



Digital Connections

Living in the 21st Century as

Capable,
Competent,
Comfortable
Digital Learners

Eugene School District 4j
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This core document was created by Tigard-Tualitin School District and has been adapted for use by a K-12 group of Eugene 4J educators from Howard, Kelly, and North.

To create capable, competent, comfortable computer/digital learners, the following must be in place,

1. A shared district vision that is a living, working document representing the needs of the 21 century learner. (eg Digital Connections)
2. A site based school technology plan that meets the district vision.
3. Technology supportive administration
4. Capable, competent, comfortable digital use educators.
5. Current hardware, software and peripherals to support learning
6. Site based technology problem solving User Services specialist.
7. Coordination and instruction in userware. (software and webased)
8. District support in ongoing professional development
9. Site based ongoing professional development.

Seven Essential Learnings for Technology

Success in the world of the 21st century will require some new skills. The “Essential Learnings” listed below are an attempt to summarize the basic skill set that will be of particular value for the foreseeable future. These skills are as important for staff as for students. They represent requirements for success now and in the future.

- 1. A person as a researcher** recognizes and values the breadth of information sources, browses those sources, differentiates and selectively chooses sources, and retrieves appropriate information data using all forms of media technology and telecommunications.
- 2. A person as analyzer** is a critical thinker who reviews data from a variety of sources, analyzing, synthesizing and evaluating data to transform it into useful information and knowledge to solve problems.
- 3. A person as a creator/inventor** of knowledge constructs new meaning and knowledge by combining and synthesizing different types of information through technology, telecommunications and computer models/simulations.
- 4. A person as a communicator** creates, produces and presents ideas and unique representations of thoughts through a variety of media by analyzing the task before him/her, the technologies available, and appropriately selecting and using the most effective tool(s)/media for the purpose of the audience.
- 5. A person as a manager** discriminates among a variety of technologies and media to extend and expand his/her capabilities, and is effective in the accumulation, storage and retrieval of relevant information in a timely manner.
- 6. A person as a technician** develops sufficient technical skills to successfully install, set-up and use the technology and telecommunications tools in his/her daily life, work situations and learning environments.
- 7. A person as a responsible citizen** understands the ethical, cultural, environmental and societal implications of technology and telecommunications, and develops a sense of stewardship and individual responsibility regarding his/her use of technology and telecommunications networks.

Essential Conditions for Instructional Technology Success

The most effective learning environments facilitate student learning by melding traditional approaches with new approaches and appropriate technologies. For these learning environments to develop, certain essential conditions must be present.

Shared Vision - There is proactive leadership and administrative. This includes the opportunity for input/feedback from all involved parties. The vision needs to be examined and revised on a regular basis.

Technology Plan - Each school site will have a technology plan that will clearly identify their process for meeting the shared vision.

Professional Development/Skilled Educators - Educators are skilled in the use of technology for learning. Educators have consistent access to professional development in support of technology use in teaching and learning. They are exposed to what is available and what is possible. The focus of all professional development needs to be on strategies that integrate technology into the curriculum.

Content Standards/Benchmarks and Curriculum Resources - Educators are knowledgeable in their subject matter and current in the content standards and teaching methodologies in their discipline. There is an understanding that technology is a tool to be used to meet curricular benchmarks.

Assessment - There is continuous assessment of the effectiveness of technology for learning and how technology is integrated into the curriculum. Based on the outcomes of these assessments, the shared vision is revisited and professional development plans are designed and/or revised.

Access - Educators have access to current and appropriate technologies, software, and telecommunications networks that support the shared vision.

Technical Assistance - Educators have technical assistance for maintaining and using the technology. Educators are trained in basic troubleshooting to allow them to help manage their own technology, but have access to additional levels of support when needed.

Community Support - There is development of a mutually beneficial relationship amongst the community and school partners. All partners provide expertise, support, and resources for each other.

