

## ISTE Technology Foundation Standards for Students

### 1. Basic operations and concepts

Students demonstrate a sound understanding of the nature and operation of technology systems. Students are proficient in the use of technology.

### 2. Social, ethical, and human issues

Students understand the ethical, cultural, and societal issues related to technology. Students practice responsible use of technology systems, information, and software. Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

### 3. Technology productivity tools

Students use technology tools to enhance learning, increase productivity, and promote creativity. Students use productivity tools to collaborate in constructing technology-enhanced models, preparing publications, and producing other creative works.

### 4. Technology communications tools

Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences. Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

### 5. Technology research tools

Students use technology to locate, evaluate, and collect information from a variety of sources. Students use technology tools to process data and report results. Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.

### 6. Technology problem-solving and decision-making tools

Students use technology resources for solving problems and making informed decisions. Students employ technology in the development of strategies for solving problems in the real world.

## Prior to completion of Grade 3, students will:

1. Use input devices (e.g., mouse, keyboard, remote control) and output devices (e.g., monitor, printer) to successfully operate computers, VCRs, audio tapes, and other technologies. (1)

## NTAC Recommended Technology Competencies

- 1.01 Demonstrate basic computer skills such as:
  - Startup and shut down
  - Launch and quit an application
  - Operate the following within GUI
  - Resize windows
  - Switch applications
  - Scroll Bar
  - Navigate menu/task bar
  - Store files appropriately and securely for easy retrieval
  - Printing
  - Log in and Log out as required
  - Adjust volume control
  - Operate peripheral devices with assistance
- 1.02 Use the proper keyboarding techniques of body posture, home row positioning, and use of both hands.
- 1.03 Operate other technologies with assistance.

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### ISTE Performance Indicators

2. Use a variety of media and technology resources for directed and independent learning activities. (1, 3)

### NTAC Recommended Technology Competencies

- 2.01. Locate and retrieve information from age appropriate electronic media, with guidance.
- 2.02. Understand which applications are used for which purposes.
- 2.03. In specific content areas, use teacher directed tools and technology resources for example:
  - Presentation software
  - Electronic reference materials
  - Internet search engines
  - Skill building software
  - Electronic card catalog
  - Word processing
  - Drawing software

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## ISTE Performance Indicators

3. Communicate about technology using developmentally appropriate and accurate terminology. (1)

## NTAC Recommended Technology Competencies

- 3.01 Understand and use various technical terms such as:
  - user ID
  - password
  - click and drag
  - boot
  - delete
  - highlight
  - reboot
  - launch
  - desktop
  - icon
  - folder
  - mouse
  - monitor
  - select
  - restart
  - hard drive

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## ISTE Performance Indicators

4. Use developmentally appropriate multimedia resources (e.g., interactive books, educational software, elementary multimedia encyclopedias) to support learning. (1)

## NTAC Recommended Technology Competencies

- 4.01 Use electronic reference materials to locate information to support learning projects.
- 4.02 Use a variety of media resources as directed by teacher.

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**ISTE Performance Indicators**

5. **Work cooperatively and collaboratively with peers, family members, and others when using technology in the classroom. (2)**

**NTAC Recommended Technology Competencies**

- 5.01 **In a group situation, students will select and use appropriate tools and technology resources to meet the needs of a specific project or assignment.**

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**ISTE Performance Indicators**

6. Demonstrate positive social and ethical behaviors when using technology. (2)

**NTAC Recommended Technology Competencies**

- 6.01 Exhibit legal and ethical behaviors when using information and technology by:
  - Citing sources with guidance
  - Using copyrighted materials appropriately
  - Using Internet sites and resources appropriately
  - Respecting privacy and security
  - Honoring an acceptable use policy
  - Understanding the consequences of misuse

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**ISTE Performance Indicators**

7. Practice responsible use of technology systems and software. (2)

**NTAC Recommended Technology Competencies**

- 7.01 Demonstrate proper use and care of hardware and software, such as media, keyboards, mice, and monitors.

