# Technology Plan

## 2021-2025

**Board Approved: June 30, 2021**

## District Mission Statement

The River Valley School District has an obligation to ensure that all River Valley School District students will have equal access to a high-quality education that will allow them to reach their full potential in all career paths that prepare them for the challenges of the 21st century and global economy.

## District Overview

The River Valley School District is located along the scenic U.S. Route 22 corridor in southwestern Pennsylvania, approximately 45 miles east of the City of Pittsburgh. The District encompasses approximately 142 square miles in southern Indiana County and a portion of northern Westmoreland County, making it the second-largest school district in Indiana County and the 2000 Census reported that the District has approximately 16,000 residents.

The River Valley School District serves approximately 1,360 students. River Valley School District comprises Blairsville Elementary School (PreK-5), Saltsburg Elementary School (PreK-5) River Valley Middle School (6-8), River Valley High School (9-12), and the District's administrative offices.

| School | Grades | Enrollment |
|---|---|---|
| River Valley High School | 9-12 | 397 |
| River Valley Middle School | 6-8 | 315 |
| Blairsville Elementary | K-5 | 367 |
| Saltsburg Elementary | K-5 | 227 |

Approximately 46% of the District's students qualify for free or reduced lunch.

## Technology Vision Statement

Students will use technology as an integral tool in their academic development.  Technology will be incorporated throughout the school and will be utilized throughout the curriculum. Faculty and students will use technology for learning enhancement, communications, presentations, information management, and research. Technology will support, extend, and supplement teacher-delivered curriculum content and put learning in the hands of the student. Teachers guide their students to discover, collaborate, and understand the world. Students will be active learners.

## Technology Planning Committee

| | |
|---|---|
| **Philip Martell** | **Superintendent of Schools** |
| **Holly Rougeaux** | **Assistant to the Superintendent, Curriculum & Instruction** |
| **Regina Geesey** | **Assistant to the Superintendent, Student Services** |
| **Elizabeth Pernelli** | **Director of Educational Technology** |
| **Jesse Madden** | **Director of Information Technology** |

## Technology Planning

This document serves as a plan for both short term and long term goals for the use of technology within the River Valley School District. The plan was built around a framework developed by the planning committee to guide data driven decisions and implementation. This plan includes the following:

- Theories of Action and Goals, which reflect the current work of the District and the vision for future work and expectations for teaching, learning and creating a digital learning environment
- The structure for group representation and creation of future technology planning and documentation
- Technology goals outlined below

A needs assessment was conducted to identify student performance outcomes, technology infrastructure, professional development, online assessments, instructional technology, blended learning, ISTE standards, and project management. In turn, planning team members worked with area specialists and building administrators to collaborate on and complete portions of the plan. The group met frequently to discuss the processes, resources, barriers, needs, and strategies needed to fully implement the plan. After the committee's assessment process, goals with measurable targets were developed.

This was accompanied by developing a process to monitor the plan for fidelity of implementation and a framework for comparing the total cost of ownership to the overall return on investment. Additionally, RVSD team members are responsible for ensuring the components of the technology and digital learning plan are integrated in all areas of the curriculum at the district and school level. Building principals and technology coaches will collaboratively manage local plan implementation with support from the District establishing school technology integration teams.

Needs identified by planning team:

A. Student Performance Outcomes and Online Assessments
B. Digital Learning and Technology Infrastructure
C. Professional Development
D. Digital Tools
E. Maker Spaces

## River Valley School District Goals

- Technology Goal # 1: Curriculum Integration and Evolvement
- Technology Goal # 2: Teacher Effectiveness and Professional Development
- Technology Goal # 3: Infrastructure, Hardware, Technical Support and Software
- Technology Goal # 4: Mobile Student-Centered Computing
- Technology Goal # 5: Electronic Resources
- Technology Goal # 6 Innovation
- Technology Goal # 7: Create a Culture of Personalized Learning in Technology
- Technology Goal # 8: Building a Sustainable Business Model

