



21st Century Learning at AAS

Introduction & Beliefs

The Anglo-American School of Moscow Information and Communications Technology (ICT) and Library are committed to empowering “each student to achieve individual academic and holistic excellence” (**AAS Mission, 2012**). AAS implements ICT and Library resources to realize the **AAS Vision** by:

- **creating “dynamic and caring learning environments”** (technology-rich classrooms and multi-use spaces; class-size computer labs; flexible learning environments using wireless devices and multimedia);
- **using “current, relevant technologies”** (high-speed Internet, wireless, and network connectivity; an array of instructional web tools and content; interactive digital display devices; leading-edge computer hardware, handheld devices, and peripherals; industry-standard productivity and multimedia software;
- **fostering “innovative and effective instructional strategies”** which build **“collaborative relationships”** (using our core ICT tools such as Moodle, Google Drive/Docs, blogs, Outlook email, Microsoft Lync, NetClassroom, and forums);
- and **“drawing upon the rich resources of our diverse community”**.

We believe in:

- Ubiquitous Technology: enabled-learning at our fingertips--Digital devices are good things!
- Accessing information seamlessly and interactively for all purposes--research, information, knowledge, and literacy;
- Proximity-based, dynamic learning environments;
- Support for users--ubiquitous support as part of what we normally do.

At each grade level, students demonstrate “the competencies and attitudes of a 21st Century Learner” (**AAS Student Outcomes, 2012**), in curricularly integrated, authentic, natural ways that allow students to personalize their learning with the help of technology-skilled educators. AAS 21st Century Learner Outcomes follow the International Society for Technology in Education *National Educational Technology Standards and Performance Indicators for Students* ([ISTE NETS-S v. 2007](#), v. 2012 forthcoming). ICT Integrationists and Librarians collaborate with core and specialist teachers to design, implement, and assess technology integrated learning opportunities that ensure students the opportunity to demonstrate mastery of NETS-S grade level performance indicators. NETS-S are aligned in AAS curricular documentation at all levels, and assessment is integrated into instructional units.

21st Century Skills in ES, MS, HS Divisions

The Elementary School PK-5 ICT and Library model is based upon the IB PYP Technology framework in which collaboratively developed integrated projects support PYP Units of Inquiry (UOI), Learner Profiles, and Transdisciplinary Skills. Students generally attend weekly ICT and Library sessions, and classroom teachers use mobile laptops and additional computer lab times, to mobilize ICT and Library resources in support of UOI and Programme of Inquiry (POI) goals. ICT Integrationists and Librarians collaborate and co-teach with classroom teachers at each stage of UOI/POI process. An iPad pilot program is underway in the younger Elementary School grades (K-2) to enhance touchscreen-based “hands-on” 21st Century learning for your youngest learners. An emerging “Bring Your Own Device” (BYOD) approach is also growing in the Elementary School, with students bringing personal tablets, laptops, and other devices to further personalize and enhance their learning experiences.



Middle School ICT uses a ubiquitous technology approach in which ICT is embedded in everyday practice to support core and specialist class curricula as well as student initiated learning. ICT Integrationists and Librarians work with teachers and administrators to ensure that students the opportunity to master grade level NETS-S performance indicators. Grade 6 students attend a nine-week ICT course which focuses upon core ICT skills and understandings from the NETS-S. Many Middle School electives give student opportunities to utilize ICT to enhance their learning. We have a developing “Bring Your Own Device” (BYOD) program and in 2012-13 encourage students to use personal technology to support their learning. We also provide access to school owned devices including iPads, iPods, laptops, and desktop computers.