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### ISTE Performance Indicators

8. Create developmentally appropriate multimedia products with support from teachers, family members, or student partners. (3)

### NTAC Recommended Technology Competencies

- 8.01 Use basic creativity tools for reports and projects, with assistance, for example:
  - Painting and drawing programs
  - Create graphs, tables, timelines
  - Create graphic images using age appropriate software
  - Select graphics from another source and insert into a document
  - Add sounds to a document
  - Manipulate graphics

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### ISTE Performance Indicators

9. Use technology resources (e.g., puzzles, logical thinking programs, writing tools, digital cameras, drawing tools) for problem solving, communication, and illustration of thoughts, ideas, and stories. (3, 4, 5, 6)

### NTAC Recommended Technology Competencies

- 9.01 Select and use appropriate tools and technology resources to meet the needs of specific projects or assignments.
- 9.02 Examine, compare, and contrast data for problem solving.
- 9.03 Draw conclusions from charts and graphs.
- 9.04 Demonstrate word processing skills such as :
  - Text wrap
  - Font formatting
  - Alignment and line spacing
  - Editing tools (i.e. spell check, thesaurus)
  - Documents integrating text and graphics

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### **ISTE Performance Indicators**

10. *INTERNET* Gather information and communicate with others using telecommunications, with support from teachers, family members, or student partners. (4)

### **NTAC Recommended Technology Competencies**

- 10.01 Locate and retrieve information from teacher selected online resources.
- 10.02 Differentiate between fact and opinion.
- 10.03 Determine which information is useful.
- 10.04 Understand the concept of using E-mail to correspond.
- 10.05 Understand how computers are used in our world.
- 10.06 Use a browser to:
  - Enter a URL to access a specific web site
  - Use a bookmarked web page and navigate to links
  - Go back and forward through previously loaded pages
  - Differentiate between pointer functions
  - Reload/refresh a web page as necessary

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**ISTE Performance Indicators  
Prior to completion of Grade 5, students will:**

1. Use keyboards and other common input and output devices (including adaptive devices when necessary) efficiently and effectively. (1)

**NTAC Recommended Technology Competencies**

- 1.01 Understand various technical terms such as:
  - user ID
  - password
  - click and drag
  - boot (start)
  - delete,
  - highlight
  - reboot (restart)
  - launch
  - desktop
  - icon
  - folder
  - mouse
  - monitor
  - select,
  - RAM
  - hard drive.
- 1.02 Demonstrate basic computer skills for example:
  - Turn on and shut down computer
  - "Launch" and exit/quit an application
  - Demonstrate proper care and use of disks, disk drives, CDs, CD drives, printers, mouse and keyboard
  - Operate the following within Graphic User Interface (GUI): pull down menus, buttons, icons, general navigation, point/click/drag, save
  - Adjust volume control
  - Navigate through the network to access and save to servers
  - Log in/dial in to network services and/or servers
- 1.03 Demonstrate an awareness of correct typing posture, home row and finger placement when keyboarding.

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<p><b>1. Basic operations and concepts</b></p> <ul style="list-style-type: none"> <li>• Students demonstrate a sound understanding of the nature and operation of technology systems.</li> <li>• Students are proficient in the use of technology.</li> </ul> <p><b>2. Social, ethical, and human issues</b></p> <ul style="list-style-type: none"> <li>• Students understand the ethical, cultural, and societal issues related to technology.</li> <li>• Students practice responsible use of technology systems, information, and software.</li> <li>• Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.</li> </ul> <p><b>3. Technology productivity tools</b></p> <ul style="list-style-type: none"> <li>• Students use technology tools to enhance learning, increase productivity, and promote creativity.</li> <li>• Students use productivity tools to collaborate in constructing technology-enhanced models, preparing publications, and producing other creative works.</li> </ul> <p><b>4. Technology communications tools</b></p> <ul style="list-style-type: none"> <li>• Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.</li> <li>• Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.</li> </ul> <p><b>5. Technology research tools</b></p> <ul style="list-style-type: none"> <li>• Students use technology to locate, evaluate, and collect information from a variety of sources.</li> <li>• Students use technology tools to process data and report results.</li> <li>• Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.</li> </ul> <p><b>6. Technology problem-solving and decision-making tools</b></p> <ul style="list-style-type: none"> <li>• Students use technology resources for solving problems and making informed decisions.</li> <li>• Students employ technology in the development of strategies for solving problems in the real world..</li> </ul>	<p><b>2. Discuss common uses of technology in daily life and the advantages and disadvantages those uses provide. (1, 2)</b></p>	<p><b>2.01</b> To be implemented by individual districts in areas such as:</p> <ul style="list-style-type: none"> <li>• career education</li> <li>• social studies</li> <li>• technology education</li> <li>• science</li> </ul> <p><b>2.02</b> Demonstrate an understanding of how technology impacts the home and school. (e.g. virtual field trips, e-mail, and digital media, homework, on-line shopping, web resources).</p>