## Goal 1: *Curriculum Integration and Evolvement*

- Using the ISTE Standards and Common Sense Media's Digital Citizenship curriculum, technology will be integrated across K-12. Instructional stakeholders will contribute to the developing and updating technology-integrated curriculum maps and resources. Teachers will regularly integrate technology as defined within their respective curriculum.

| Action | Timeline | Resources |
|---|---|---|
| Provide teachers with ISTE standards and Digital Citizenship curriculum | First In-Service Day of 2021-2022 | Chart of Standards (Appendix A)<br>www.iste.org/standards<br>Digital Citizenship Curriculum<br>www.commonsense.org/education |
| Both ISTE standards and Digital Citizenship curriculum will be integrated into the curriculum | Ongoing<br>Digital Citizenship is being taught in 6th (rotation class) and revisited during computer class in 8th grade. | EdInsight<br>https://edinsight.iu28.org/Blairsville/ |

| Observable Teacher Behaviors | ISTE Standards for Education Leaders |
|---|---|
| Teachers demonstrate awareness and knowledge of their respective technology integrated curriculum. | 5a. Set goals to remain current on emerging technologies for learning, innovations in pedagogy and advancements in the learning sciences. |
| Teachers contribute to their respective curriculum maps to maintain technology integration relevancy. | 5c. Use technology to regularly engage in reflective practices that support personal and professional growth. |
| Teachers demonstrate knowledge of and the use of technological resources and tools. | 2a. Design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity. |
| Teachers demonstrate best pedagogical practices related to technology integration. | 5c. Evaluate and reflect on current research and professional practice on a regular basis to make effective use of existing and emerging digital tools and resources in support of student learning |
| Teachers demonstrate the blending of content, pedagogy, and technology (i.e. integration). | 2a. Design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity 2b. Develop technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning, and assessing their own progress |

| | |
|---|---|
| Teachers develop digital-age learning experiences and assessments. | 2b. Model and promote the frequent and effective use of technology for learning.<br>2c. Provide learner-centered environments equipped with technology and learning resources to meet the individual, diverse needs of all learners. |
| Teachers share and collaborate with colleagues to improve technology integration and teaching and learning. | 1d. Model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments.<br>3b. Collaborate with students, peers, parents, and community members using digital tools and resources to support student success and innovation.<br>5a. Participate in local and global learning communities to explore creative applications of technology to improve student learning. |
| Teachers will promote and model digital citizenship and responsibility throughout their curriculum. | 4a. Advocate, model and teach, safe, legal, and ethical use of digital information and technology including respect for copyright, intellectual property, and the appropriate documentation of sources.<br>4c. Promote and model digital etiquette and responsible social interactions related to the use of technology and information |
| Teachers facilitate student learning and creativity. | 2a. Ensure instructional innovation focused on continuous improvement of digital age learning.<br>2b. Model and promote the frequent and effective use of technology for learning. |

**Evaluation:**

- Bi-annual review of curriculum maps.
- Teacher reflection on performance/goals (embedded within evaluation process).
- Meeting records from curriculum development/review sessions.
- Student reporting on integration of curriculum within the classroom.

## Goal 2: *Teacher Effectiveness and Professional Development*

- Professional Development (PD) will be a top priority for the success of all learners. PD must be integrated within all content areas and grade levels. PD must be ongoing due to the simultaneous learning of how to use technology, the integration of technology in instruction, and the continual emergence of new and improved technologies and practices. PD must be differentiated to address the needs, aptitudes, and styles of adult learners. All staff members will be held accountable for professional learning within a PD structure that engages, encourages, and empowers all learners.

| Action | Timeline | Resources |
|---|---|---|
| Establish a schedule of technology trainings | Annually, before first In-Service Day | Curriculum/Technology Committee<br>Act 48 Planning Team |
| Include technology-related sessions at every In-Service | Every In-Service Day<br>One PD Friday each month | Technology Committee |
| Provide monthly tech newsletter for teachers | Monthly | Technology Integrators |