In High School, AAS also uses a ubiquitous technology approach in which ICT is embedded in everyday practice to support core and specialist class curricula as well as student initiated learning. ICT Integrationists and Librarians work with teachers and administrators to ensure that students the opportunity to master grade level NETS-S performance indicators. This approach is in line with our Grade 11 and 12 IB Diploma curriculum. Specialized ICT elective courses are offered to further student learning in ICT-specific contexts. High School students are required to complete one ICT course or credit for graduation, or demonstrate equivalent achievement of Grade 9-12 ICT performance indicators. Recent course offerings in the High School have included:

- Publications-Graphic Design, Yearbook, Video Production
- Web Design and Programming
- IB Information Technology in a Global Society (ITGS)
- IB Computer Science

High School students regularly use a variety of technology resources in their learning at AAS, including productivity applications, digital display technologies, multimedia production hardware and software, data probes, and a wide array of web resources. High School also has a developing “Bring Your Own Device” (BYOD) program and in 2012-13 we encourage students to use personal technology to support their learning. We also provide access to school owned devices including iPads, iPods, laptops, and desktop computers.

Technology Access—Computers, Display & Peripherals, Wireless, Online Resources

AAS has an instructional computer to student ratio of 1:3 for Grades 1-12, supported by an emerging “Bring Your Own Device” (BYOD) strategy that is quickly putting student-owned technology devices to work here at school. Technology facilities include four class-size computer labs, several laptop mobile labs, mobile iPad labs, and student desktop computers, as well as several strategically placed desktop computer clusters located in targeted areas. These arrangements allow students and teachers access to computers at virtually any given time and for any given subject during the school day.

AAS classrooms are also equipped with integrated instructional technology display devices--SMART Board projector-whiteboards. Other instructional technology peripherals include iPad Touch devices, digital cameras, HD camcorders, flipcams, scanners, printers, MP3 recorders, and other digital devices all available for teachers to integrate into their instructional practices.



AAS's high-speed network enables students and staff to access information and files from any networked computer inside the school, as well as off-campus access. The AAS wireless network allows students to use personal laptops, tablets, and other personal technology items (according to AAS Acceptable Use Policy rules) at AAS as part of the BYOD program, and with the addition of laptop mobile labs, this will enhance the flexible learning environment AAS.

AAS is now using our "Penguin Portal" web interface as the backbone of our AAS online learning community. The Penguin Portal includes NetClassroom, our online course management system (CMS) for Grades 6-12. NetClassroom is used for attendance, to post grades and progress reports, track student information, and is accessed regularly by students and parents. AAS also uses Moodle to support development of virtual learning environments (VLEs) in Grades 6-12, and for some resources in the Elementary grades. AAS students in Grade 6-12 use Microsoft Lync to enhance collaboration and communication, and students in Grades 4-12 use our AAS Google Apps Domain for cloud-based data storage and sharing, productivity, communication, and collaboration (i.e., Google Drive and Blogger), as well as Microsoft Outlook email to complete our blended-learning approach.

Future 21st Century plans for AAS include an expansion of BYOD throughout the school, increased cloud-based, blended-learning opportunities for students using our Penguin Portal, Moodle, and Google Apps, all resulting in more ubiquitous technology at our students' fingertips. This is an exciting time to be a student, parent, or teacher at AAS!

The ISTE National Educational Technology Standards (NETS-S) and Performance Indicators for Students

1. Creativity and Innovation

Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students:

- a. apply existing knowledge to generate new ideas, products, or processes.
- b. create original works as a means of personal or group expression.
- c. use models and simulations to explore complex systems and issues.
- d. identify trends and forecast possibilities.

2. Communication and Collaboration

Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. Students:

- a. interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
- b. communicate information and ideas effectively to multiple audiences using a variety of media and formats.
- c. develop cultural understanding and global awareness by engaging with learners of other cultures.
- d. contribute to project teams to produce original works or solve problems.

3. Research and Information Fluency

Students apply digital tools to gather, evaluate, and use information. Students:

- a. plan strategies to guide inquiry.
- b. locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
- c. evaluate and select information sources and digital tools based on the appropriateness to specific tasks.
- d. process data and report results.

4. Critical Thinking, Problem Solving, and Decision Making

Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. Students:

- a. identify and define authentic problems and significant questions for investigation.
- b. plan and manage activities to develop a solution or complete a project.
- c. collect and analyze data to identify solutions and/or make informed decisions.
- d. use multiple processes and diverse perspectives to explore alternative solutions.

