



# NETS for Students Achievement Summary Rubric

**DRAFT (June 21, 2004)**

**Purpose:** This draft version of the NETS achievement rubric is available online for educational technology professionals to review and provide feedback to the developers.

**More information:** If you have questions about the rubric, please contact the developers at [netsrubric@learningpt.org](mailto:netsrubric@learningpt.org).

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<b>Standard 1</b> <i>Basic operations and concepts</i>	<b>Novice</b> <i>By the end of Grade 2</i>	<b>Basic</b> <i>By the end of Grade 5</i>	<b>Proficient</b> <i>By the end of Grade 8</i>	<b>Advanced</b> <i>By the end of Grade 12</i>
<b>a. Students demonstrate a sound understanding of the nature and operation of technology systems. (nature and operations)</b>	Students know how to use basic input devices (e.g., keyboard fingering, mouse manipulation), output devices (e.g., monitor and printer use), and software resources (e.g., diskette, CD-ROM use).	Students know how to use basic input and output devices, access network resources (e.g., printers, file servers), and use common peripherals (e.g., scanners, digital probes, digital cameras, and video projectors).	Students know how to access network resources and apply common peripherals such as scanners, digital cameras, and video projectors effectively and efficiently.	Students describe new and/or advanced technology resources information dissemination options (e.g., video servers, webcasting, compressed video delivery, online file sharing, graphing calculators, multifunction communications devices, global positioning software), and technology career opportunities.
<b>b1. Students are proficient in the use of technology. (information management)</b>	Students recognize basic software commands to manage and maintain computer files on a hard drive, or other storage medium (e.g., diskette, CD-ROM).	Students identify basic software commands used to manage and maintain computer files on a hard drive, diskette, or CD-ROM, and to manage and maintain files on a network.	Students identify strategies and procedures for efficient and effective management and maintenance of computer files in a variety of different media and formats on a hard drive and network.	Students know how to use advanced utilities (e.g., compression, antivirus) with computer files in a variety of different media and formats.
<b>b2. Students are proficient in the use of technology. (terminology and problem solving)</b>	Students recognize and use accurate terminology to describe hardware, software, multimedia devices, and storage media, and to identify the basic functions of technology resources commonly used in early elementary classrooms.	Students describe basic hardware, software, and networking functions, and discuss the functions, processes, and/or procedures applied in common use of these technology resources.	Students analyze and describe how to solve basic hardware, software, and network problems that occur during everyday use; protect computers, networks, and information from viruses, vandalism, and unauthorized use; and access online help and user documentation to solve common hardware, software, and network problems.	Students know how to identify, assess, and solve advanced hardware, software, and network problems by using online help and other user documentation and support.

<b>Standard 2</b> <i>Social, ethical, and human issues</i>	<b>Novice</b> <i>By the end of Grade 2</i>	<b>Basic</b> <i>By the end of Grade 5</i>	<b>Proficient</b> <i>By the end of Grade 8</i>	<b>Advanced</b> <i>By the end of Grade 12</i>
<b>a. Students understand the ethical, cultural, and societal issues related to technology.</b>	Students identify common uses of information and communication technology in daily life and discuss some advantages and disadvantages of technology use.	Students describe a broad range of uses for information and communication technology in daily life and discuss implications of ethical and unethical use of current technologies at school and in society.	Students examine legal and ethical issues related to use of information and communication technology, recognize consequences of its misuse, and predict possible long-range effects of ethical and unethical use of technology on culture and society.	Students analyze current trends in information and communication technology and assess the potential of emerging technologies for ethical and unethical uses in culture and society.
<b>b. Students practice responsible use of technology systems, information, and software.</b>	Students know how to care for technology systems in their classroom, how to use them responsibly, and how to respect the rights of others who use the same learning resources (e.g., privacy, security, copyright, file sharing).	Students provide examples of acceptable and responsible use of information and communication technology resources (e.g., privacy, security, copyright, file sharing, plagiarism).	Students discuss issues related to acceptable and responsible use of information and communication technology (e.g., privacy, security, copyright, file sharing, plagiarism); analyze the consequences and costs of unethical use of information and computer technology (e.g., hacking, spamming, consumer fraud, virus setting); and identify methods of addressing these risks.	Students analyze the consequences and costs of unethical use of information and computer technology and identify how individuals can protect their technology systems from the unethical and unscrupulous user.
<b>c. Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.</b>	Students describe acceptable and unacceptable computer etiquette and how to work cooperatively with peers, family members, and others when using technology in the classroom or at home.	Students identify issues related to computer etiquette and discuss how information and communication technology supports collaboration, personal productivity, lifelong learning, and assistance for students with disabilities.	Students examine issues related to computer etiquette and discuss means for encouraging more effective use of technology to support effective communication, collaboration, personal productivity, lifelong learning, and assistance for individuals with disabilities.	Students analyze current trends in information and communication technology and discuss how emerging technologies could affect collaboration, enhance personal productivity, meet the diverse needs of learners, and promote opportunities for lifelong learning among local and global communities.

