



ISTE Seal Review Findings Report

**BrainPOP
Science**

2024



TABLE OF CONTENTS

ABOUT	3
About ISTE	3
ISTE Seal	3
RESOURCE DESCRIPTION	4
What is BrainPOP Science?	4
How is BrainPOP Science Implemented?	4
ISTE SEAL REVIEW	5
Review Methodology	5
Scope of Review	5
Review Findings	6
CONCLUSION	11



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 *BrainPOP Science*?

BrainPOP Science is a supplemental middle school science solution from the creators of BrainPOP, spanning life science, physical science, and earth and space science. Immersive science investigations and engineering projects make learning more engaging, effective, and relevant while preparing students to become scientific thinkers and doers.

HOW IS *BrainPOP Science* IMPLEMENTED?

BrainPOP Science is a supplemental solution that puts grade 6–8 students at the center of science learning. The multidimensional approach integrates disciplinary core ideas, science practices, and crosscutting concepts, transforming science education into an interrelated world of inquiry, and enabling students to experience science as a dynamic and interconnected field of study.

With BrainPOP Science, students approach relatable guiding questions, engage in real-world phenomena, ask interesting questions, participate in scientific debates, and construct scientific arguments supported by evidence. Data manipulatives, simulations, BrainPOP 3D Worlds®, and the overarching Claim-Evidence-Reasoning (CER) process provide students with authentic opportunities to "be a scientist." Engineering projects engage students with real-world engineering practices and core concepts defined by NGSS benchmarks.



ISTE SEAL REVIEW

Product: BrainPOP Science

Product Type: Curriculum

Organization: BrainPOP

Date of Award: May 2024

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

BrainPOP Science 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.

Empowered Learner 1.1.c

Students use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.

Knowledge Constructor 1.3.d

Build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.

Innovative Designer 1.4.b

Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.

Computational Thinker 1.5.b

Students collect data or identify relevant data sets, use digital tools to analyze them and represent data in various ways to facilitate problem-solving and decision-making.

FEEDBACK	OUTCOME
<ul style="list-style-type: none"> • Students continually submit work to receive feedback and improve on their work. Especially in the engineering sections, students create digital products and submit them in a digital portfolio. • Engineering Projects address real-world challenges and empower students to pursue solutions. Students investigate a variety of age-appropriate prompts and problems. • Engineering projects guide students through a structured design process where they can brainstorm ideas with digital sticky notes to solve problems with real-life constraints. 	



<ul style="list-style-type: none"> • Investigations have an explicit phase during which students review resources, extract data on observation cards, and draw their conclusions. 	
<p>DIMENSION 1: USER INTERFACE AND AGENCY</p> <p>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.</p>	
<p style="text-align: center;">FEEDBACK</p>	<p style="text-align: center;">OUTCOME</p>
<ul style="list-style-type: none"> • Right away, an educator can access video tutorials, browse through investigations, or try out sample investigations with tooltips available when creating an investigation for the first time. • Clear actions such as single-sign-on, logging in with a username and password, or entering a code allow an easy login experience. • The platform is thoughtfully designed for ease of use, including consistent organization and prominent placement of actionable buttons and links. • The platform offers intuitive search and filtering features, ensuring users can quickly locate desired content or functions, making it accessible even for novice teachers. 	
<p>DIMENSION 2: LEARNING DESIGN</p> <p>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.</p>	
<p style="text-align: center;">FEEDBACK</p>	<p style="text-align: center;">OUTCOME</p>



<ul style="list-style-type: none"> • The platform displays learning outcomes at the start and/or throughout learning episodes, with explicit connections between outcomes, content, and activities, accompanied by a Science standards tab on each unit page and a comprehensive teacher guide outlining objectives. • Videos explore learning concepts through characters and stories, which increases student engagement in the learning objectives. • Units are modular, allowing educators to assign investigations and add differentiated resources to support personalized learning. • Throughout the learning experiences, students have opportunities to reflect, answer questions, make observations, and write claim statements. 	
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DIMENSION 3: DIGITAL PEDAGOGY

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.

FEEDBACK	OUTCOME
<ul style="list-style-type: none"> • Engineering projects begin with an accessible problem statement and design challenge that students can relate to, such as losing keys. Students then follow the design cycle to build, test, and iterate on prototypes. • Learning episodes include activities explicitly related to problem definition and deconstruction. Students are required to state their methodology for each phase of the engineering process. • From a scientific perspective, information curation activities require students to find information and evaluate its credibility and relevance. 	



<ul style="list-style-type: none"> Engineering projects require students to design multiple versions of their solutions. 	
<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>	
<p style="text-align: center;">FEEDBACK</p>	<p style="text-align: center;">OUTCOME</p>
<ul style="list-style-type: none"> The characters in lessons throughout the curriculum are diverse in ethnic background, race, and gender. Varied examples embedded in the curriculum or lessons from food and history are great ways to help students connect diversity, science, and their own lives. Video controls are easy to navigate with closed captions and speed control, and buttons use high contrast design with accessibility in mind. The platform also complies with WCAG 2.1 AA. 	
<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"> Investigations, quizzes, and standalone resources contain different assessment items, such as open-ended, multiple choice, multiple select, matching, fill-in-the-blank, labeling, and graphic organizers. 	



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| <ul style="list-style-type: none">• Investigations allow students to work in multiple formats, such as open-ended writing, evidence-based writing, or quizzes.• Students receive immediate feedback on embedded quizzes, and educators can submit qualitative feedback on open-ended responses.• Assessment results by students and groups are immediately available to teachers with easy-to-interpret results and a configurable display. | |
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CONCLUSION

BrainPOP Science provides numerous benefits for teaching science. The platform's user interface is user-friendly for teachers and students, facilitating easy navigation through the curriculum. Seamless integration with learning management systems streamlines the login and lesson-sharing process, saving valuable time. The diverse range of videos, interactive quizzes, and activities caters to various learning styles, fostering learning and assessment.

Each unit begins with a video explanation followed by interactive activities, breaking scientific concepts down into manageable steps. The curriculum is tailored to the targeted age group, ensuring appropriateness for the students. Investigations within units are well-organized, with embedded videos reinforcing lessons through engaging visuals. Teachers have the flexibility to assign investigations and provide differentiated resources to support students' diverse needs.

The structured curriculum aligns with CCSS, NGSS, and U.S. state standards while offering authentic learning experiences linked to real-world problems. Students receive continuous feedback on their work, allowing them to improve their submissions. Notably, within the engineering sections, students create digital products showcased in a digital portfolio. Additionally, the platform provides teachers with an environment to develop learning experiences aligned with selected standards, including the ISTE Student Standards. BrainPOP Science enhances student comprehension, retention, and enjoyment of science topics.