

**Middle School - ISTE (International Society for Technology in Edu)
MS ISTE- Technology in the Classroom (2018-19) (170 - 180 Days)
Aug - May**

Last Updated: 6/5/2018

Overview

What transformative learning is possible in a digital world?

The ISTE Standards for students emphasize the skills and qualities we want for our students, enabling them to engage and thrive in a connected, digital world.

Students are inspired to amplify learning with technology and are challenged to be agents of their own learning.

Preparing our students for an unknown future, technology is a critical tool to bringing the 2020 vision to life in our classrooms.

Standards:

- Standard 1: Empowered Learner
 - GLE 1: Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.
 - EO a: Students articulate personal learning goals, select and manage appropriate technologies to achieve them, and reflect on their successes and areas of improvement in working toward their goals.
 - EO b: Students identify and develop online networks within school policy, and customize their learning environments in ways that support their learning, in collaboration with an educator.
 - EO c: Students actively seek performance feedback from people, including teachers, and from functionalities embedded in digital tools to improve their learning process, and they select technology to demonstrate their learning in a variety of ways.
 - EO d: Students are able to navigate a variety of technologies and transfer their knowledge and skills to learn how to use new technologies.
- Standard 2: Digital Citizen
 - GLE 1: Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act in ways that are safe, legal and ethical.
 - EO a: Students manage their digital identities and reputations within school policy, including demonstrating an understanding of how digital actions are never fully erasable.
 - EO b: Students demonstrate and advocate for positive, safe, legal and ethical habits when using technology and when interacting with others online.
 - EO c: Students demonstrate and advocate for an understanding of intellectual property with both print and digital media—;including copyright, permission and fair use—;by creating a variety of media products that include appropriate citation and attribution elements.
 - EO d: Students demonstrate an understanding of what personal data is and how to keep it private and secure, including the awareness of terms such as encryption, HTTPS, password, cookies and computer viruses; they also understand the limitations of data management and how data-collection technologies work.
- Standard 3: Knowledge Constructor
 - GLE 1: 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.
 - EO a: Students demonstrate and practice the ability to effectively utilize research strategies to locate appropriate digital resources in support of their learning.
 - EO b: Students practice and demonstrate the ability to evaluate resources for accuracy, perspective, credibility and relevance.
 - EO c: Students locate and collect resources from a variety of sources and organize assets into collections for a wide range of projects and purposes.
 - EO d: Students explore real-world issues and problems and actively pursue an understanding of them and solutions for them.
- Standard 4: Innovative Designer
 - GLE 1: Students use a variety of technologies within a design process to solve problems by creating new, useful or imaginative solutions.
 - EO a: Students engage in a design process and employ it to generate ideas, create innovative products or solve authentic problems.
 - EO b: Students select and use digital tools to support a design process and expand their understanding to identify constraints and trade-offs and to weigh risks.
 - EO c: Students engage in a design process to develop, test and revise prototypes, embracing the cyclical process of trial and error and understanding problems or setbacks as potential opportunities for improvement.
 - EO d: Students demonstrate an ability to persevere and handle greater ambiguity as they work to solve open-ended problems.
- Standard 5: Computational Thinker
 - GLE 1: Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.
 - EO a: Students practice defining problems to solve by computing for data analysis, modeling or algorithmic thinking.
 - EO b: Students find or organize data and use technology to analyze and represent it to solve problems and make decisions.
 - EO c: Students break problems into component parts, identify key pieces and use that information to problem solve.
 - EO d: Students demonstrate an understanding of how automation works and use algorithmic thinking to design and automate solutions.
- Standard 6: Creative Communicator
 - GLE 1: 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.
 - EO a: Students select appropriate platforms and tools to create, share and communicate their work effectively.
 - EO b: Students create original works or responsibly repurpose other digital resources into new creative works.
 - EO c: Students communicate complex ideas clearly using various digital tools to convey the concepts textually, visually, graphically, etc.
 - EO d: Students publish or present content designed for specific audiences and select platforms that will effectively convey their ideas to those audiences.
- Standard 7: Global Collaborator
 - GLE 1: Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.
 - EO a: Students use digital tools to interact with others to develop a richer understanding of different perspectives and cultures.
 - EO b: Students use collaborative technologies to connect with others, including peers, experts and community members, to learn about issues and problems or to gain broader perspective.
 - EO c: Students determine their role on a team to meet goals, based on their knowledge of technology and content, as well as personal preference.
 - EO d: Students select collaborative technologies and use them to work with others to investigate and develop solutions related to local and global issues.