<b>Standard 3</b> <i>Technology productivity tools</i>	<b>Novice</b> <i>By the end of Grade 2</i>	<b>Basic</b> <i>By the end of Grade 5</i>	<b>Proficient</b> <i>By the end of Grade 8</i>	<b>Advanced</b> <i>By the end of Grade 12</i>
<b>a. Students use technology tools to enhance learning, increase productivity, and promote creativity.</b>	Students know how to open and edit word-processing documents and use simple drawing and presentation software to illustrate concepts and convey ideas.	Students identify and apply common software features such as menus and toolbars to plan, create, and edit word-processing documents, spreadsheets, and presentations.	Students describe and apply common software features (such as spelling checker and thesaurus) to ensure accuracy of word-processing documents, formulas and chart generation in spreadsheets, and insertion of pictures, movies, sound, and charts in presentation software to enhance communication to an audience, promote productivity, and support creativity.	Students understand and apply advanced software features such as templates and styles to improve the appearance of word-processing documents, spreadsheets, and presentations, and to provide evidence of learning, productivity, and creativity.
<b>b. Students use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works.</b>	Students interpret pictures, images, and charts in word-processing documents and presentations.	Students identify procedures for importing and manipulating pictures, images, and charts in word-processing documents, spreadsheets, presentations, and other creative works.	Students describe how to use common software and utilities to create, open, and edit pictures, images, and charts for use in developing models, publications, presentations, and other creative works.	Students analyze a plan and procedures for development of a multimedia product (e.g., model, presentation, webcast, publication, other creative work) and identify authoring tools, other hardware and software resources, research, and team personnel needed to plan, create, and edit the product.

<b>Standard 4</b> <i>Technology communications tools</i>	<b>Novice</b> <i>By the end of Grade 2</i>	<b>Basic</b> <i>By the end of Grade 5</i>	<b>Proficient</b> <i>By the end of Grade 8</i>	<b>Advanced</b> <i>By the end of Grade 12</i>
<b>a. Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.</b>	Students recognize procedures for safely and securely using telecommunications tools (e.g., e-mail, newsgroups) to read, send, or post electronic messages.	Students identify telecommunications tools and online resources for collaborative projects with other students who are studying similar concepts.	Students know how to use telecommunications tools such as e-mail, discussion groups, and online collaborative projects to exchange data collected, and learn curricular concepts by communicating with peers, experts, and other audiences.	Students plan and implement collaborative projects (with peers, experts, or other audiences) using advanced telecommunications tools (e.g., groupware, interactive Web sites, simulations, joint data collection, video-conferencing) to support curriculum concepts or benefit the local, regional, or global community.
<b>b. Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.</b>	Students know how to open and view products (e.g., presentations, newsletters, Web pages) containing a variety of media and formats to gather information and ideas relevant to the curriculum.	Students identify a variety of media and formats to create and edit products (e.g., presentations, newsletters, Web pages, portable document format files) that communicate information and ideas from the curriculum.	Students know how to use a variety of media and formats to design, develop, publish, and present products (e.g., presentations, newsletters, Web pages) that effectively communicate information and ideas from the curriculum to multiple audiences.	Students know how to use a variety of media and formats to design, develop, publish, and present products, (e.g., presentations, newsletters, Web sites) that incorporate information from the curriculum and communicate original ideas to multiple audiences.