Support Policies - There is ongoing financial availability for sustained technology use and the continued development of policies, standards and structures that support new learning environments. Adapted from: ISTE NETS Essential Conditions for Teacher Preparation available at URL: <http://cnets.iste.org/index3.html>

Educational Technology Foundations For All Teachers

We teach today for a tomorrow that is very much different from yesterday. The world where our graduates must be comfortable and productive is being built with the currency of information. Success will come to those who are most fluent with tools for information acquisition, manipulation and application toward solutions to real problems. To facilitate the effective preparation of our students for this world, teachers must themselves infuse the modern tools of information into their instruction and professional lives. The following list of indicators is our first attempt at defining the characteristics of an effective, technologically savvy teacher. These are adapted from the National Education Technology Standards for Teachers. (<http://cnets.iste.org/>) It is hoped that these indicators will be useful to teachers and administrators in structuring professional development opportunities that enhance instructional skills through the effective use of technology.

Indicators

- I. **TECHNOLOGY OPERATIONS AND CONCEPTS.** Teachers demonstrate a sound understanding of technology operations and concepts. Teachers:
 - A. demonstrate knowledge, skills, and understanding of concepts related to technology for students (as described in Future Paths. This includes all productivity tools such as word processor, database, spreadsheet, graphics programs, email, etc. as well as some more specialized programs).
 - B. demonstrate continual growth in technology knowledge and skills to stay abreast of current and emerging technologies.

- II. **PRODUCTIVITY AND PROFESSIONAL PRACTICE.** Teachers use technology to enhance their productivity and professional practice. Teachers:
 - A. use technology resources to engage in ongoing professional development and lifelong learning.
 - B. continually evaluate and reflect on professional practice to make informed decisions regarding the use of technology in support of student learning.
 - C. apply technology to increase productivity.
 - D. use technology to communicate and collaborate with peers, parents, and the larger community in order to nurture student learning.

- III. **PLANNING AND DESIGNING LEARNING ENVIRONMENTS AND EXPERIENCES.** Teachers plan and design effective learning environments and experiences supported by technology. Teachers:
 - A. design developmentally appropriate learning opportunities that apply technology-enhanced instructional strategies to support the diverse needs of learners.

- B. apply current research on teaching and learning with technology when planning learning environments and experiences.
- C. identify and locate technology resources and evaluate them for accuracy and suitability.
- D. plan for the management of technology resources within the context of learning activities.
- E. plan strategies to manage student learning in a technology-enhanced environment.

IV. TEACHING, LEARNING, AND THE CURRICULUM. Teachers implement curriculum plans, that include methods and strategies for applying technology to maximize student learning. Teachers:

- F. facilitate technology-enhanced experiences that address content standards and student technology standards.
- G. use technology to support learner-centered strategies that address the diverse needs of students.
- H. apply technology to develop students' higher order skills and creativity.
- I. manage student learning activities in a technology-enhanced environment.

V. ASSESSMENT AND EVALUATION. Teachers apply technology to facilitate a variety of effective assessment and evaluation strategies. Teachers:

- J. apply technology in assessing student learning of subject-matter using a variety of assessment techniques.
- K. use technology resources to collect and analyze data, interpret results, and communicate findings to improve instructional practice and maximize student learning.
- L. apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity.

VI. SOCIAL, ETHICAL, LEGAL, AND HUMAN ISSUES. Teachers understand the social, ethical, legal, and human issues surrounding the use of technology in PreK-12 schools and apply those principles in practice. Teachers:

- M. model and teach legal and ethical practice related to technology use.
- N. apply technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities.
- O. identify and use technology resources that affirm diversity
- P. promote safe and healthy use of technology resources.
- Q. facilitate equitable access to technology resources for all students.

State of Oregon Instructional Technology

The State of Oregon believes that technology plays an essential role in a student's education. To that end the following revisions to the **Technology Common Curriculum Goals** were adopted by the State Board in March 2002.

1. Demonstrate proficiency in the use of technological tools and devices.
2. Select and use technology to enhance learning and problem solving.
3. Access, organize and analyze information to make informed decisions, using one or more technologies
4. Use technology in an ethical and legal manner and understand how technology affects society.
5. Design, prepare and present unique works using technology to communicate information and ideas.
6. Extend communication and collaboration with peers, experts and other audiences using telecommunications.