District Unit of Study Updates:

Date

Comments

5/15/2017 12:55:49 AM

This Unit of Study has been updated to reflect the changes to the 2016 ISTE Student Standards. Revisions were made to: Grade Level Expectations Overarching Understandings Overarching Essential Questions Big Ideas Organizing Concepts Essential Questions KUD's Resources

6/9/2017 7:13:41 PM

Added Unit Overview

Desired Results

Big Ideas:

- Empowered Learner, Digital Citizen, Knowledge Constructor, Innovative Designer, Computational Thinker, Creative Communicator, Global Collaborator,

Overarching Understandings:

- Learners are empowered to build collections of tools and resources which help them learn.
- Citizens participate productively in physical and digital societies.
- Research demands curating information in order to come to meaningful conclusions.
- Innovative thinking develops solutions around changing needs.
- The art of blending human ideas and digital tools gives us the power to solve real-world problems.
- Complex ideas can be shared through creative design and clear communication.
- Collaboration expands thinking by enabling us to consider diverse perspectives.

Overarching Essential Questions:

- How do people harness the power of technology to take ownership of their learning?
- What are the rights and responsibilities of being a digital citizen?
- How do I actively pursue constructing knowledge versus passively ingesting information?
- How does the design process support problem-solving?
- How can we solve human problems with computer enabled solutions?
- How can I impact the ways in which a message is received by the audience?
- How might technology connect me to people to broaden my perspective?

Organizing Concepts

Empowered Learner

Students will understand that...

- Technology resources vary based on the desired learning outcomes. (1a)
- Reflection is an important part of monitoring learning.(1a)
- Learners customize resources based on what works best for them. (1b)
- Evaluating the source of the feedback is important. (1c)
- There are a wide variety of digital tools available and it is critical to choose the right tool for the task.(1d)
- Existing knowledge supports the learning of new technologies. (1d)
- Troubleshooting includes problem solving and collaboration.(1d)

Students will know...

- Measurable goal setting strategies (1a)
- A variety of approved tools to support goal setting, progress monitoring, and feedback (eg practice apps, videos to learn from others, commenting features, graphs/charts,calendars) (1a)
- Areas of growth (1a)
- Approved apps, extensions/add-ons which personalize online platforms (1b)
- Resources to connect with life-long learners (1b)
- Methods to seek multiple feedback mechanisms (responses, reactions, comments, trends in data) (1c)
- Interpretation of performance feedback (1c)
- Appropriate pathways to adjust course based on feedback (1c)
- Transferable operations across multiple tools and devices. (1d)
- Strategies to troubleshoot systems and applications. (1d)
- Vocabulary: Learning network (1b)

Essential Questions

- How might I use technology to monitor and adjust my learning goals? (1a)
- How do learners organize resources (people, tools, ideas) for their benefit? (1b)
- What sources will give me the best growth-producing feedback? (1c)
- What do you already know about technology that will help you with this new project? (1d)

Students will be able to...

- 1.a. Articulate personal learning goals, select and manage appropriate technologies to achieve them, and reflect on their successes and areas of improvement in working toward their goals.
- 1.b. Identify and develop online networks within school policy, and customize their learning environments in ways that support their learning, in collaboration with an educator.
- 1.c. Actively seek performance feedback from people, including teachers, and from functionalities embedded in digital tools to improve their learning process, and they select technology to demonstrate their learning in a variety of ways.
- 1.d. Navigate a variety of technologies and transfer their knowledge and skills to learn how to use new technologies.

Digital Citizen

Students will understand that...

- Technology requires safe and responsible behavior and use. (2a, 2b)
- Words and actions are open for interpretation by various audiences. (2a)
- Online actions have permanence. (2a)
- There are consequences of both positive and poor online behavior.(2b)
- Actions have intended and unintended consequences. (2b)
- Giving credit to sources shows respect to the owner/author. (2c)
- Login credentials help protect privacy. (2d)
- Protecting private information promotes online safety. (2d)

Students will know...