**Observable Teacher Behaviors:**

- Teachers participate in PD that is based on grade level/content area standards AND technology standards (i.e. "integration").
- Teachers attend, apply and sustain skills/practices learned in ongoing PD.
- Teachers define a purpose and apply action research methodologies when exploring technologies.
- Teachers strive to problem solve and troubleshoot technical issues.
- Teachers collaborate to construct knowledge and share ideas.
- Teachers use technology for inquiry-based learning to foster critical thinking.
- Teachers facilitate and inspire student learning and creativity.
- Teachers design and develop digital age learning experiences and assessments.
- Teachers model digital age work and learning.
- Teachers promote and model digital citizenship and responsibility.

**Observable Student Behaviors:**

- Students demonstrate creativity and innovation using technology.
- Students collaborate and communicate using technology.
- Students conduct research and gather information using technology.
- Students engage in inquiry, project, and problem-based learning.
- Students model digital citizenship and the proper use of technology.

**Evaluation:**

- Needs assessments will be performed to gauge PD needs of the District, schools, administrators, and grade levels/content area teachers.
- Rubrics will be used to assess the technology knowledge and level of integration in teaching and learning.

## Goal 3: *Infrastructure, Hardware, Software and Technical Support*

- The District will provide adequate network access, hardware, software, and technical support to sustain instruction, administrative activities, and professional development. Current technology will be maintained or upgraded as necessary. Outdated technology will be replaced to meet future needs.

| Action | Timeline | Resources |
|---|---|---|
| Develop BYOT policy and encourage use of personally owned devices | 2022-2023 School Year | Board Policy 237 |
| Maintain network infrastructure and wireless access points | Ongoing within 5-year cycle | Network switches and APs obtained with E-Rate Category 2 funds |
| Establish uniform technology tools for each classroom | 2021-2022 School Year with regular revisions | Interactive displays<br>Document cameras<br>Windows PC<br>Teacher Chromebook<br>Supported software list (attached) |

## Goal 4: *Mobile Student-Centered Computing*

- All learners will have access to technology in an anytime, anywhere, one-to-one computing environment. A one-to-one computing environment encourages creativity and innovation, facilitates communication and collaboration, supports research and access to digital content, increases critical thinking and problem solving opportunities, and promotes the proper use of information and technology.

| Action | Timeline | Resources |
|---|---|---|
| Provide K-3 students with touchscreen Chromebooks | Annually in Kindergarten, see refresh cycle on page 13 | Approximately 414 Chromebooks<br>GFB $ |
| Provide 4-12 students with Chromebooks | Annually in grades 4 and 8, see refresh cycle on page 13 | Approximately 946 Chromebooks<br>GFB $ |

| | | |
|---|---|---|
| Engage students through online learning management system | 2021-2022 School Year with teacher/student involvement daily | Canvas LMS https://b-ssd.instructure.com/ |

**Observable Teacher Behaviors:**

- Teachers support anytime, anywhere access to digital resources and technology tools.
- Teachers encourage creative thinking and innovation when constructing knowledge.
- Teachers facilitate communication and collaboration in virtual environments.
- Teachers regularly facilitate student access to digital content and multimedia.
- Teachers capitalize on digital resources to promote critical thinking and problem solving.
- Teachers model the proper use of information and technology.

**Observable Student Behaviors:**

- Students access digital resources and technology tools when needed.
- Students are motivated to think and work creatively and to be innovative in constructing knowledge and solutions to problems.
- Students communicate and collaborate with peers in virtual environments.
- Students access digital content for informational and research purposes.
- Students utilize technology to think critically and solve problems.
- Students demonstrate the proper use of information and technology to construct and demonstrate knowledge.

**Evaluation:**

- Survey of feedback from stakeholders (parents, students, and staff).
- Statistics of device usage and network access.