Kindergarten

1. Basic operations and concepts:

Students will be able to:

A. Use the following keys on a keyboard:

- Space bar
- Escape
- Return
- Arrows
- Delete
- Shift

B. Identify:

- Keyboard and mouse
- Monitor
- Printer

C. Use a mouse/trackpad to navigate

D. Open and close programs

E. Print a document with assistance

F. Appropriately care for equipment

2. Social, ethical, and human issues:

Students will:

A. Demonstrate positive behavior when using technology

B. Demonstrate appropriate behavior when using technology

3. Technology productivity, research, problem-solving and communication tools:

Students will be able to:

A. Use a word processor to type their name in upper and lower case letters

B. Use a drawing program to create simple shapes

C. Use a drawing program to create a document with picture/text

D. Use technology software for problem solving (i.e. Millie's Math House, Bailey's Book House)

- E. Use an MP3 player to access information
- F. Use web based programs for access to curriculum
- G. Use digital cameras to develop record of work

1st Grade

1. *Basic operations and concepts:*

Students will be able to: _____

- A. Use the following keys on a keyboard--space, escape, arrows, return, shift and delete
- B. Use appropriate and accurate terminology when describing:
 - Desktop
 - Server
- C. Open/close programs
- D. Use menus to access software
- E. Save files to a server with assistance
- F. Print a document with assistance
- G. Check the finder for open applications
- H. Appropriately care for equipment

2. *Social, ethical, and human issues:*

Students will be able to: _____

- A. Work cooperatively with peers using technology
- B. Demonstrate positive and appropriate behavior when using technology

3. *Technology productivity, research, problem-solving and communication tools:*

Students will be able to: _____

- A. Use a word processor to create a short document (1-2 sentences)
- B. Do basic editing with assistance
- C. Use a drawing program to create a product with picture and text
- D. Access the Internet using teacher bookmarks
Use developmentally appropriate multimedia resources (i.e. KidPix to
- E. produce a product.

2nd Grade

1. Basic operations and concepts:

Students will be able to:

- A. Use both hands on keyboard
- B. Demonstrates appropriate posture when using keyboard.
- C. Use developmentally appropriate terminology to identify and describe:
 - Server
 - Network
 - Internet
 - Desktop
- D. Use menus to access software
- E. Log into/out of server with direction
- F. Save files properly to the server directory with assistance
- G. Print documents
- H. Do basic troubleshooting with appropriate assistance

2. Social, ethical, and human issues:

Students will be able to:

- A. Work cooperatively with peers when using technology.
- B. Demonstrate positive behaviors towards technology

3. Technology productivity, research, problem-solving and communication tools:

Students will be able to:

- A. Use a word processor (using basic editing techniques to create a paragraph, story or letter).
- B. Use a drawing/graphics program to create an illustration.
- C. Locate Information using electronic book search.
- D. Use the Internet to do research about a relevant topic using bookmarks or link pages.
- E. Use a handheld calculator.
- F. Create a slide show with support fro teachers or student partners.
- G. Use a created database (library or on an electronic encyclopedia) to find information.
- H. Use a spreadsheet to create a chart.

3rd Grade

1. *Basic operations and concepts:*

Students will be able to:

- A. Keyboard at 10 words per minute
- B. Log in/out server
- C. Save files properly
- D. Use a printer
- E. Do basic troubleshooting including quitting programs
- F. Appropriately care for equipment

2. *Social, ethical, and human issues:*

Students will be able to:

- A. Work cooperatively and collaboratively with peers when using technology
- B. Discuss basic issues related to responsible use of technology
- C. Describe the consequences of inappropriate use of building technology
- D. Understand their responsibilities when using technology
- E. Understand that copyright laws protect authors
- F. Cite basic information sources
- G. Describe what plagiarism is and understand that it is wrong
- H. Discuss common uses of technology in daily life

3. *Technology productivity, research, problem-solving and communication tools:*

Students will be able to:

- A. Determine when technology is the right tool to use for a project
Determine the right tool (with guidance) to achieve the learning goal.
- B. Examples include:
 - Word processing
 - Drawing
 - Database (use a created one)
 - Spreadsheet (to create charts)
 - Internet
 - Search engines (i.e. Nettekker.)