- Jeffco's Acceptable Use Policy- JS (2a, 2b)
- Acceptable and unacceptable uses of technology at home and school (2a, 2b)
- District approved digital spaces (2a)
- Strategies for curating a positive online presence (2a)
- Legal restrictions for some online tools (13+ age restrictions) (2b)
- Legal ramifications of unethical & illegal online activities (2b)
- Strategies for positive online interactions and dealing with cyberbullying (2b)
- Strategies to prevent plagiarism, including quotations and paraphrasing (2c)
- Copyright laws and fair use policies (2c)
- Proper citation formats and tools for text, images, and ideas. (2c)
- Means of data collection (e.g. HTTPS, encryption, cookies, viruses) (2d)
- Criteria for strong logins/passwords (2d)
- Vocabulary: digital footprint, (2a) cyberbullying, digital safety (2b) Works Cited, attribution element, source, (2c), password strength, cyber safety, data collection, data management (2d)

Essential Questions

- How does my online identity affect myself and others?(2a)
- What is my personal responsibility as a digital citizen?(2a, 2b)
- How do I know I'm using information in an ethical manner?(2c)
- What is my responsibility for keeping my personal information safe and secure? (2d)

Students will be able to...

- 2.a. Manage their digital identities and reputations within school policy, including demonstrating an understanding of how digital actions are never fully erasable.
- 2.b. Demonstrate and advocate for positive, safe, legal and ethical habits when using technology and when interacting with others online.
- 2.c. Demonstrate and advocate for an understanding of intellectual property with both print and digital media by creating a variety of media products that include appropriate citation and attribution elements.
- 2.d. Demonstrate an understanding of what personal data is and how to keep it private and secure; they also understand the limitations of data management and how data-collection technologies work.

Knowledge Constructor

Students will understand that...

- Good researchers adjust their questions and plans as appropriate. (3a)
- Research requires an organizational framework. (3a)
- Informed decisions regarding resources are based upon considerate evaluations. (3b)
- It's important to consider multiple perspectives before drawing conclusions on a topic. (3b)
- Research demands reading and understanding information from multiple resources and then synthesizing the information into a format that can be shared with others. (3c)
- Effective research aims to solve authentic issues in the world or in the community. (3d)

Students will know...

- Application of appropriate tools for research, organization, and/or sharing ideas (3a, 3b, 3c, 3d)
- Strategies to implement and assess the research process (3a-d)
- Qualities of an authentic research question or hypothesis (3a, 3d)
- A variety of digital informational sources (primary v secondary sources) (3a, 3c)
- Characteristics of effective search terms (3a)
- Strategies to employ evaluation criteria of resources (3b)
- Strategies for curating resources and organizing information (3c)
- Strategies for synthesizing information (3c)
- Vocabulary: Databases, keywords, search terms (3a); Works Cited, clarity, database, bias, plagiarism, relevance, accuracy, credibility (3b)

Essential Questions

- How does questioning guide the research process? (3a)
- Do I passively ingest information or actively evaluate it? (3b)
- How can I organize information and resources to make meaningful connections for others? (3c)
- What role does my research have in pursuing solutions? (3d)

Students will be able to...

- 3.a. Demonstrate and practice the ability to effectively utilize research strategies to locate appropriate digital resources in support of their learning.
- 3.b. Practice and demonstrate the ability to evaluate resources for accuracy, perspective, credibility and relevance.
- 3.c. Locate and collect resources from a variety of sources and organize assets into collections for a wide range of projects and purposes.
- 3.d. Explore real-world issues and problems and actively pursue an understanding of them and solutions for them.

Innovative Designer

Students will understand that...

- Real-world problems require a thoughtful process to develop innovative solutions (4a)
- Choosing the right digital tool depends on the function and possible outcome. (4b)
- Failures can lead to a new improvement of my design. (4c)
- Designing solutions to complex problems requires hard work and perseverance. (4d)

Students will know...

- Relevant design process (4a)
- Real-world problems (4a)
- Reasoning skills and logic to develop solutions (4a)
- A variety of age-appropriate digital tools for creativity and innovation (4b)
- Strategies for evaluating and testing an idea (4c)
- Strategies for working through challenges (4d)
- Vocabulary: risks, constraints (4b) prototype (4c)

Essential Questions

- How might I add my thinking to existing knowledge in order to design something new? (4a)
- What tactics can I use to decide when or how to try a new tool to solve a problem? (4b)
- How might evaluating my mistakes help me improve my design? (4c)
- How can I contribute to solving big problems even if I can't fix the whole thing? (4d)

Students will be able to...

- 4a. Engage in a design process and employ it to generate ideas, create innovative products or solve authentic problems.
- 4b. Select and use digital tools to support a design process and expand their understanding to identify constraints and trade-offs and to weigh risks.
- 4c. Engage in a design process to develop, test and revise prototypes, embracing the cyclical process of trial and error and understanding problems or setbacks as potential opportunities for improvement.
- 4d. Demonstrate an ability to persevere and handle greater ambiguity as they work to solve open-ended problems.