## Goal 5: *Electronic Resources*

- Electronic resources and tools to create such resources must be readily available to support a 21st century teaching and learning environment. As the widespread use of the Internet has informed and connected people, the availability of electronic resources will support the collaborative component of teaching and learning. Electronic resources must be readily available for all learners to access the increasing wealth of on-demand information. Also, technology tools for the creation of electronic resources must be readily available for all learners. Creating and sharing resources fosters a collaborative learning environment.

| Action | Timeline | Resources |
|---|---|---|
| Continue implementation of Google Workspace for Education | Ongoing | Google Workspace for Education |
| Develop and implement curriculum through learning management system | 2021-2022 School Year, updated annually | Canvas |
| Subscribe to electronic databases | Ongoing | EBSCOhost |
| Provide access to eBooks | Ongoing | OverDrive, Open eBooks |
| Provide access to all e-resources/platforms | Ongoing | Nearpod, Kami, etc. |

**Observable Teacher Behaviors:**

- Teachers regularly access, create, and manage digital resources for teaching and learning.
- Teachers participate in a collaborative environment with colleagues across the District, county, state, nation, etc.
- Teachers increasingly rely on digital resources more than paper resources.

**Observable Student Behaviors:**

- Students access electronic resources for information and research at any time, from anywhere.
- Students store and retrieve the information they have gathered while researching.
- Students access and interact with digital books, textbooks, and class resources (provided by the District and/or created by learners).
- Students access course management modules or online versions of their classrooms at any time, from anywhere.
- Students use electronic tools to build electronic knowledge bases that are accessible at anytime, from anywhere.

**Evaluation:**

- Gathering feedback on availability, ease of use, and impact on student achievement.
- Monitoring level of tools used in the creation of resources.

## Goal 6: *Innovation*

- Innovation in the best practices of technology integration will be supported and encouraged. Cultivating and maintaining an environment that provides structural support to be creative and innovative contributes to
    - Improving best practices.
    - Collegial learning across the District.

- Creating an opportunity for action research and/or evaluate through differentiated supervision models
- Incentives supported for professional growth and learning.

| Action | Timeline | Resources |
|---|---|---|
| Collect feedback from students on which methods work | 2021-2022 School Year, updated annually | Google Forms survey |
| Develop and support a network for innovative practices to be cataloged and shared | Immediate implementation, with PLCs happening on a monthly basis | PLCs<br>Technology Integrators |

**Observable Teacher Behaviors:**

- Teachers explore, pioneer, and share approaches, tools and methods to improve teaching and learning.
- Teachers strive to engage, enhance, and empower students through technology.

**Observable Student Behaviors:**

- Students seek out new methods of critical thinking and expression of learning.
- Students contribute to the exploration, pioneering, and sharing of new approaches, tools, and methods for learning.

**Observable Administration Behaviors**

- Continuing to scale innovation at the classroom level through the District's Technology Committee and Director of Educational Technology
- Aligning RVSD staff resources to support the changing needs of our students and teachers
- Redesigning work spaces to support new practices in learning and teaching
- Celebrating student and staff success

**Evaluation:**

- Innovative practices will be evaluated for the impact on enhancing instruction, engaging students, and empowering students to take pride of ownership in learning.

## Goal 7: *Create a Culture of Personalized Learning in Technology*

- The strategic objectives of the River Valley School District will be met through technology solutions that support the teaching and learning needs of staff and students through the effective deployment of district and community resources. Two specific strategies have contributed significantly to preparing the District for the successful integration of technology over the long term:

1. A trust-relationship between the RVSD teachers and the technology team focused on authentic student engagement and personalized learning, supported by technology.
2. The development of a phased approach to address technical infrastructure needs.

