

# *Priority Academic Student Skills*

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## **INSTRUCTIONAL TECHNOLOGY Grades 1 - 12**

These Priority Academic Student Skills have been created using the International Society for Technology in Education (ISTE) National Education Technology Standards (NETS). This has been done in order to provide access to the resources of the ISTE organization and its efforts to correlate the National Education Technology Standards to the national curriculum standards in mathematics, science, language arts, etc.

These standards should not to be viewed as “stand alone” standards for technology, but as technology that facilitates teaching and learning across the entire curriculum. These priority skills were purposely designed to be broad in defining the basic skills for instructional technology statewide.

### **Introductory Level prior to completion of Grade 5**

#### **Standard 1: The student will demonstrate knowledge of basic operations and concepts.**

1. Use keyboards and other common input and output devices (including adaptive devices when necessary) efficiently and effectively.
2. Discuss common uses of technology in daily life and the advantages and disadvantages those uses provide.

#### **Standard 2: The student will demonstrate knowledge of social, ethical, and human issues, discuss basic issues related to responsible use of technology and information and describe personal consequences of inappropriate use.**

#### **Standard 3: The student will demonstrate knowledge of technology productivity tool.**

1. Use general-purpose productivity tools and peripherals to support personal productivity, remediate skill deficits, and facilitate learning throughout the curriculum.
2. Use technology tools (e.g., multimedia authoring, presentation, Web tools, digital cameras, scanners) for individual and collaborative writing, communication, and publishing activities to create knowledge products for audiences inside and outside the classroom.

#### **Standard 4: The student will demonstrate knowledge of technology communications tools.**

1. Use technology tools (e.g., multimedia authoring, presentation, Web tools, digital cameras, scanners) for individual and collaborative writing, communication, and publishing activities to create knowledge products for audiences inside and outside the classroom.
2. Use telecommunications efficiently to access remote information, communicate with others in support of direct and independent learning, and pursue personal interests.
3. Use telecommunications and online resources (e.g., e-mail, online discussions, Web environments) to participate in collaborative problem-solving activities for the purpose of developing solutions or products for audiences inside and outside the classroom.

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### **Standard 5: The student will demonstrate knowledge of technology research tools.**

1. Use telecommunications and online resources (e.g., e-mail, online discussions, Web environments) to participate in collaborative problem-solving activities for the purpose of developing solutions or products for audiences inside and outside the classroom.
2. Use technology resources (e.g., calculators, data collection probes, videos, educational software) for problem solving, self-directed learning, and extended learning activities.
3. Determine which technology is useful and select the appropriate tool(s) and technology resources to address a variety of tasks and problems.

### **Standard 6: The student will demonstrate knowledge of technology problem-solving and decision-making tools.**

1. Use technology resources (e.g., calculators, data collection probes, videos, educational software) for problem solving, self-directed learning, and extended learning activities.
2. Determine which technology is useful and select the appropriate tool(s) and technology resources to address a variety of tasks and problems.
3. Evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources.

### **Intermediate Level prior to completion of Grade 8**

#### **Standard 1: The student will demonstrate knowledge of basic operations and concepts.**

1. Apply strategies for identifying and solving routine hardware and software problems that occur during everyday use.
2. Demonstrate an understanding of concepts underlying hardware, software, and connectivity, and of practical applications to learning and problem solving.

#### **Standard 2: The student will demonstrate knowledge of social, ethical, and human issues.**

1. Demonstrate knowledge of current changes in information technologies and the effect those changes have on the workplace and society.
2. Exhibit legal and ethical behaviors when using information and technology, and discuss consequences of misuse.
3. Research and evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources concerning real-world problems.

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### **Standard 3: The student will demonstrate knowledge of technology productivity tools.**

1. Use content-specific tools, software, and simulations (e.g., environmental probes, graphing calculators, exploratory environments, Web tools) to support learning and research.
2. Apply productivity/multimedia tools and peripherals to support personal productivity, group collaboration, and learning throughout the curriculum.

### **Standard 4: The student will demonstrate knowledge of technology communication tools.**

1. Design, develop, publish, and present products (e.g., Web pages, videotapes) using technology resources that demonstrate and communicate curriculum concepts to audiences inside and outside the classroom.
2. Collaborate with peers, experts, and others using telecommunications and collaborative tools to investigate curriculum-related problems, issues, and information, and to develop solutions or products for audiences inside and outside the classroom.

### **Standard 5: The student will demonstrate knowledge of technology research tools.**

1. Use content-specific tools, software, and simulations (e.g., environmental probes, graphing calculators, exploratory environments, Web tools) to support learning and research.
2. Design, develop, publish, and present products (e.g., Web pages, videotapes) using technology resources that demonstrate and communicate curriculum concepts to audiences inside and outside the classroom.
3. Collaborate with peers, experts, and others using telecommunications and collaborative tools to investigate curriculum-related problems, issues, and information, and to develop solutions or products for audiences inside and outside the classroom.
4. Select and use appropriate tools and technology resources to accomplish a variety of tasks and solve problems.
5. Research and evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources concerning real-world problems.

