

**Aurora Public Schools**  
**Department of Instructional Technology**  
**Educational Technology Information Literacy Standards**

Aurora Public Schools has adopted the most current version of the National Educational Technology Standards for Students. The standards were created by the International Society for Technology in Education (ISTE). Aurora Public Schools believes that all students should acquire the necessary skills to be productive in the global world. Students must meet these standards in order to be technology literate.

Educational Technology and Information Literacy is the ability to use digital technology, communication tools and networks to expand creativity, solve problems and improve thinking and learning in an information society. The technology and information literate student is able to use technology as a tool to research, organize, collaborate, evaluate, create, and communicate with an understanding of the ethical and legal issues surrounding the access and use of information.

The skills identified in each standard were either adapted from other school districts or developed by the work of the elementary and middle school business and technology curriculum council. This work was completed throughout last year and will continue this year.

Specific skills and behaviors were identified for each of the six standards for students in kindergarten through eighth grade. Students should be technology literate by the time they reach high school. The primary purposes for developing these skills were to:

1. **Support all staff that instructs students in a technology lab or library. The following standards can be used as a guide to support instruction and learning.**
2. **Guide professional development for staff knowing that if we expect students to acquire a specific skill in a grade level then a teacher should know how to do this also as a minimum expectation.**
3. **Prepare students for a technology literacy assessment by the end of the eighth grade and to meet requirements for NCLB. This school year, 2007-2008 will be the first year for the assessment.**
4. **Support the goals and actions of VISTA 2010 in the areas of Achievement and Environment.**

This document will be considered a work in progress and the next steps will be to develop projects and lesson plans that align with the standards and the district pacing guides. This will help to ensure that educational technology and information literacy is integrated into instruction. The technology and business curriculum council will continue this work this year.

The following introduction is directly from the Educational Technology Information Literacy (ETIL) Plan adopted by Aurora Public Schools in 2006-2007.

In order to accomplish the vision and goals of the Educational Technology Information Literacy (ETIL) Plan adopted by Aurora Public Schools:

We believe all students can learn, and we are committed to preparing learners who value themselves, contribute to a global community and succeed in the international work place.

**Skilled people in the 21st century must understand how to use information and communication technologies as the demand for information and technologically literate citizens continues to increase dramatically.** Expertise in the use of technology supports students in developing these skills by allowing them to pursue topics in depth and at times become experts in charge of their own learning. In order to take full advantage of the vast array of research and multimedia resources, digital content and communications options available to them, students must begin developing this expertise in the early grades.

To that end we believe students must be able to:

- 1•think critically
- 2•apply knowledge to new situations
- 3•comprehend new ideas
- 4•analyze information
- 5•communicate their understanding
- 6•collaborate
- 7•solve problems and make decisions

In support of the role of technology in the educational process, Aurora Public Schools will:

- integrate educational technology and information literacy into curriculum and instruction to increase student achievement and meet district, state, and national standards.

These skills have been adapted from the NETS for Students standards in order to meet the following:

**Technologically literate learners** master the skills that are essential to everyday life and workplace productivity. These learners can identify information needs; identify, select and apply appropriate technological tools and methods to solve problems; gather, manage, and analyze data; and communicate ideas effectively and ethically as a natural part of the learning process across the curriculum.

**Full integration of educational technology and information literacy** into curriculum and instruction involves the infusion of technology as a tool to enhance learning in all content areas and multidisciplinary settings. Effective integration is achieved when learners are able to select from a variety of tools to help them obtain information in a timely manner, analyze and synthesize the information, and present it professionally. This integration enhances engagement and deepens student understandings with the focus always on the curriculum outcome. It is the complementary relationship of appropriate resources and best instructional practices into the daily routines, work, and management of schools.

This ETIL skills document is a work in progress as it must continually change and adapt due to the nature of technology and information systems. In order to be successful, these skills should be introduced, developed, and reinforced in the computer labs/library by the computer teacher/librarian

as well as the classroom/content teacher. All staff share in the responsibility to continually teach and assess the skills listed.