5. Digital Citizenship

Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. Students:

- a. advocate and practice safe, legal, and responsible use of information and technology.
- b. exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.
- c. demonstrate personal responsibility for lifelong learning.
- d. exhibit leadership for digital citizenship.

6. Technology Operations and Concepts

Students demonstrate a sound understanding of technology concepts, systems, and operations. Students:

- a. understand and use technology systems.
- b. select and use applications effectively and productively.
- c. troubleshoot systems and applications.
- d. transfer current knowledge to learning of new technologies.

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AAS 21st Century Learning Standards & Benchmarks, PK-2 (Ages 4–8) The following experiences with technology and digital resources are examples of learning activities in which students might engage during PK-Grade 2 (Ages 4-8):

Standards ISTE NETS FOR STUDENTS 2007	Benchmarks: ISTE NETS FOR STUDENTS 2007	Performance Indicators: Adapted from NETS FOR STUDENTS 2007 PROFILES
1. Creativity and Innovation Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.	a. apply existing knowledge to generate new ideas, products, or processes.	Illustrate and communicate original ideas and stories using digital tools and media-rich resources. (1a, 1b)
	b. create original works as a means of personal or group expression.	
	c. use models and simulations to explore complex systems and issues.	Use simulations and graphical organizers to explore and depict patterns of change or growth such as the life cycles of plants and animals. (1a, 1c, 1d)
	d. identify trends and forecast possibilities.	Identify, research, and collect data on a curricular problem using digital resources and present a developmentally appropriate solution. (1a, 1c, 1d)
2. Communication and Collaboration Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.	a. interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.	Illustrate and communicate original ideas and stories using digital tools and media-rich resources. (2a, 2b)
	b. communicate information and ideas effectively to multiple audiences using a variety of media and formats.	
	c. develop cultural understanding and global awareness by engaging with learners of other cultures.	In a collaborative work group, use a variety of technologies to produce a digital presentation or product in a curriculum area. (2c, 2d)
	d. contribute to project teams to produce original works or solve problems.	
3. Research and Information Fluency Students apply digital tools to gather, evaluate, and use information.	a. plan strategies to guide inquiry.	Use simulations and graphical organizers to explore and depict patterns of change or growth such as the life cycles of plants and animals. (3a, 3b, 3c, 3d)
	b. locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.	Find and evaluate information related to a current or historical person or event using digital resources. (3b, 3c)
	c. evaluate and select information sources and digital tools based on the appropriateness to specific tasks.	
	d. process data and report results.	Identify, research, and collect data on a curricular problem using digital resources and present a developmentally appropriate solution. (1a, 1c, 1d)

Standards <u>ISTE NETS FOR STUDENTS 2007</u>	Benchmarks: <u>ISTE NETS FOR STUDENTS 2007</u>	Performance Indicators: Adapted from <u>NETS FOR STUDENTS 2007 PROFILES</u>
4. Critical Thinking, Problem Solving, and Decision Making Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.	a. identify and define authentic problems and significant questions for investigation.	Use simulations and graphical organizers to explore and depict patterns of change or growth such as the life cycles of plants and animals. (4a, 4b, 4c, 4d)
	b. plan and manage activities to develop a solution or complete a project.	Independently apply digital tools and resources to address a variety of tasks and problems. (4a, 4b, 4c, 4d)
	c. collect and analyze data to identify solutions and/or make informed decisions.	Identify, research, and collect data on a curricular problem using digital resources and present a developmentally appropriate solution. (1a, 1c, 1d)
	d. use multiple processes and diverse perspectives to explore alternative solutions.	
5. Digital Citizenship Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.	a. advocate and practice safe, legal, and responsible use of information and technology.	Demonstrate safe and cooperative use of technology. (5a, 5b, 5d)
	b. exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.	<i>Demonstrate an age-appropriate understanding of the behavioral and ethical guidelines of the Acceptable Use Policy (AUP), using the IB Learner Profile attributes PYP Attitudes. (AAS specific Performance Indicator) (5a, 5d)</i>
	c. demonstrate personal responsibility for lifelong learning.	
	d. exhibit leadership for digital citizenship.	
6. Technology Operations and Concepts Students demonstrate a sound understanding of technology concepts, systems, and operations.	a. understand and use technology systems.	Communicate about technology using developmentally appropriate and accurate terminology. (6a)
	b. select and use applications effectively and productively.	Demonstrate the ability to navigate in virtual environments such as electronic books, simulation software, and Web sites. (6a, 6b, 6c, 6d)
	c. troubleshoot systems and applications.	Independently apply digital tools and resources to address a variety of tasks and problems. (6a, 6b, 6c, 6d)
	d. transfer current knowledge to learning of new technologies.	Engage in learning activities with learners from multiple cultures through e-mail and other electronic means. (6a, 6b, 6c, 6d) Meet grade level keyboarding/touch typing expectations(6b)