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## ISTE Performance Indicators

3. Discuss basic issues related to responsible use of technology and information and describe personal consequences of inappropriate use. (2)

## NTAC Recommended Technology Competencies

- 3.01 Understand and demonstrate responsible use of technology and information by:
  - Citing sources
  - Using copyrighted materials appropriately
  - Understanding the appropriate use of Internet sites and resources.
  - Respecting privacy and security
  - Understanding the consequences of misuse .
  - Understanding and honoring an acceptable use policy

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## ISTE Performance Indicators

4. Use general purpose productivity tools and peripherals to support personal productivity, remediate skill deficits, and facilitate learning throughout the curriculum. (3)

## NTAC Recommended Technology Competencies

- 4.01 Access and use information from:
  - Electronic library catalog system
  - Electronic reference materials (e.g. Atlas, encyclopedia)
  - Internet sites
- 4.02 Use word processing/publishing to manage files and manipulate documents for example:
  - Start a new document
  - Open, name, save, quit, move, reopen files
  - Set font size, color and style
  - Set alignment and spacing
  - Check spelling and word usage (thesaurus)
  - Copy, cut, paste and delete text and graphics
  - Print to appropriate media
- 4.03 Use appropriate tools and technology resources to meet the needs of specific projects or assignments (e.g. word processing, spreadsheet, data base, drawing).
- 4.04 Use appropriate tools and technology resources to remediate skill deficits(e.g.reading comprehension, phonics, basic math facts, and language skills).
- 4.05 Use an existing database to gather and input data.
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### ISTE Performance Indicators

5. 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. (3, 4)

### NTAC Recommended Technology Competencies

- 5.01 Use basic creativity tools for reports and projects (e.g. paint, drawing, internet sites and presentation programs).
- 5.02 Use appropriate tools and technology resources to meet the needs of specific projects or assignments (e.g. transitions, sound, animations, organization, display).
- 5.03 Use computer-input devices to capture and integrate images. (e.g. digital camera, scanner, CD ROM, internet).

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**ISTE Performance Indicators**

6. Use telecommunications efficiently to access remote information, communicate with others in support of direct and independent learning, and pursue personal interests. (4)

**NTAC Recommended Technology Competencies**

- 6.01 Use a browser to:
  - Enter a URL to access a specific web site
  - Use a bookmarked web page and navigate to links
  - Use appropriate browser commands (e.g Go, History, back and forward)
  - Differentiate between pointer functions
- 6.02 Use age appropriate search engines to analyze search results to select appropriate sites and resources.

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  - Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
3. Technology productivity tools
  - Students use technology tools to enhance learning, increase productivity, and promote creativity.
  - Students use productivity tools to collaborate in constructing technology-enhanced models, preparing publications, and producing other creative works.
4. Technology communications tools
  - Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.
  - Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.
5. Technology research tools
  - Students use technology to locate, evaluate, and collect information from a variety of sources.
  - Students use technology tools to process data and report results.
  - Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.
6. Technology problem-solving and decision-making tools
  - Students use technology resources for solving problems and making informed decisions.
  - Students employ technology in the development of strategies for solving problems in the real world.

### ISTE Performance Indicators

7. 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. (4, 5)

### NTAC Recommended Technology Competencies

- 7.01 Use a browser to:
  - Enter a URL to access a specific web site
  - Use a bookmarked web page and navigate to links.
  - Use appropriate browser commands (e.g. Go, History, back and forward)
  - Differentiate between pointer functions
- 7.02 Use age appropriate search engines to analyze search results to select appropriate sites and resource.
- 7.03 Use basic creativity tools for reports and engaged learning projects (e.g. paint, drawing, internet sites and presentation programs).

### ISTE Technology Foundation Standards for Students

1. Basic operations and concepts
  - Students demonstrate a sound understanding of the nature and operation of technology systems.
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### ISTE Performance Indicators

8. Use technology resources (e.g., calculators, data collection probes, videos, educational software) for problem solving, self-directed learning, and extended learning activities. (5, 6)

### NTAC Recommended Technology Competencies

- 8.01 Use appropriate tools and technology resources to enrich/extend specific projects or assignments (e.g. calculators, videos, educational software, and internet resources).
- 8.02 Use basic creativity tools for reports and engaged learning projects (e.g. paint, drawing, internet sites and presentation programs).