- Graphics
- Digital camera for taking pictures
- Multimedia authoring software (i.e. iWeb, Pages, Keynote)

C. Basic editing techniques for word processing
Basic search strategies for finding information from electronic and Internet

D. sources

E. Evaluate the accuracy and relevance of electronic sources by:

- Locating the author of website
- Looking at the content of the site to determine its usefulness

Use software designed for skill remediation in curriculum area (e.g KidBiz

F. 3000))

G. Use technology resources for problem solving, including:

- Handheld calculators
- Specialty software (i.e. mapping, encyclopedia)
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4th Grade

1. *Basic operations and concepts:*

Students will be able to:

- A. Keyboard at 15 words per minute
- B. Login/out of server
- C. Save files properly
- D. Use a printer
- E. Troubleshoot:
 - Printer warning lights
 - Restart a frozen computer
 - Check to make sure the computer has power

2. *Social, ethical, and human issues:*

Students will be able to:

- A. Work cooperatively and collaboratively with peers and teachers when using technology
- B. Discuss basic issues related to responsible use of technology
- C. Describe the consequences of inappropriate use of school technology
- D. Understand their responsibilities when using technology
- E. Understand that copyright laws protect authors
- F. Cite basic information sources
- G. Describe what plagiarism is and understand that it is wrong
- H. Discuss common uses of technology in life and the advantages of using technology
- I. Demonstrate ethical behavior when using the Internet

3. *Technology productivity, research, problem-solving and communication tools:*

Students will be able to:

A. Determine when technology is the right tool to use for a project

Determine the right tool (with guidance) to achieve the learning goal.

B. Examples include:

- Word processing
- Drawing
- Database (create with assistance)
- Spreadsheet (to calculate)
- Internet
- Search engines (Yahoo, AskJeeves, Google, etc.)
- Digital camera/ Video Camera
- Graphics
- Scanner
- Multimedia authoring software (i.e. KidPix, PowerPoint, AppleWorks Presentation)

C. Editing techniques in word processing

Search strategies for finding information from electronic and Internet

D. sources

Evaluate the accuracy and relevance of electronic information sources

E. by:

- Locating the author of website
- Identifying an update or creation date
- Looking at the content of the site to determine its usefulness
- Analyzing the URL of websites
- Using multiple sources to confirm accuracy

F. Use software designed for skill remediation when appropriate

G. Use technology resources for problem solving, possibly including:

- Handheld calculators
- Specialty software (i.e. Oregon Trail, The Factory, etc.)

5th Grade

1. *Basic operations and concepts:*

Students will be able to:

- A. Keyboard at 20 words per minute
- B. Create and use file/folder structures
- C. Save files properly to server
- D. Choose printer
- E. Do advanced troubleshooting:
 - Check print monitor
 - Restart a frozen computer
 - Check the power supply
- F. Connect peripheral devices (i.e. digital camera, scanner)

2. *Social, ethical, and human issues:*

Students will be able to:

- A. Work cooperatively and collaboratively with peers, teachers and others when using technology
- B. Discuss issues related to responsible use of technology
- C. Describe the consequences of inappropriate use
- D. Understand their responsibilities related to technology usage
- E. Understand that copyright laws protect authors
- F. Cite information sources
- G. Describe what plagiarism is and understand that it is wrong
- H. Discuss common uses of technology in the real world and why technology is important and will continue to be important in the future
- I. Demonstrate ethical behavior when using the Internet

3. *Technology productivity, research, problem solving and communication tools:*

Students will be able to:

- A. Determine when technology is the right tool to use for a project
- B. Determine the right tool to achieve the learning goal. Examples include:

- Word processing
- Drawing
- Database (create)
- Spreadsheet (to calculate)
- Multimedia authoring software (i.e. Keynote, Pages, Word, Excel):
- Scanner
- Internet
- Search engines (Nettrekker, Google, Safari)
- Graphics and digital manipulation software
- Digital camera
- Web publishing
- Video equipment (teacher directed)

Students will demonstrate:

- C. Editing techniques in word processing
- D. Search strategies for finding information from electronic and Internet sources

Students will be able to:

- E. Evaluate the accuracy and relevance of electronic information sources by:
 - Analyzing the URL of websites to understand the source of the information
 - Using multiple sources to confirm accuracy
 - Analyzing page for conventions
 - Recognizing author's purpose/bias
 - Looking at the content of the site to determine its usefulness
- F. Use software designed for remediation
- G. Use technology resources for problem solving, possibly including:
 - Handheld calculators
 - Specialty software