- The following strategic objectives (bolded) were identified to focus the work captured in this technology plan:
  1. Achieve, measure, and report **growth for all students** through authentic student engagement
  2. Prepare for **college and career readiness** through the development of rigorous subject area/secondary course content aligned to standards and communication, collaboration, critical thinking, and creativity (4 C's) skills
  3. **Establish a culture of innovation** through the scaling of innovative teaching and learning practices, expert support and training, and flexible learning and collaboration spaces
  4. Provide adequate resources, support, and infrastructure to facilitate learning and to **build a sustainable business model**

**Authentically Engaged RVSD Students**

- The vision for student learning is to authentically and deeply engage every child in his or her learning. This is accomplished through a number of specific conditions and factors that have been attributed to engaging learning environments.While teacher behavior is important,what matters most are the learning conditions that students experience that are designed to prepare students for college and careers.These conditions are supported and enhanced through the effective use of technology.

**Observable Teacher Behaviors:**

- Develop skills and competencies necessary to meet the ISTE Standards for Teachers
- Begin to integrate design principles and student devices into the classroom through thoughtful planning, collection of feedback, reflection, and continuous improvement
- Leverage Google Workspace, Canvas LMS, and other technology tools to foster and nurture students' content area knowledge ability to communicate, be creative, think critically, and collaborate (the 4 C's)
- Support students in their work towards meeting the ISTE Standards for Students, to include reporting out on grade level expectations
- Develop a communications plan for students and parents to develop understanding of the authentically engaged classroom and to report student progress

**Administrator Expectations:**

- Develop skills and competencies necessary to meet the ISTE Standards for Education Leaders

- Establish a plan to scale authentically engaged classrooms across the school to include parent and student communication
- Prepare and equip staff for the successful integration of devices and personalized learning applications through professional development, peer observations, and clear expectations
- Model design principles to authentically engage staff in professional learning experiences (flexible pace, blended learning, proficiency based progress)
- Share and celebrate authentically engaged students and teachers using school communication tools (newsletter, Twitter, Remind, etc)

**Observable Student Behaviors:**

● Develop skills and competencies necessary to meet the ISTE Standards for Students
● Assume ownership of learning demonstrated through engagement, voice and choice,seeking resources, growing independence, with an understanding of outcomes and expectations
● Capture growth and progress towards learning outcomes through an electronic portfolio
● Flexibly utilize district and personal technology devices to meet learning outcomes

**Evaluation:**

Personalizing Learning with Technology
Key outcomes of RVSD authentic student engagement learning environments governed by the design principles will result in the consistent presence of these elements in every classroom.
● Purposeful learning
● Learner efficacy
● Ownership for learning
● Flexible pace
● Learner voice infused
● Learner choice presented
● Learners serve as resources for learning
● Space for learning flexibility
● Commitment focus
● Collaboration
● Technology supported
● Growing learning independence

## Goal 8: *Building a Sustainable Business Model*

- Ongoing access to technology for students must be provided across the curriculum in a sustainable and financially responsible manner.
    - Devices will be placed on an upgrade cycle to ensure teachers and students always have current learning tools.
    - Purchases will be divided across multiple years to keep spending even and predictable.

| Action | Timeline | Resources |
|---|---|---|
| Refresh devices on a regular cycle | Staggered, years 1-4. Ongoing from year 4. | Existing General Fund Budget |
| Include device costs in budget planning | Ongoing | Existing General Fund Budget |
| Seek grant funding to offset incurred costs | Ongoing | Professional grant writing services |

**Student Devices**

- Refresh of devices will be staggered over the initial four years of the plan. All devices will be replaced every four years and the cycle will repeat. Students will be encouraged to purchase their device upon completion of their senior year. This is to ensure older devices are purged to provide room for new devices.