AAS 21st Century Learning Standards & Benchmarks, Gr. 3-5 (Ages 8-11): The following experiences with technology and digital resources are examples of learning activities in which students might engage during Gr. 3-5 (Ages 8-11):

Standards ISTE NETS FOR STUDENTS 2007	Benchmarks: ISTE NETS FOR STUDENTS 2007	Performance Indicators: Adapted from NETS FOR STUDENTS 2007 PROFILES
1. Creativity and Innovation Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.	a. apply existing knowledge to generate new ideas, products, or processes.	Produce a media-rich digital story about a curricular topic based on digital research and first-person interviews (1,2,3,4)
	b. create original works as a means of personal or group expression.	Use digital-imaging technology to modify or create works of art for use in a digital presentation. (1,2,6)
	c. use models and simulations to explore complex systems and issues.	Select and apply digital tools to collect, organize, and analyze data to evaluate theories or test hypotheses. (1,3,4,6)
	d. identify trends and forecast possibilities.	Conduct science experiments using digital instruments and measurement devices. (1,4,6)
2. Communication and Collaboration Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.	a. interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.	Produce a media-rich digital story about a curricular topic based on digital research and first-person interviews (1,2,3,4)
	b. communicate information and ideas effectively to multiple audiences using a variety of media and formats.	Use digital-imaging technology to modify or create works of art for use in a digital presentation. (1,2,6)
	c. develop cultural understanding and global awareness by engaging with learners of other cultures.	Conceptualize, guide, and manage individual or group learning projects using digital planning tools with teacher support. (2,4,6)
	d. contribute to project teams to produce original works or solve problems.	
3. Research and Information Fluency Students apply digital tools to gather, evaluate, and use information.	a. plan strategies to guide inquiry.	Produce a media-rich digital story about a curricular topic based on digital research and first-person interviews (1,2,3,4)
	b. locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.	Identify and investigate a global issue and generate possible solutions using digital tools and resources (3,4)
	c. evaluate and select information sources and digital tools based on the appropriateness to specific tasks.	Recognize bias in digital resources while researching an environmental issue with guidance from the teacher. (3,4)
	d. process data and report results.	Select and apply digital tools to collect, organize, and analyze data to evaluate theories or test hypotheses. (1,3,4,6)