## **National Educational Technology Standards for Students: The Next Generation**

**“What students should know and be able to do to learn effectively and live productively in an increasingly digital world ...”**

### **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 & 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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# Specific Skills Based On NETs Standards

I- Introduction, D-Developing, R- Reinforce

**I** - Introduction means it is a new concept and time is dedicated to learning the initial aspects of the skills. For some skills this introduction may span more than a single year.

**D** - Developing implies that it is a skill that may need aspects re-taught or explained, but the student **has** had sufficient introduction and is becoming more independent in the use of the skill.

**R** - Reinforce implies that the student is able to utilize this skill with minimal teacher involvement.

**1. Creativity and Innovation** - Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.

SKILLS	K	1	2	3	4	5	6	7	8
a. apply existing knowledge to generate new ideas, products, or processes.	I	I	I	D	D	R	R	R	R
b. create original works as a means of personal or group expression.	I	I	D	D	D	R	R	R	R
c. use models and simulations to explore complex systems and issues.	I	I	D	D	D	D	D	R	R
d. identify trends and forecast possibilities.	I	I	I	D	R	R	R	R	R

**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.

SKILLS	K	1	2	3	4	5	6	7	8
a. interact, collaborate, publish and with peers, experts or others employing a variety of digital environments and formats.	I	I	I	D	D	R	R	R	R
b. communicate information and ideas effectively to multiple audiences utilizing a variety of media and formats.	I	I	I	D	D	R	R	R	R
c. develop cultural understanding and global awareness by engaging with learners of other cultures.				I	I	D	D	D	R
d. contribute to project teams to produce original works or solve problems.		I	I	D	D	D	R	R	R

**3. Research and Information Retrieval** - Students apply digital tools to gather, evaluate, and use information.

SKILLS	K	1	2	3	4	5	6	7	8
a. plan strategies to guide inquiry.	I	I	D	D	R	R	R	R	R
b. locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.	I	I	D	D	D	R	R	R	R
c. evaluate and select information sources and digital tools based on the appropriateness to specific tasks.	I	I	D	D	R	R	R	R	R
d. process data and report results	I	I	D	D	R	R	R	R	R

**Specific Research and Information Retrieval Skills**

SKILLS	K	1	2	3	4	5	6	7	8
Use a web browser toolbar	I	D	R	R	R	R	R	R	R
Process information and report results (research paper, science project etc.)		I	I	D	D	D	R	R	R
Gather reference materials from an electronic database			I	D	R	R	R	R	R
Identify key words, names and phrases for a search			I	D	R	R	R	R	R
Perform a Boolean word search			I	D	R	R	R	R	R
Access a website by typing a URL			I	I	D	R	R	R	R
Search via a web browser			I	I	D	R	R	R	R
Evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources concerning real world situations.				I	I	D	D	D	R
Process information from a online source and report results				I	I	D	R	R	R
Create basic citations				I	I	D	R	R	R
Capture and save graphics, videos, and other file types adhering to copyright laws				I	I	D	R	R	R

**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.

SKILLS	K	1	2	3	4	5	6	7	8
a. identify and define authentic problems and significant questions for investigation.		I	I	D	D	R	R	R	R
b. plan and manage activities to develop a solution or complete a project.		I	I	D	D	R	R	R	R
c. collect and analyze data to identify solutions and/or make informed decisions.			I	I	D	D	R	R	R
d. use multiple processes and diverse perspectives to explore alternative solutions.		I	I	I	D	D	D	R	R

### **Specific Critical Thinking, Problem-Solving, and Decision-Making Skills**

SKILLS	K	1	2	3	4	5	6	7	8
Use technology resources for problem solving, communications, and illustration of thoughts, ideas, and stories	I	I	D	D	D	R	R	R	R
Determine when technology is useful and select the appropriate tool(s) and technology resources to address a variety of tasks and problems, and explore alternative solutions.			I	I	D	D	D	R	R
Apply technology tools to design, develop, publish, and present products that demonstrate and communicate personal productivity and group collaboration to varied audiences.						I	D	D	R
Demonstrate an understanding of concepts underlying hardware, software, and connectivity with the practical applications to learning and problem solving.						I	D	D	R

### **5. Digital Citizenship - Students understand human, cultural, and societal issues related to technology, and practice legal and ethical behavior.**