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### ISTE Performance Indicators

9. Determine which technology is useful and select the appropriate tool(s) and technology resources to address a variety of tasks and problems. (5, 6)

### NTAC Recommended Technology Competencies

- 9.01 Select and use appropriate tools and technology resources to address a variety of tasks and projects. (e.g. word processing document, video, multi media, spreadsheet, data base).

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### **ISTE Performance Indicators**

10. Evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources. (6)

### **NTAC Recommended Technology Competencies**

- 10.01 Use age appropriate search engines to analyze search results to select appropriate sites and resource.
- 10.02 Analyze the usefulness of information by:
  - Evaluating the relevance, appropriateness of available resources.
  - Differentiate between fact and opinion as presented in electronic information sources.

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  - Students use technology resources for solving problems and making informed decisions.
  - Students employ technology in the development of strategies for solving problems in the real world.

**ISTE Performance Indicators  
Prior to completion of Grade 8 students will:**

1. Apply strategies for identifying and solving routine hardware and software problems that occur during everyday use. (1)

**NTAC Recommended Technology Competencies**

- 1.01 Understand and use various technical terms such as user ID, password, click and drag, boot, delete, highlight, reboot, launch, desktop, icon, folder, mouse, monitor, select, restart, RAM, hard drive, peripherals.
- 1.02 Demonstrate basic computer skills such as:
  - Turn on and shut down computer
  - "Launch" and exit/quit an application
  - Knowledge of removable storage media, printers, graphic input devices, video output devices
  - Demonstrate proper care and use of disk drives, CD drives, mouse and keyboard
  - Operate the following within Graphic User Interface (GUI): pull down menus, general navigation, point/click/drag, save, windowing/multitasking
  - Adjust volume control while in programs
  - Navigate through the network to access and save to servers
  - Log in/dial in to network services and/or servers

## NTAC Standards Project Grade 8

### ISTE Technology Foundation Standards for Students

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  - Students understand the ethical, cultural, and societal issues related to technology.
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### ISTE Performance Indicators

2. Demonstrate knowledge of current changes in information technologies and the effect those changes have on the workplace and society. (2)

### NTAC Recommended Technology Competencies

- 2.01 To be implemented by individual districts in areas such as:
  - career education
  - social studies
  - industrial technology/technology education
  - science
- 2.02 Demonstrate an understanding of how technology impacts the classroom, the workplace and society (e.g. online databases, email, list serves, video conferencing, virtual field trips, digital media, distance learning, and e-commerce).

### ISTE Technology Foundation Standards for Students

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### ISTE Performance Indicators

3. Exhibit legal and ethical behaviors when using information and technology, and discuss consequences of misuse. (2)

### NTAC Recommended Technology Competencies

- 3.01 Exhibit legal and ethical behaviors when using information and technology by:
  - Citing sources
  - Using copyrighted materials appropriately
  - Understanding the appropriate use of Internet sites and resources.
  - Respecting privacy and security
  - Understanding the consequences of misuse.
  - Understanding and honoring an acceptable use policy

## ISTE Technology Foundation Standards for Students

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## ISTE Performance Indicators

4. Use content-specific tools, software, and simulations (e.g., environmental probes, graphing calculators, exploratory environments, Web tools) to support learning and research. (3, 5)

## NTAC Recommended Technology Competencies

- 4.01 Select and use appropriate tools and technology resources to meet the needs of specific content areas. Examples might include:
  - Applicable to all content areas - web resources, word processing, video technologies, digital cameras, scanners, presentation software, topic specific software
  - Language Arts/Reading - electronic dictionaries, thesauri, encyclopedias; skill building software
  - Math - spreadsheets, databases, graphing calculators, tessellation software, graphing software, skill building software
  - Science - simulations, graphing software, graphing calculators, spreadsheets, databases, environmental probes
  - Social Studies - simulations, graphing software, graphing calculators
  - General, Instrumental and Vocal Music - Midi software and hardware
  - Art - paint/draw software, animation software, digital imaging
  - Drama/Speech - scripting software
  - Physical Education - heart rate monitors, fitness software, databases, spreadsheets
  - Life Skills/Health/Home Economics - nutrition software/career software
  - Foreign Language - skill building software

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**ISTE Performance Indicators**