Standards <u>ISTE NETS FOR STUDENTS 2007</u>	Benchmarks: <u>ISTE NETS FOR STUDENTS 2007</u>	Performance Indicators: Adapted from <u>NETS FOR STUDENTS 2007 PROFILES</u>
<p>4. Critical Thinking, Problem Solving, and Decision Making Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.</p>	a. identify and define authentic problems and significant questions for investigation.	Produce a media-rich digital story about a curricular topic based on digital research and first-person interviews (1,2,3,4)
	b. plan and manage activities to develop a solution or complete a project.	Identify and investigate a global issue and generate possible solutions using digital tools and resources (3,4) Conceptualize, guide, and manage individual or group learning projects using digital planning tools with teacher support. (2,4,6)
	c. collect and analyze data to identify solutions and/or make informed decisions.	Recognize bias in digital resources while researching curricular issue with guidance from the teacher. (3,4) Conduct science experiments using digital instruments and measurement devices. (1,4,6)
	d. use multiple processes and diverse perspectives to explore alternative solutions.	Select and apply digital tools to collect, organize, and analyze data to evaluate theories or test hypotheses. (1,3,4,6) Apply previous knowledge of digital technology operations to analyze and solve current hardware and software problems. (4,6)
<p>5. Digital Citizenship Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.</p>	a. advocate and practice safe, legal, and responsible use of information and technology.	Practice injury prevention by applying ergonomic strategies when using technology. (5)
	b. exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.	<i>Demonstrate an age-appropriate understanding of the behavioral and ethical guidelines of the Acceptable Use Policy (AUP), using the IB Learner Profile attributes PYP Attitudes. (AAS specific Performance Indicator) (5a, 5d)</i>
	c. demonstrate personal responsibility for lifelong learning.	
	d. exhibit leadership for digital citizenship.	Debate the effect of existing and emerging technologies on individuals, society, and the global community. (5,6)
<p>6. Technology Operations and Concepts Students demonstrate a sound understanding of technology concepts, systems, and operations.</p>	a. understand and use technology systems.	Use digital-imaging technology to modify or create works of art for use in a digital presentation. (1,2,6)
	b. select and use applications effectively and productively.	
	c. troubleshoot systems and applications.	
	d. transfer current knowledge to learning of new technologies.	Select and apply digital tools to collect, organize, and analyze data to evaluate theories or test hypotheses. (1,3,4,6) Conduct science experiments using digital instruments and measurement devices. (1,4,6) Apply previous knowledge of digital technology operations to analyze and solve current hardware and software problems. (4,6) Debate the effect of existing and emerging technologies on individuals, society, and the global community. (5,6) Meet grade level keyboarding/touch typing expectations (6b)

AAS 21st Century Learning Standards & Benchmarks, Gr. 6-8 (Ages 11-14) The following experiences with technology and digital resources are examples of learning activities in which students might engage during Gr. 6-8 (Ages 11-14):

Standards ISTE NETS FOR STUDENTS 2007	Benchmarks: ISTE NETS FOR STUDENTS 2007	Performance Indicators: Adapted from NETS FOR STUDENTS 2007 PROFILES
1. Creativity and Innovation Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.	a. apply existing knowledge to generate new ideas, products, or processes.	Create original animations or videos documenting school, community, local, or global events. (1,2,6) Integrate a variety of file types to create and illustrate a document or presentation. (1,6)
	b. create original works as a means of personal or group expression.	
	c. use models and simulations to explore complex systems and issues.	Describe and illustrate a content-related concept or process using a model, simulation, or concept-mapping software. (1,2)
	d. identify trends and forecast possibilities.	Gather data, examine patterns, and apply information for decision making using digital tools and resources.(1,4)
2. Communication and Collaboration Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.	a. interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.	Create original animations or videos documenting school, community, local, or global events. (1,2,6)
	b. communicate information and ideas effectively to multiple audiences using a variety of media and formats.	Participate in a cooperative learning project in an online learning community. (2)
	c. develop cultural understanding and global awareness by engaging with learners of other cultures.	Use collaborative electronic authoring tools to explore common curriculum content from multiple perspectives with other learners. (2,3,4,5)
	d. contribute to project teams to produce original works or solve problems.	
3. Research and Information Fluency Students apply digital tools to gather, evaluate, and use information.	a. plan strategies to guide inquiry.	Evaluate digital resources to determine the credibility of the author and publisher and the timeliness and accuracy of the content. (3)
	b. locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.	Select and use the appropriate tools and digital resources to accomplish a variety of tasks and to solve problems. (3,4,6)
	c. evaluate and select information sources and digital tools based on the appropriateness to specific tasks.	Use collaborative electronic authoring tools to explore common curriculum content from multiple perspectives with other learners. (2,3,4,5)
	d. process data and report results.	Employ data-collection technology such as probes, handheld devices, and geographic mapping systems to gather, view, analyze, and report results for content-related problems. (3,4,6)