<b>Standard 5</b> <i>Technology research tools</i>	<b>Novice</b> <i>By the end of Grade 2</i>	<b>Basic</b> <i>By the end of Grade 5</i>	<b>Proficient</b> <i>By the end of Grade 8</i>	<b>Advanced</b> <i>By the end of Grade 12</i>
<b>a. Students use technology to locate, evaluate, and collect information from a variety of sources.</b>	Students identify steps for using technology resources such as CD-ROMs (reference or educational software) to locate information on assigned topics in the curriculum.	Students describe steps for using common Web search engines and basic search functions of other technology resources to locate information; and describe guidelines for evaluating information from a variety of sources for its relevance to the curriculum.	Students identify advanced search using Boolean logic and other advanced search functions; and know how to evaluate information from a variety of sources for accuracy, bias, appropriateness, and comprehensiveness.	Students know how to locate, select, and use advanced technology resources (e.g., expert systems, intelligent agents, real-world models and simulations) to enhance their learning of curriculum topics selected.
<b>b. Students use technology tools to process data and report results.</b>	Students know how to use common databases (library catalogs, online archives) to find and report information on assigned topics in the curriculum.	Students describe method for performing basic queries to process data and method for reporting results that address assigned topics in the curriculum.	Students identify and implement procedures for designing, creating, and populating a database; and for performing queries to process data and report results relevant to an assigned hypothesis or research question.	Students formulate a hypothesis or research question on a curriculum topic they choose; and design, create, and populate a database to process data and report results.
<b>c. Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks.</b>	Students know how to use technology resources (e.g., simple conceptual mapping software, drawing software to show steps in sequence, etc.) to recognize, record, and organize information that addresses assigned topics in the curriculum.	Students identify, record, and organize information that addresses assigned topics in the curriculum by selecting and using appropriate information and communication technology tools and resources (e.g., slide show, timeline software, database, conceptual mapping, etc.)	Students know how to select and use appropriate information and communication technology tools and resources to collect and analyze information and report results on an assigned hypothesis or research question.	Students formulate a hypothesis or research question; and select and use appropriate information and communication technology tools and resources for collecting and analyzing information and reporting results to multiple audiences.

<b>Standard 6</b> <i>Technology problem-solving and decision-making tools</i>	<b>Novice</b> <i>By the end of Grade 2</i>	<b>Basic</b> <i>By the end of Grade 5</i>	<b>Proficient</b> <i>By the end of Grade 8</i>	<b>Advanced</b> <i>By the end of Grade 12</i>
<b>a. Students use technology resources for solving problems and making informed decisions.</b>	Students identify which information and communication technology tools and resources can be used to complete a certain task (e.g., a word processor to type a letter, a drawing program to make a picture, presentation software to make a slide show).	Students apply their knowledge of information and communication technology tools to select appropriate technology tools and resources to solve a specific problem or make a decision.	Students identify two or more types of information and communication technology tools/resources that can be used for solving a specific problem and presenting results, or for identifying and presenting an informed rationale for a decision.	Students describe integration of two or more information and communication technology tools and resources to collaborate with peers, community members, experts, and others to solve a problem and present results, or to present an informed rationale for a decision.
<b>b. Students employ technology in the development of strategies for solving problems in the real world.</b>	Students identify appropriate information and communication technology tools and resources to draw a picture, take a digital picture, or write a paragraph depicting a real-world problem.	Students know how to select and use appropriate information and communication technology tools and resources to collect, organize, and evaluate information relevant to a real-world problem.	Students describe the information and communication technology tools they would use to compare information from different sources, analyze findings, determine the need for additional information, and draw conclusions for addressing a real-world problem.	Students integrate information and communication technology to analyze a real-world problem, design and implement procedures to monitor information, set timelines, and evaluate progress toward the solution of a real-world problem.