



ISTE SEAL OF ALIGNMENT REVIEW FINDINGS REPORT

Tinkercad

JUNE 2016

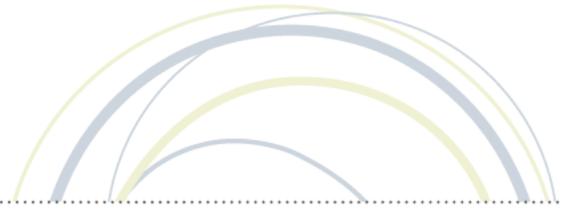
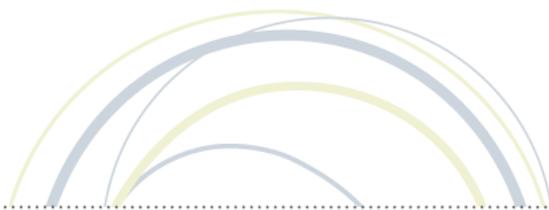


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ABOUT

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 flourish 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.

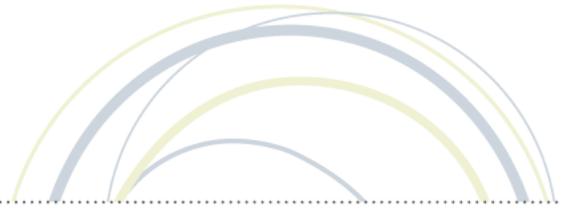
ISTE SEAL OF ALIGNMENT

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 THE TINKERCAD PROGRAM?

Tinkercad is a browser-based 3D design and modeling tool that is part of Autodesk's 123D toolkit of free applications available online. In addition to the Tinkercad software tool, the Tinkercad web site provides a number of additional resources including tutorials to help users learn to use the tool, a gallery of designs created by others which can be used as the basis for new designs, an extensive blog that documents the work of the community of Tinkercad users, and links to related information and sites. There is also an educational section with features that enable teachers to create classes to organize and manage student use of the tools and resources.

HOW IS TINKERCAD IMPLEMENTED?

Six of the lessons are focused on the basics of the Tinkercad tool including its robust set of features, a library of shapes, and step-by-step hands-on design activities. These are followed by another 39 (currently) lessons that walk students through the steps of making a variety of useful or artistic objects of increasing complexity.

ISTE SEAL OF ALIGNMENT REVIEW

Product: Tinkercad

Company: Autodesk

Date of Award: June 2016

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.

SCOPE OF REVIEW



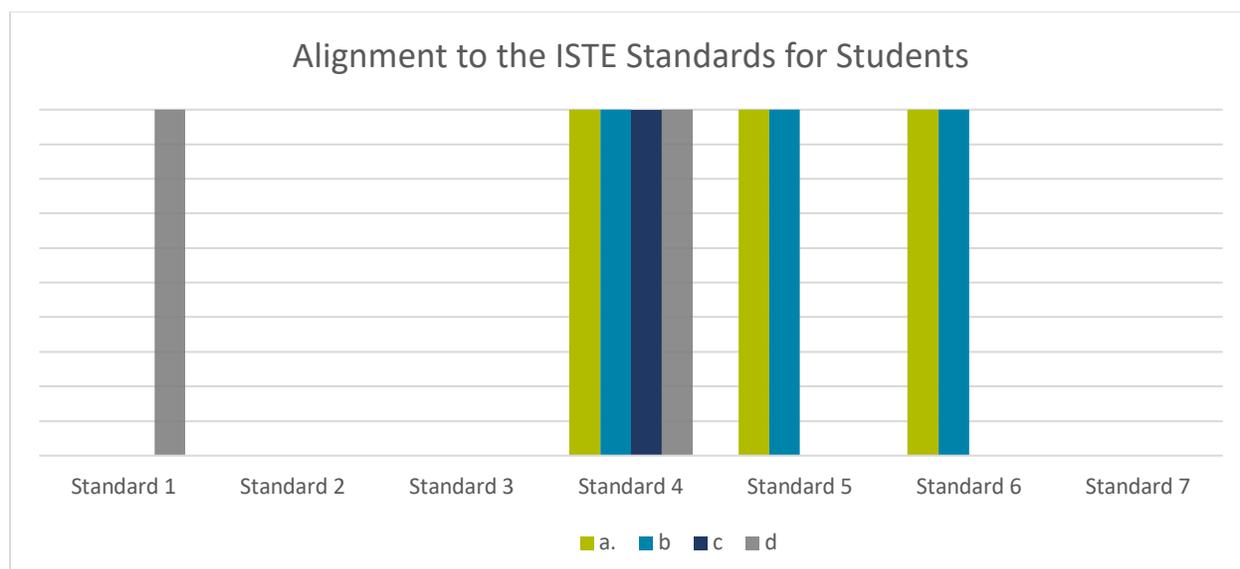
On the basis of the high quality of the tools and learning materials on the Tinkercad site and their value in building knowledge and skills foundational to proficiency in the 2016 ISTE Standards for Students, ISTE determined the resource should undergo a review for Readiness.

During the review process reviewers:

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

REVIEW FINDINGS

The Tinkercad resource supports the following indicators of the ISTE Standards for Students:

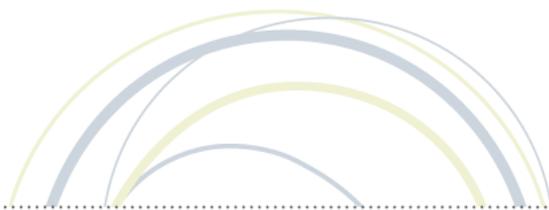


The Tinkercad resource supports the ISTE Standards for Students in the following ways:

1. Empowered Learner

1.d. 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.

4. Innovative Designer



- 4.a. Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.
- 4.b. Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.
- 4.c. Students develop, test and refine prototypes as part of a cyclical design process.
- 4.d. Students exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.

5. Computational Thinker

- 5.a. Students formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.
- 5.b. Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.

6. Creative Communicator

- 6.a. Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.
- 6.b. Students create original works or responsibly repurpose or remix digital resources into new creations.

CONCLUSION

On its own, the Tinkercad tool is easy-to-use, versatile and powerful. It lends itself to the creation of models of almost anything that can be assembled with the tools and shapes included. The ability to use designs created by Tinkercad as input to 3D printers adds to its power and its appeal to users.

The lessons, like the site, are well-designed, user-friendly and engaging. They are based primarily on a guided practice approach, but users have to make some decisions in the process. In addition, users are encouraged to start with a previous design and “tinker” with it to refine it or to create something wholly new. Likewise, the web site offers opportunities for users to work collaboratively with others to create designs collaboratively. While we aren’t reviewing the web site as such, it represents encouragement for users to think and work independently, collaboratively and creatively and to approach problem-solving in a variety of ways.