Standards <u>ISTE NETS FOR STUDENTS 2007</u>	Benchmarks: <u>ISTE NETS FOR STUDENTS 2007</u>	Performance Indicators: Adapted from <u>NETS FOR STUDENTS 2007 PROFILES</u>
4. Critical Thinking, Problem Solving, and Decision Making Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.	a. identify and define authentic problems and significant questions for investigation.	Independently develop and apply strategies for identifying and solving routine hardware and software problems. (4,6)
	b. plan and manage activities to develop a solution or complete a project.	Select and use the appropriate tools and digital resources to accomplish a variety of tasks and to solve problems. (3,4,6)
	c. collect and analyze data to identify solutions and/or make informed decisions.	Gather data, examine patterns, and apply information for decision making using digital tools and resources.(1,4) Employ data-collection technology such as probes, handheld devices, and geographic mapping systems to gather, view, analyze, and report results for content-related problems. (3,4,6)
	d. use multiple processes and diverse perspectives to explore alternative solutions.	Use collaborative electronic authoring tools to explore common curriculum content from multiple perspectives with other learners. (2,3,4,5)
5. Digital Citizenship Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.	a. advocate and practice safe, legal, and responsible use of information and technology.	<i>Demonstrate an age-appropriate understanding of the behavioral and ethical guidelines of the Acceptable Use Policy (AUP) (AAS specific Performance Indicator) (5a, 5d)</i>
	b. exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.	Use collaborative electronic authoring tools to explore common curriculum content from multiple perspectives with other learners. (2,3,4,5)
	c. demonstrate personal responsibility for lifelong learning.	
	d. exhibit leadership for digital citizenship.	
6. Technology Operations and Concepts Students demonstrate a sound understanding of technology concepts, systems, and operations.	a. understand and use technology systems.	
	b. select and use applications effectively and productively.	Employ data collection technology such as probes, handheld devices, and geographic mapping systems to gather, view, analyze, and report results for content-related problems. (3,4,6) Select and use the appropriate tools and digital resources to accomplish a variety of tasks and to solve problems. (3,4,6) Integrate a variety of file types to create and illustrate a document or presentation. (1,6) Independently develop and apply strategies for identifying and solving routine hardware and software problems. (4,6) Meet grade level keyboarding/touch typing expectations(6b)
	c. troubleshoot systems and applications.	
	d. transfer current knowledge to learning of new technologies.	

AAS 21st Century Learning Standards & Benchmarks, Gr. 9-12 (Ages 14-18): The following experiences with technology and digital resources are examples of learning activities in which students might engage during Gr. 9-12 (Ages 14-18):

Standards <u>ISTE NETS FOR STUDENTS 2007</u>	Benchmarks: <u>ISTE NETS FOR STUDENTS 2007</u>	Performance Indicators: Adapted from <u>NETS FOR STUDENTS 2007 PROFILES</u>
1. Creativity and Innovation Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.	a. apply existing knowledge to generate new ideas, products, or processes.	Create and publish an online photo or video gallery with examples and commentary that demonstrate an understanding of significant curricular content. (1,2)
	b. create original works as a means of personal or group expression.	Identify a complex global issue, develop a systematic plan of investigation, and present innovative sustainable solutions. (1,2,3,4) Design a website that meets accessibility requirements. (1,5) Create media-rich presentations for other students on the appropriate and ethical use of digital tools and resources. (1,5) Independently develop and apply strategies for identifying and solving routine hardware and software problems. (4,6)
	c. use models and simulations to explore complex systems and issues.	Design, develop, and test a digital learning game to demonstrate knowledge and skills related to curriculum content. (1,4) Employ curriculum-specific simulations to practice critical-thinking processes. (1,4)
	d. identify trends and forecast possibilities.	Gather data, examine patterns, and apply information for decision making using digital tools and resources.(1,4) Employ data-collection technology such as probes, handheld devices, and geographic mapping systems to gather, view, analyze, and report results for content-related problems. (3,4,6)