| | Touchscreen | | | | Non-Touchscreen | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **21-22** | Ⓚ | 1 | 2 | 3 | ④ | 5 | 6 | 7 | ⑧ | 9 | 10 | 11 | 12 |
| **22-23** | Ⓚ | 1 | 2 | 3 | ④ | 5 | 6 | 7 | ⑧ | 9 | 10 | 11 | 12 |
| **23-24** | Ⓚ | 1 | 2 | 3 | ④ | 5 | 6 | 7 | ⑧ | 9 | 10 | 11 | 12 |
| **24-25** | Ⓚ | 1 | 2 | 3 | ④ | 5 | 6 | 7 | ⑧ | 9 | 10 | 11 | 12 |
| **25-26** | Ⓚ | 1 | 2 | 3 | ④ | 5 | 6 | 7 | ⑧ | 9 | 10 | 11 | 12 |

**Network Infrastructure**

- E-Rate Category-2 funding will be utilized for internal network upgrades. Individual schools are eligible for E-rate discounts on pre-discount purchases of up to $150 per student over a five-year budget. Our district's discount rate is between 80% and 85%.

## Appendix A

### ISTE STANDARDS FOR EDUCATION LEADERS


### 1. Equity and Citizenship Advocate

**Leaders use technology to increase equity, inclusion, and digital citizenship practices. Education leaders:**

a. Ensure all students have skilled teachers who actively use technology to meet student learning needs.
b. Ensure all students have access to the technology and connectivity necessary to participate in authentic and engaging learning opportunities.
c. Model digital citizenship by critically evaluating online resources, engaging in civil discourse online and using digital tools to contribute to positive social change.
d. Cultivate responsible online behavior, including the safe, ethical and legal use of technology.

### 2. Visionary Planner

**Leaders engage others in establishing a vision, strategic plan and ongoing evaluation cycle for transforming learning with technology. Education leaders:**

a. Engage education stakeholders in developing and adopting a shared vision for using technology to improve student success, informed by the learning sciences.
b. Build on the shared vision by collaboratively creating a strategic plan that articulates how technology will be used to enhance learning.

c. Evaluate progress on the strategic plan, make course corrections, measure impact and scale effective approaches for using technology to transform learning.
d. Communicate effectively with stakeholders to gather input on the plan, celebrate successes and engage in a continuous improvement cycle.
e. Share lessons learned, best practices, challenges and the impact of learning with technology with other education leaders who want to learn from this work.

### 3. Empowering Leader

**Leaders create a culture where teachers and learners are empowered to use technology in innovative ways to enrich teaching and learning. Education leaders:**

a. Empower educators to exercise professional agency, build teacher leadership skills and pursue personalized professional learning.
b. Build the confidence and competency of educators to put the ISTE Standards for Students and Educators into practice.
c. Inspire a culture of innovation and collaboration that allows the time and space to explore and experiment with digital tools.
d. Support educators in using technology to advance learning that meets the diverse learning, cultural, and social-emotional needs of individual students.
e. Develop learning assessments that provide a personalized, actionable view of student progress in real time.

### 4. Systems Designer

**Leaders build teams and systems to implement, sustain and continually improve the use of technology to support learning. Education leaders:**

a. Lead teams to collaboratively establish robust infrastructure and systems needed to implement the strategic plan.
b. Ensure that resources for supporting the effective use of technology for learning are sufficient and scalable to meet future demand.
c. Protect privacy and security by ensuring that students and staff observe effective privacy and data management policies.
d. Establish partnerships that support the strategic vision, achieve learning priorities and improve operations.

### 5. Connected Learner

**Leaders model and promote continuous professional learning for themselves and others. Education leaders:**

a. Set goals to remain current on emerging technologies for learning, innovations in pedagogy and advancements in the learning sciences.
b. Participate regularly in online professional learning networks to collaboratively learn with and mentor other professionals.

c. Use technology to regularly engage in reflective practices that support personal and professional growth.
d. Develop the skills needed to lead and navigate change, advance systems and promote a mindset of continuous improvement for how technology can improve learning.

## ISTE STANDARDS FOR STUDENTS


### 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. Students:**

a. articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.
b. build networks and customize their learning environments in ways that support the learning process
c. use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.
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

### 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 students:**

a. cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.
b. engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.
c. demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.
d. manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

### 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. Students:**

a. plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.
b. evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.
c. curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.
d. build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.