5. Apply productivity/multimedia tools and peripherals to support personal productivity, group collaboration, and learning throughout the curriculum. (3, 6)

**NTAC Recommended Technology Competencies**

- 5.01 Access and use information from:
  - Electronic library resources (e.g. Infotrack, SIRS, etc.)
  - Electronic library catalog system
  - Electronic reference materials (e.g. Atlas, Body Atlas, Facts on File, encyclopedia)
  - Internet sites that index information
- 5.02 Use word processing/publishing to:
  - Manage files and manipulate documents (e.g. Start a new document, open, name, save, quit, move, rename and reopen files)
  - Set font size, color and style
  - Set alignment and spacing
  - Check spelling and word usage (thesaurus)
  - Copy, cut, paste and delete text and graphics
  - Format documents (e.g. setting and changing tabs, setting and changing margins)
  - Find and replace text
  - Demonstrate keyboarding skills through speed and accuracy\*
  - Insert and manipulate graphics from another source
  - Print to appropriate media
- 5.03 Use computer-input devices to capture and integrate written, audio, and video elements. (e.g. CD-ROMs, scanners and digital cameras).
- 5.04 Select and use appropriate tools and technology resources to meet the needs of specific projects or assignments (e.g. transitions, sound, animations, organization, display).
- 5.05 Use basic creativity tools for reports and projects such as paint, drawing and planning programs.

**The keyboarding accuracy rate for District 214, is thirty (30) words per minute with no more than five (5) errors.**

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### ISTE Performance Indicators

6. 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. (4, 5, 6)

### NTAC Recommended Technology Competencies

- 6.01 Use a non-relational database to:
  - Create a new database by defining fields using at least text fields
  - Input data
  - Sort information based on 1 key field
  - Use data to create report (print it out)
  - **Understand data base terminology such as field, record, etc.**
- 6.02 Use a spreadsheet to:
  - Create a new spreadsheet by defining columns and rows
  - Enter a formula for calculation
  - Input Data
  - Sort information based on 1 column
  - Create a table/chart
  - Generate a report (print it out)
- 6.03 Use computer-input devices to capture and integrate text, audio or video elements. (e.g. CD-ROMs, scanners and digital cameras).
- 6.04 Select and use appropriate tools and technology resources to meet the needs of specific projects or assignments (e.g. transitions, sound, animations, organization, display).
- 6.05 Use basic creativity tools for reports and projects such as paint, drawing and planning programs.

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### ISTE Performance Indicators

7. 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, 5)

### NTAC Recommended Technology Competencies

- 7.01 Use a non-relational database to:
  - Create a new database by defining fields using at least text fields
  - Input data
  - Sort information based on 1 key field
  - Use data to create report (print it out)
  - **Understand data base terminology such as field, record, etc.**
- 7.02 Use a spreadsheet to:
  - Create a new spreadsheet by defining columns and rows
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### ISTE Performance Indicators

8. Select and use appropriate tools and technology resources to accomplish a variety of tasks and solve problems. (5, 6)

### NTAC Recommended Technology Competencies

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### ISTE Performance Indicators

9. Use technology resources (e.g., puzzles, logical thinking programs, writing tools, digital cameras, drawing tools) for problem solving, communication, and illustration of thoughts, ideas, and stories. (3, 4, 5, 6)

### NTAC Recommended Technology Competencies

- 9.01 Understand relationship between hardware, software, network connectivity to:
  - Access information
  - Download files
  - Create hyperlinks
- 9.02 Select and use appropriate tools and technology resources to meet the needs of specific projects or assignments (e.g. transitions, sound, animations, organization, display).

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## ISTE Performance Indicators

10. Gather information and communicate with others using telecommunications, with support from teachers, family members, or student partners. (4)

## NTAC Recommended Technology Competencies

- 10.01 Use a browser to:
  - Enter a URL to access a specific web site
  - Use a bookmarked web page and navigate to links or commands (Go, History etc.)
  - Go back and forward through previously loaded pages
  - Differentiate between pointer functions
  - Jump locations to previously loaded pages
  - Reload/refresh a web page as necessary
- 10.02 Use search engines to:
  - Develop effective keyword strategies including simple Boolean logic
  - Analyze search results to select appropriate sites and resources
- 10.03 Analyze the usefulness of information by:
  - Evaluating the accuracy, relevance, appropriateness and comprehensiveness of available resources
  - Identifying the bias of electronic information sources