Standards <u>ISTE NETS FOR STUDENTS</u> <u>2007</u>	Benchmarks: <u>ISTE NETS FOR STUDENTS 2007</u>	Performance Indicators: Adapted from <u>NETS FOR STUDENTS 2007 PROFILES</u>
2. Communication and Collaboration Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.	a. interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.	Participate in a cooperative learning project in an online learning community. (2)
	b. communicate information and ideas effectively to multiple audiences using a variety of media and formats.	Identify a complex global issue, develop a systematic plan of investigation, and present innovative sustainable solutions. (1,2,3,4)
	c. develop cultural understanding and global awareness by engaging with learners of other cultures.	Create and publish an online photo or video gallery with examples and commentary that demonstrate an understanding of significant curricular content. (1,2)
	d. contribute to project teams to produce original works or solve problems.	
3. Research and Information Fluency Students apply digital tools to gather, evaluate, and use information.	a. plan strategies to guide inquiry.	Identify a complex global issue, develop a systematic plan of investigation, and present innovative sustainable solutions. (1,2,3,4) Model legal and ethical behaviors when using information and technology by properly selecting, acquiring, and citing resources. (3,5)
	b. locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.	
	c. evaluate and select information sources and digital tools based on the appropriateness to specific tasks.	Select digital tools or resources to use for a real-world task and justify the selection based on their efficiency and effectiveness. (3,6)
	d. process data and report results.	Employ data-collection technology such as probes, handheld devices, and geographic mapping systems to gather, view, analyze, and report results for content-related problems. (3,4,6)

Standards <u>ISTE NETS FOR STUDENTS 2007</u>	Benchmarks: <u>ISTE NETS FOR STUDENTS 2007</u>	Performance Indicators: Adapted from <u>NETS FOR STUDENTS 2007 PROFILES</u>
4. Critical Thinking, Problem Solving, and Decision Making Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.	a. identify and define authentic problems and significant questions for investigation.	Employ curriculum-specific simulations to practice critical-thinking processes. (1,4)
	b. plan and manage activities to develop a solution or complete a project.	Design, develop, and test a digital learning game to demonstrate knowledge and skills related to curriculum content. (1,4)
	c. collect and analyze data to identify solutions and/or make informed decisions.	Identify a complex global issue, develop a systematic plan of investigation, and present innovative sustainable solutions. (1,2,3,4) Gather data, examine patterns, and apply information for decision making using digital tools and resources.(1,4) Employ data-collection technology such as probes, handheld devices, and geographic mapping systems to gather, view, analyze, and report results for content-related problems. (3,4,6)
	d. use multiple processes and diverse perspectives to explore alternative solutions.	Configure and troubleshoot hardware, software, and network systems to optimize their use for learning and productivity. (4,6)
5. Digital Citizenship Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.	a. advocate and practice safe, legal, and responsible use of information and technology.	<i>Demonstrate an age-appropriate understanding of the behavioral and ethical guidelines of the Acceptable Use Policy (AUP) (AAS specific Performance Indicator) (5a, 5d)</i>
	b. exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.	Design a website that meets accessibility requirements. (1,5)
	c. demonstrate personal responsibility for lifelong learning.	Model legal and ethical behaviors when using information and technology by properly selecting, acquiring, and citing resources. (3,5)
	d. exhibit leadership for digital citizenship.	Create media-rich presentations for other students on the appropriate and ethical use of digital tools and resources. (1,5)
6. Technology Operations and Concepts Students demonstrate a sound understanding of technology concepts, systems, and operations.	a. understand and use technology systems.	Select digital tools or resources to use for a real-world task and justify the selection based on their efficiency and effectiveness. (3,6)
	b. select and use applications effectively and productively.	Configure and troubleshoot hardware, software, and network systems to optimize their use for learning and productivity. (4,6)
	c. troubleshoot systems and applications.	Employ data-collection technology such as probes, handheld devices, and geographic mapping systems to gather, view, analyze, and report results for content-related problems. (3,4,6)
	d. transfer current knowledge to learning of new technologies.	Independently develop and apply strategies for identifying and solving routine hardware and software problems. (4,6)