the solution is education-ready**. ISTE reviewers examined all evidence provided by the organization and interacted directly with the product.



REVIEW FINDINGS

ISTE STANDARDS: The ISTE Standards provide the competencies for learning, teaching, and leading in the digital age, providing a comprehensive roadmap for the effective use of technology in schools worldwide. Grounded in learning science research and based on practitioner experience, the ISTE Standards ensure that using technology for learning can create high-impact, sustainable, scalable, and equitable learning experiences for all learners.

1.4.d Innovative Designer

Exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.

1.5.c Computational Thinker


Break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.

1.5.d Computational Thinker

Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

1.6.b Creative Communicator

Create original works or responsibly repurpose or remix digital resources into new creations.


FEEDBACK	OUTCOME
<ul style="list-style-type: none"> ● Gamified assessments allow students to write original code to solve problems through trial and error. Students lead their avatars through challenges, ultimately reaching the end and escaping a maze. ● Students write sequential steps before creating code to solve a problem. As students write code, they learn how to successfully create an algorithm. 	



<ul style="list-style-type: none"> • Students write code to automate a task to complete a lesson challenge. They see firsthand how correct code allows for automation of tasks. • Lesson challenges require students to write and repurpose original code. Students are given the ability to test new code by creating a remix before the presentation. 	
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DIMENSION 1: USER INTERFACE AND AGENCY



Definition: The design of the product interface and user experience helps teachers quickly and reliably achieve instructional goals. This dimension includes features related to interface design, learnability, navigation, maximizing time on task, control over actions, and general usability.

FEEDBACK	OUTCOME
<ul style="list-style-type: none"> • Product interface includes a user-friendly dashboard and navigation menu. • Structured pathway guides students through the program courses. • Login is easy to find and allows single sign-on with Microsoft or Google accounts. • Interface buttons sized appropriately with important ones easy to find. Exams allow students to move through tests easily, skipping questions if needed. • Technical support available through service desk tickets and FAQ site with video-based and lesson walkthroughs. 	



DIMENSION 2: LEARNING DESIGN

Definition: The product has features that exhibit and promote design and customization of learning episodes in ways that align with research-based best practices, including those rooted in the learning sciences.



FEEDBACK	OUTCOME
<ul style="list-style-type: none"> • Learning outcomes embedded in and at the start of all lessons. • Lesson activities have small steps that students must complete before progressing. • Visual elements support deeper meaning and understanding and do not distract from learning. • Formative assessment is at the end of each lesson to check for understanding. 	
<p>DIMENSION 3: DIGITAL PEDAGOGY</p> <p>Definition: The product is designed to support the development of digital age learning skills, capacities and knowledge. This dimension focuses on how technology can help students and teachers experience the best possible learning experiences, including the social and learning affordances that digital educational products uniquely offer.</p>	
FEEDBACK	OUTCOME
<ul style="list-style-type: none"> • Educators provide feedback to students for work submitted. • Students can collaborate within the product environment. 	
<p>DIMENSION 4: INCLUSIVITY</p> <p>Definition: The product helps teachers provide learning experiences that are relevant to students of many cultures, backgrounds, and abilities, and support learner motivation and agency in the learning process. The product meets current guidelines around accessibility, and supports a positive classroom culture.</p>	
FEEDBACK	OUTCOME



<ul style="list-style-type: none"> • Avatars can be created to reflect diverse student identities. • Visuals are contained within the steps of a lesson to support understanding. • Students can control the speed of narration which is built in and available under Immersive Reader. 	
<p>DIMENSION 5: ASSESSMENT AND DATA</p> <p>Definition: The product uses formative assessments – learning experiences that help make visible what students know and don’t yet know – to generate data that inform teachers about student knowledge and skill gaps, and provide students assessment feedback that is specific, actionable, and constructive. As such, it guides teachers’ instructional decisions and students’ learning journeys.</p>	
<p style="text-align: center;">FEEDBACK</p>	<p style="text-align: center;">OUTCOME</p>
<ul style="list-style-type: none"> • Formative assessments incorporated throughout the lessons with clear alignment between objectives and assessments. • Variety of assessment types and student submission options. • Automated grading, feedback, and assessment criteria helpful for educators and students. • Analytics are clear and informative for educators allowing for easy progress monitoring. • Performance results are available to educators and easy to interpret. educators can track student progress. 	

CONCLUSION

Coding in Minecraft is designed for students to learn coding regardless of the educator's knowledge or experience. The product interface features a user-friendly dashboard and navigation menu, providing a structured pathway for students to progress through program courses. Technical and content support is available through various formats. Learning outcomes are embedded within lessons and stated at the beginning, while lesson activities are designed with manageable steps for students to complete before advancing. Visual elements are thoughtfully incorporated to enhance understanding without causing distractions. Formative assessments are provided throughout each lesson to assess skill development, and educators are able to provide feedback to students on their submitted work. A variety of assessment types and student submission options allow for differentiation. The platform also provides automated grading, and the analytics provided are clear and informative, allowing educators to easily monitor student progress.

In summary, the gamified assessments in Coding in Minecraft immerse students in the process of coding, allowing them to write original code, solve problems through trial and error, and guide their avatars through challenging tasks. By writing sequential steps and creating algorithms, students gain practical coding experience and develop an understanding of automation. The lesson challenges further promote creativity and problem-solving as students write and repurpose their own code, and the ability to test new code through remixing enhances their learning journey.