### **Standard 6: The student will demonstrate knowledge of technology problem-solving and decision-making tools.**

1. Apply productivity/multimedia tools and peripherals to support personal productivity, group collaboration, and learning throughout the curriculum.
2. Design, develop, publish, and present products (e.g., Web pages, videotapes) using technology resources that demonstrate and communicate curriculum concepts to audiences inside and outside the classroom.
3. Select and use appropriate tools and technology resources to accomplish a variety of tasks and solve problems.

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4. Demonstrate an understanding of concepts underlying hardware, software, and connectivity, and of practical applications to learning and problem solving.
5. Research and evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources concerning real-world problems.

### **Advanced Level prior to completion of Grade 12**

**Standard 1: The student will demonstrate knowledge of basic operations and concepts. And make informed choices among technology systems, resources, and services.**

**Standard 2: The student will demonstrate knowledge of social, ethical, and human issues.**

1. Identify capabilities and limitations of contemporary, emerging technology resources, and assess the potential of these systems and services to address personal, lifelong learning, and workplace needs.
2. Make informed choices among technology systems, resources, and services.
3. Analyze advantages and disadvantages of widespread use and reliance on technology in the workplace and in society as a whole.
4. Demonstrate and advocate for legal and ethical behaviors among peers, family, and community regarding the use of technology and information.

**Standard 3: The student will demonstrate knowledge of technology productivity tool.**

1. Use technology tools and resources for managing and communicating personal/professional information (e.g., finances, schedules, addresses, purchases, correspondence).
2. Investigate and apply expert systems, intelligent agents, and simulations in real-world situations.

**Standard 4: The student will demonstrate knowledge of technology communications tools.**

1. Use technology tools and resources for managing and communicating personal/professional information (e.g., finances, schedules, addresses, purchases, correspondence).
2. Routinely and efficiently use online information resources to meet needs for collaboration, research, publications, communications, and productivity.
3. Select and apply technology tools for research, information analysis, problem solving, and decision-making in content learning.
4. Collaborate with peers, experts, and others to contribute to a content-related knowledge base by using technology to compile, synthesize, produce, and disseminate information, models, and other creative works.

**Standard 5: The student will demonstrate knowledge of technology research tools.**

1. Evaluate technology-based options, including distance and distributed education, for lifelong learning.

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2. Routinely and efficiently use online information resources to meet needs for collaboration, research, publications, communications, and productivity.
3. Select and apply technology tools for research, information analysis, problem solving, and decision-making in content learning.
4. Investigate and apply expert systems, intelligent agents, and simulations in real-world situations.
5. Collaborate with peers, experts, and others to contribute to a content-related knowledge base by using technology to compile, synthesize, produce, and disseminate information, models, and other creative works.

### **Standard 6: The student will demonstrate knowledge of technology problem-solving and decision-making tools.**

1. Routinely and efficiently use online information resources to meet needs for collaboration, research, publications, communications, and productivity.
2. Investigate and apply expert systems, intelligent agents, and simulations in real-world situations.
3. Collaborate with peers, experts, and others to contribute to a content-related knowledge base by using technology to compile, synthesize, produce, and disseminate information, models, and other creative works.

Lesson plans and other resources which may be used to facilitate the implementation of these standards can be found at the ISTE Web site at <http://www.iste.org>, the Oklahoma State Department of Education at <http://www.sde.state.ok.us>, and the PASSPort Web site at <http://www.sde.state.ok.us/passport>.

For more information, please feel free to call our staff at (405) 521-3994.

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## **Glossary**

**computer** - A device capable of performing a series of arithmetic or logical operations. A computer is distinguished from a calculating machine, such as an abacus or electronic calculator, by being able to store a computer program (so that it can repeat its operations and make logical decisions) and to store and retrieve data without human intervention.

**database** - A collection of data arranged for ease and speed of search and retrieval. Also called data bank.

**distance learning** - A type of education where students work at a site remote from the instructor and communicate via e-mail, electronic forums, videoconferencing and/or other forms of electronic media.

**multimedia** - The use of computers to present integrated text, graphics, video, animation, and sound.

**peripheral device** - An electronic device that attaches to a computer, but is not a part of the standard operating hardware. Examples of such devices are disk drives, printers, scanners, drawing tablets, speakers, projectors, etc.

**productivity tools** - Software applications used to perform standard tasks. The most common productivity tools are word processors, spreadsheets, databases, presentation software, e-mail, etc.

**software** - The programs, routines, and symbolic languages that control the functioning of the hardware and direct its operation.

**spreadsheet** - An accounting or bookkeeping program for a computer. The display, with multiple columns and rows, that such a program allows to be printed.

**technology** - The body of knowledge available that is of use in extracting, creating, distributing, manipulating or collecting data and/or information.

**telecommunications** - the science and technology of communication at a distance by electronic transmission of impulses, as by cable, telephone, radio, computer or television.

**word processor** - A computer system either specially designed for or capable of word processing.