SKILLS	K	1	2	3	4	5	6	7	8
a. advocate and practice safe, responsible use of information and technology.	I	I	D	D	R	R	R	R	R
b. demonstrate collaboration, learning, and productivity using technology ☺	I	I	D	R	R	R	R	R	R
c. demonstrate personal responsibility for lifelong learning.	I	I	D	R	R	R	R	R	R
d. exhibit leadership for digital citizenship.			I	I	D	D	R	R	R

### **Specific Digital Citizenship Skills**

SKILLS	K	1	2	3	4	5	6	7	8
Describe uses of technology in society	I	D	R	R	R	R	R	R	R
Demonstrate proper usage of equipment	I	D	R	R	R	R	R	R	R
Work cooperatively and collaboratively with others when using technology	I	D	R	R	R	R	R	R	R
Internet Safety (Cyberbullying, Identity Theft, Predator Awareness etc.)	I	I	D	D	D	D	D	R	R
Exhibit legal and ethical behaviors <ul style="list-style-type: none"> <li>• Understand /adhere to copyright laws (including citations)</li> <li>• Understand/adhere to established school procedures &amp; district policies (AUP – acceptable use agreements)</li> </ul>	I	I	I	D	D	D	D	D	R

### **6. Technology Operations and Concepts - Students demonstrate a sound understanding of technology concepts, systems, and operations.**

SKILLS	K	1	2	3	4	5	6	7	8
a. understand and use technology systems.	I	I	D	D	D	D	D	R	R
b. select and use applications effectively and productively.	I	I	D	D	D	D	D	R	R
c. troubleshoot systems and applications.		I	I	I	D	D	D	D	R
d. transfer current knowledge to learning of new technologies.	I	I	D	D	D	R	R	R	R

## Specific Technology Operations and Concepts Skills

### Word Processing/Publishing Skills

SKILLS	K	1	2	3	4	5	6	7	8
Enter/delete text: • Edit alignment/justification, line spacing and margins • Select text/format with font options	I	D	D	D	R	R	R	R	R
Undo/redo	I	D	R	R	R	R	R	R	R
Use "Save As"		I	D	D	R	R	R	R	R
Use spell check, thesaurus and dictionaries			I	D	R	R	R	R	R
Import/manipulate clip art, word art, drawings, and digital images			I	D	D	D	R	R	R
Use text boxes with format options			I	D	R	R	R	R	R
Print ( select printer, set number of copies)			I	D	R	R	R	R	R
Cut/Copy/paste within or between documents				I	D	R	R	R	R
Find/replace					I	D	R	R	R
Insert, position, remove tabs					I	D	R	R	R
Create a brochure, newsletter, book or flyer etc.					I	D	R	R	R

### Graphics

SKILLS	K	1	2	3	4	5	6	7	8
Access/use drawing program (tools, text)	I	I	D	D	D	D	D	D	R
Manipulate/edit an image	I	D	D	D	D	D	D	D	R
Create and import graphics into another document	I	I	I	D	D	D	R	R	R
Use a digital camera or other imaging device				I	I	D	R	R	R

### Multimedia Presentations

SKILLS	K	1	2	3	4	5	6	7	8
Start/open a presentation			I	D	R	R	R	R	R
Add text and graphics to presentation			I	D	R	R	R	R	R
Revise and Edit a presentation			I	D	R	R	R	R	R
Plan presentation for specified audience			I	D	D	R	R	R	R
Use various View options (Show, slide sorter etc...)				I	D	R	R	R	R
Add transitions to presentation					I	D	R	R	R
Add sound effects and/or video/music to presentation					I	D	R	R	R
Publish in various formats (print, web, video, audio, etc.)					I	D	R	R	R

### Spreadsheet (formulas, sorting...)

SKILLS	K	1	2	3	4	5	6	7	8
Insert and format data	I	D	D	D	D	D	R	R	R
Create an appropriate graph from data	I	D	D	D	R	R	R	R	R
Interpret and analyze data	I	I	D	D	D	R	R	R	R
Copy/paste a graph into another application			I	D	D	D	R	R	R
Recognize the elements of a spreadsheet				I	D	R	R	R	R
Enter text and numbers, move among cells				I	D	R	R	R	R
Format graph ( background, font, text, color, etc)					I	D	R	R	R

Add header/footer

I D D D R