ISTE SEAL OF ALIGNMENT REVIEW FINDINGS REPORT

Binary Logic

Digital Kids/Digital Teens

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ABOUT

ABOUT ISTE

The International Society for Technology in Education (ISTE) is the premier nonprofit membership organization serving educators and education leaders. ISTE is committed to empowering connected learners in a connected world and serves more than 100,000 education stakeholders throughout the world.

As the creator and steward of the definitive education technology standards, our mission is to empower learners to nourish in a connected world by cultivating a passionate professional learning community, linking educators and partners, leveraging knowledge and expertise, advocating for strategic policies, and continually improving learning and teaching

ISTE SEAL OF ALIGNMENT

Resources and products designed with the ISTE Standards in mind are choosing to demonstrate their commitment to support critical digital age learning skills and knowledge. Regardless of a solution's intended grade level, purpose or content area, by addressing the ISTE Standards and earning a Seal of Alignment, a solution is shown to consciously, purposefully and meaningfully support best practices for digital age teaching and learning.

ISTE considers a solution aligned to the ISTE Standards only after an extensive review conducted by trained ISTE Seal of Alignment reviewers, and it has been determined to meet all critical elements of a particular standard indicator in accordance with specific review criteria.

By earning a Seal of Alignment, ISTE verifies that this product:

- Promotes critical technology skills
- Supports the use of technology in appropriate ways
- Contributes to the pedagogically robust use of technology for teaching and learning
- Aligns to the ISTE Standards in specific ways as described in the review finding report

RESOURCE DESCRIPTION

WHAT IS DIGITAL KIDS/DIGITAL TEENS?

The Digital Kids/Digital Teens curriculum is a print-based digital literacy curriculum developed by Binary Logic and consists of six books for "Kids" and six books for "Teens." There are supplementary booklets teaching coding and robotics designed as short lessons for teachers to use with flexibility. Supplementary learning and teaching resources such as video tutorials, activities, and worksheets are available online for students and teachers. The Digital Kids/Digital Teens curriculum introduces students in grades 1-12 to critical digital literacy skills using a sequenced and guided curriculum.

Each of the books are divided into modules and each module is divided into tasks. In addition to the discursive and graphic presentation, the modules include several hands-on activities and projects designed to help students put to use what they have learned. The activities can be used as both additional learning activities and as formative assessments.

The curriculum is offered in different languages and targets different countries around the world. Only the English version was reviewed.

HOW IS DIGITAL KIDS/DIGITAL TEENS IMPLEMENTED?

Students can access both printed and digital books, module tests, and video tutorials online. Similarly, teachers have online access to most modules and tasks in the curriculum, resources, detailed lesson plans, worksheets with extra activities for the computer lab or homework, and self-evaluation sheets.

The lesson plans include clear learning objectives, required tools and resources for teaching, and step-by-step instructions. The module and task assessments, including online module tests, worksheets, and self-evaluation sheets, are brief and tend to be multiple choice, match, fill in the blank, and true/false items.

The curriculum covers various critical topics in information and communication technologies, from technology hardware to software applications. The knowledge and skills covered are foundational, providing introductory knowledge to a wide variety of different ICT topics. The content is introduced and then revisited in increasing detail and complexity in what the creators describe as a spiral approach. The hardware topics include a wide range of both legacy and newer technologies such as hand-held, wireless devices, touch screens, and robot kits. The software topics include browsing and searching, word processing, spreadsheets, digital design, databases, programming, project management, programming tools and languages, and so forth.

Students have the opportunity to practice new knowledge and skills by working on individual or group activities or projects in every module. The curriculum design allows teachers to adapt and mix-match the materials according to their needs. Teachers can pick and choose parts of the materials to supplement and are not required use all activities.

ISTE SEAL OF ALIGNMENT REVIEW

Product: Digital Kids/Digital Teens
Organization: Binary Logic
Date of Award: January 2021

REVIEW METHODOLOGY

ISTE Seal of Alignment reviews are conducted by a panel of education and instructional experts. Reviewers use data collected both separately and collectively to determine how a solution addresses specific elements described in each of the indicators of the ISTE Standards. Special instruments are used by reviewers to collect data on potential alignment across all resource materials. Alignment is determined based on the extent to which all or some of specific elements are addressed within the materials. Reviewers conduct regular calibrations to assure the validity and reliability of the results and final review findings are combined for an overall score for alignment on each individual indicator.

During the review process for Digital Kids/Digital Teens, reviewers:

- collected data on when and how each activity addressed specific skills and knowledge described in the ISTE Standards for Students at either a foundational or applied level
- compiled findings to determine overall alignment across all ISTE Student standards and indicators.
- used aggregate findings to form the basis of the overall alignment results.