### 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. Students:**

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

### 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. Students:**

a. formulate problem definitions suited for technology assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.

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.
c. break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.
d. understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

### 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. Students:**

a. choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.
b. create original works or responsibly repurpose or remix digital resources into new creations.
c. communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.
d. publish or present content that customizes the message and medium for their intended audiences.

### 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. Students:**

a. use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.
b. use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.
c. contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.
d. explore local and global issues and use collaborative technologies to work with others to investigate solutions.

## ISTE STANDARDS FOR EDUCATORS


### 1. Learner

**Educators continually improve their practice by learning from and with others and exploring proven and promising practices that leverage technology to improve student learning. Educators:**

a. Set professional learning goals to explore and apply pedagogical approaches made possible by technology and reflect on their effectiveness.
b. Pursue professional interests by creating and actively participating in local and global learning networks.
c. Stay current with research that supports improved student learning outcomes, including findings from the learning sciences.

### 2. Leader

**Educators seek out opportunities for leadership to support student empowerment and success and to improve teaching and learning. Educators:**

a. Shape, advance and accelerate a shared vision for empowered learning with technology by engaging with education stakeholders.

b. Advocate for equitable access to educational technology, digital content and learning opportunities to meet the diverse needs of all students.
c. Model for colleagues the identification, exploration, evaluation, curation and adoption of new digital resources and tools for learning.

### 3. Citizen

**Educators inspire students to positively contribute to and responsibly participate in the digital world. Educators:**

a. Create experiences for learners to make positive, socially responsible contributions and exhibit empathetic behavior online that build relationships and community.
b. Establish a learning culture that promotes curiosity and critical examination of online resources and fosters digital literacy and media fluency.
c. Mentor students in the safe, legal and ethical practices with digital tools and the protection of intellectual rights and property.
d. Model and promote management of personal data and digital identity and protect student data privacy

### 4. Collaborator

**Educators dedicate time to collaborate with both colleagues and students to improve practice, discover and share resources and ideas, and solve problems. Educators:**

a. Dedicate planning time to collaborate with colleagues to create authentic learning experiences that leverage technology.
b. Collaborate and co-learn with students to discover and use new digital resources and diagnose and troubleshoot technology issues.
c. Use collaborative tools to expand students' authentic, real world learning experiences by engaging virtually with experts, teams and students, locally and globally.
d. Demonstrate cultural competency when communicating with students, parents and colleagues and interact with them as co-collaborators in student learning

### 5. Designer

**Educators design authentic, learner-driven activities and environments that recognize and accommodate learner variability. Educators:**

a. Use technology to create, adapt and personalize learning experiences that foster independent learning and accommodate learner differences and needs.
b. Design authentic learning activities that align with content area standards and use digital tools and resources to maximize active, deep learning.
c. Explore and apply instructional design principles to create innovative digital learning environments that engage and support learning.

## 6. Facilitator

**Educators facilitate learning with technology to support student achievement of the 2016 ISTE Standards for Students. Educators:**

a. Foster a culture where students take ownership of their learning goals and outcomes in both independent and group settings.
b. Manage the use of technology and student learning strategies in digital platforms, virtual environments, hands-on makerspaces or in the field.
c. Create learning opportunities that challenge students to use a design process and computational thinking to innovate and solve problems.
d. Model and nurture creativity and creative expression to communicate ideas, knowledge or connections

## 7. Analyst

**Educators understand and use data to drive their instruction and support students in achieving their learning goals. Educators:**

a. Provide alternative ways for students to demonstrate competency and reflect on their learning using technology.
b. Use technology to design and implement a variety of formative and summative assessments that accommodate learner needs, provide timely feedback to students and inform instruction.
c. Use assessment data to guide progress and communicate with students, parents and education stakeholders to build student self-direction.