Computational Thinker

Students will understand that...

- Computers can help solve human problems. (5a)
- Data can help us answer questions about our world. (5b)
- Complex problems may require complex solutions. (5c)
- Algorithms are sequences of instructions to achieve goals. (5d)

Students will know...

- District-approved tools (5a-d)
- Strategies to identify and explore problems for computer enabled solutions (5a)
- Compilation skills of appropriate data (self-collected or retrieved) (5b)
- Tools and strategies to organize, manipulate, and represent data sets (5b)
- Strategies to describe and/or support conclusions and solutions (5b)
- Strategies to identify and organize components to prioritize solutions (5c)
- Strategies to interpret algorithms and outcomes (5d)
- Solution-based programming design and development (5d)
- Vocabulary: debug (5c)

Essential Questions

- How have tools changed the way we solve problems? (5a)
- What does data tell me? (5b)
- What patterns do I notice that will help me solve the problem more efficiently? (5c)
- What are the effects on people and society from computing innovations? (5d)

Students will be able to...

- 5.a. Practice defining problems to solve by computing for data analysis, modeling or algorithmic thinking.
- 5.b. Find or organize data and use technology to analyze and represent it to solve problems and make decisions.
- 5.c. Break problems into component parts, identify key pieces and use that information to problem solve.
- 5.d. Demonstrate an understanding of how automation works and use algorithmic thinking to design and automate solutions.

Creative Communicator

Students will understand that...

- Technology provides options for creative and effective communication. (6a)
- Tools can be thoughtfully selected to reach desired outcomes. (6a)
- Original works can be created as a means of personal or group expression. (6b)
- Considering and transforming others' ideas can lead to an innovative and creative product. (6b)
- Intentional choices about visual imagery helps to convey information, emotion, and meaning. (6c)
- Communication requires deliberate considerations of the intended audience. (6d)

Students will know...

- A variety of district approved tools for creativity and expression (6a)
- Responsible methods for creating original and remixed works (6b)
- Various multimedia formats for representations of ideas (6c)
- Considerations for matching media and tools to audience and purpose (6d)
- Vocabulary: visual literacy (6c)

Essential Questions

- Why would I choose one tool over another to communicate? (6a)
- How does my project reflect innovation of thought and creativity? (6b)
- Why do multiple forms of communication matter? (6c)
- How does the audience affect my communication? (6d)

Students will be able to...

- 6.a. Select appropriate platforms and tools to create, share and communicate their work effectively.
- 6.b. Create original works or responsibly repurpose other digital resources into new creative works.
- 6.c. Communicate complex ideas clearly using various digital tools to convey the concepts textually, visually, graphically, etc.
- 6.d. Publish or present content designed for specific audiences and select platforms that will effectively convey their ideas to those audiences.

Global Collaborator

Students will understand that...

- Technology allows us to communicate and collaborate with others both locally and globally.(7a)
- Cultural perspectives influence different points of view. (7a)
- Globally people have a variety of ideas. (7a)
- Consulting people with different beliefs deepens understanding of issues. (7b)
- Roles within a group are dependant upon the group's goal. (7c)
- Working collaboratively allows for greater problem solving. (7c)
- Collaborative solutions can make an impact on problems near and far.(7d)

Students will know...

- District approved digital spaces for expanded collaboration (7a, 7b)
- Cultural perspectives (7a)
- Respectful digital interaction strategies (7a)
- Strategies for building knowledgeable and safe online learning networks (7b)
- Strategies for synthesizing diverse viewpoints (7b)
- Different group member roles and responsibilities (7c)
- Strategies for working collaboratively (7c)
- Strategies for identifying local and global issues (7d)
- Strategies for investigating solutions (7d)

Essential Questions

- How might technology connect me to people to broaden my perspective? (7a)
- Why do other viewpoints matter? (7b)
- How might I advocate for my strengths on the team in order to reach our goal? (7c)
- How can I increase my global awareness in order to make a difference? (7d)

Students will be able to...

- 7.a. Use digital tools to interact with others to develop a richer understanding of different perspectives and cultures.
- 7.b. Use collaborative technologies to connect with others, including peers, experts and community members, to learn about issues and problems or to gain broader perspective.
- 7.c. Determine their role on a team to meet goals, based on their knowledge of technology and content, as well as personal preference.
- 7.d. Select collaborative technologies and use them to work with others to investigate and develop solutions related to local and global issues.