SCOPE OF REVIEW

The Digital Kids/Digital Teens curriculum was reviewed for alignment against the 2016 ISTE Standards for Students. ISTE reviewers examined both student resources and teacher resources. Student resources include all books of the Digital Kids/Digital Teens curriculum, videos, online activities, and tests. Teacher resources include lesson plans, activity worksheets, and self-evaluation sheets.

The Digital Kids/Digital Teens curriculum content is at times also packaged under the titles Digital World, eSkills and ICT Skills; these titles are included in the scope of this Review.

Only the English version of the curriculum was reviewed.

REVIEW FINDINGS

Digital Kids/Digital Teens was found to address the following standards and indicators of the ISTE Standards for Students:

ISTE Standards for Students							
	Standard 1 **Empowered Learner**	Standard 2 **Digital Citizen**	Standard 3 **Knowledge Constructor**	Standard 4 **Innovative Designer**	Standard 5 **Computational Thinker**	Standard 6 **Creative Communicator**	Standard 7 **Global Collaborator**
Indicator A							
Indicator B							
Indicator C							
Indicator D							

Foundational resources and activities focus primarily on knowledge that facilitates skills acquisition to eventually meet ISTE Standards indicators.

Applied resources and activities focus primarily on practical, real-world and/or relevant opportunities to practice the skills and knowledge learned in the curriculum.

Digital Kids/Digital Teens addresses the ISTE Standards for Students in the following ways:

- Foundational - Resources and activities aligned at the *foundational* level primarily focus on skills and knowledge that facilitate skill acquisition to eventually meet ISTE Standard indicators.

ISTE Standard	Foundational Finding Statement
1. Empowered Learner. Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.	
1.b. Build networks and customize their learning environments in ways that support the learning process.	Students are introduced to social media, video conferencing, tablets, and e-learning platforms and then asked to use various tools to complete activities and projects.
1.d. 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.	Students are exposed to a wide variety of computer science concepts including both technology hardware and software applications. For example, in *Computer Science Basics*, students learn about computer architecture, different operating systems. In all activities, students are asked to use the new tools to complete tasks to demonstrate their ability to use technologies. For example, in *Advanced Imaging*, students are asked to use Adobe Photoshop to change the color of the images.
2. Digital Citizen. Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.	
2.b. Engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.	In a number of modules, students learn how to set up their accounts on social media such as Facebook and Twitter. Students learn etiquette for using communication tools such as chat rooms, emails, and blogs. Additionally, students are introduced to the idea that their digital footprint will probably be available forever.
2.b. Engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.	Several modules include tips on how to engage in safe, healthy, legal, and ethical behaviors when using various technologies. For example, students are reminded to take a break after sitting in front of the computer for a while. Students learn about etiquette for posting content online; for example, in *Communicating Online*, students are asked to share appropriate content in a blog to avoid legal trouble when addressing a global audience.

2.c. Demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.	Students are introduced to intellectual property laws and categories of copyrighted materials while learning to cite anything that is not their original work.
2.d. Manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.	Students learn to set up social media accounts, limit access to personal profiles, and learn to use cloud storage to back up data. Students also learn about antivirus programs, firewalls, and dangerous messages and emails that could collect their personal data.
3. Knowledge Constructor. Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.	
3.a. Plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.	Students learn how to use search engines such as Google and wikis to find information. For example, in *Use Online Resources*, students learn to use filters in the search engine to do effective searches. Students also learn to use functions such as filter and sort in databases to locate the information they need.
3.c. Curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.	Throughout the curriculum, students are introduced to different digital tools such as word processing, databases, multimedia presentations, and programming tools. In all activities, students are given step-by-step instructions on how to use these tools to create artifacts, including slide shows, radio shows, databases, posters, web pages, programs and so forth. For example, in *Working with Numbers*, students use the Internet to gather statistics of their countries' agriculture products, analyze the data with Microsoft Excel, and make charts to present results.
3.d. Build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.	In a number of activities and projects, students are asked to use the new tools such as search engines and wikis to find information about issues such as space exploration, agriculture products, and energy conservation. Students also learn to solve real-world technological problems. For example, in *I'm an IT Administrator*, students learn how to deal with problems such as the malfunction of the monitor, speaker, keyboard, etc.

4. Innovative Designer. Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.	
4.a. Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.	Students receive step-by-step instructions for to using various platforms and tools to design artifacts such as editing images with Adobe Photoshop, making posters with InDesign, designing web pages with Zoho, and developing programs with Python and Scratch. In all projects, specific instructions are also provided to guide students' design process. Students are also introduced to different brainstorming and design tools such as mind maps and flowcharts to help generate ideas and come up with specific plans.
4.b. Select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.	Students learn to use different tools such as brainstorming tools and project management tools to facilitate the design process. For example, in *Project Management*, students learn how to create workflow diagrams with Microsoft Visio and create Gantt charts with GanttProject. When designing multimedia artifacts such as presentations and blogs, students are instructed to keep their audience in mind as part of their decision making.
5. Computational Thinker. Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.	
5.a. Formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.	Students learn to define and break down the problem using algorithmic thinking and come up with specific steps to solve it. For example, in *Programming the Computer*, students first think about the steps that have to make to solve the problem and then produce an ordered sequence of steps that describe the solution, based on which students write the program code in Python to solve the problem.
5.b. 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.	Students use different tools such as search engines, questionnaires, data logging software, databases, and spreadsheets to collect and analyze data with tools such as databases and spreadsheets. Additionally, students learn to create different

	charts and reports within spreadsheets and database tools.
5.c. Break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.	In all modules, step-by-step instructions for using tools to create artifacts are provided. For example, in Designing a Document, students are given specific steps of how to create a newsletter using Microsoft. In *Programming the Computer*, students learn how to break down the problems into small parts and generate solutions using flowcharts. Students also learn to use mind maps to organize and prioritize information to extract key information.
5.d. Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.	Several modules focus specifically on coding and robotics. Students are introduced to automation and algorithmic thinking through the use of flowcharts, block programming with Scratch and more advanced languages such as Python. Students also learn to combine programming with robot kits.
6. Creative Communicator. Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.	
6.a. Choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.	In each module, there is a section that introduces different platforms and compares similar tools to students. According to their needs, students can choose the most appropriate one from the available tools. Students are instructed to keep the audience in mind when presenting the information. For example, in *Documents for a Purpose*, students are asked to extract key data from their research and create charts to show their data clearly.
6.b. Create original works or responsibly repurpose or remix digital resources into new creations.	Students learn to use various tools to create original works, including slides, blogs, storyboards, animated videos, personal websites, games, and so forth. Students also learn to find multimedia data such as texts, images and sounds online to incorporate in their projects and cite the original sources.
6.c. Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.	In a number of modules, students learn to present information with various digital objects such as creating slides, charts, reports, audios, and videos to present their research results and convey their ideas. Students also learn to use different strategies

	to communicate ideas effectively and clearly, such as only keeping keywords in slide shows, keeping blogs short, using charts and images in blog posts, and so forth.
6.d. Publish or present content that customizes the message and medium for their intended audiences.	Students learn to publish content by writing blogs, creating and publishing personal websites, posting on social media, and making slides to present information. In a number of projects, students are asked to take the audience into consideration when creating content. For example, students are asked to write blog posts with a global audience in mind to avoid some inappropriate subjects. Students are asked to present messages differently to different audiences to keep them interested, such as using appropriate visuals to address the young audience.
7. Global Collaborator. Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.	
7.b. Use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.	In a number of projects, students are asked to form teams and use collaborative technologies to communicate with their classrooms to complete the projects in Google Drive, Microsoft OneDrive, Microsoft OneNote, and Skype. For example, in *Creating a Document*, students are asked to write an article about their everyday life and ask their parents and grandparents about theirs in the past to make comparisons.
7.c. Contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.	In the modules that focus on project management, students learn to manage the project using workflow charts and create Gantt charts. Students also learn to select and assign teammates according to skillset, prioritize tasks and assign resources effectively.
7.d. Explore local and global issues and use collaborative technologies to work with others to investigate solutions.	In most projects, students are asked to form groups and use Google Drive, emails, or Skype to work on the projects collaboratively. Topics of these projects touch on various local and global issues including solar technology and energy conservation, space exploration, and local agriculture products.

CONCLUSION

The Digital Kids/Digital Teens curriculum covers a wide range of topics in Information and Communications Technology. The spiral approach to curriculum design exposes students to topics and technologies repeatedly but in an increasingly detailed and deeper way, which matches the content with students' developmental levels and benefits their construction of knowledge over time from Grades 1-12. The digital tools and software include a variety of products allowing students and teachers to choose what is available and accessible to them.

Both student books and teaching materials are designed and presented in a clear and detailed way. There are very specific descriptions and vivid visuals in the student books to assist students' learning. Digital versions of student books are available online, so students can access the materials anywhere. There are also a variety of supplementary teaching materials and activities for teachers to use. Teachers have the flexibility to adapt and mix-match the materials according to their needs, and can also pick and choose parts of the materials to supplement. Teachers may not use all activities depending on the specific needs and goals of their classroom.

An array of hands-on activities and projects allow students to practice what they have learned throughout the modules. For most projects, group work is encouraged, allowing for a collaborative learning environment for students.

The Digital Kids/Digital Teens curriculum addresses many of the foundational knowledge areas and skills for the ISTE Standards for Students. Given the variety of topics it covers, the curriculum presents a strong example of content that supports the ISTE standards.