"Learning Today, Leading Tomorrow"

Instructional Technology Grades K-6 Curriculum Guide

INTRODUCTION

This Computer Technology Curriculum Guide presents a map for raising the level of student performance in all of our classrooms. It helps enhance the uses of technology already in place to support our children's educational experiences and introduces new structures. It addresses our present and future needs while recognizing that the world and technology are rapidly changing.

Technology can be incorporated, in an appropriate manner, into every classroom and curricular in the district. It will not supplant the teacher or the human interaction that is so essential for learning; it is intended for use as a tool to enhance learning for all children.

Students will utilize powerful technology tools to express their ideas more clearly; to access information beyond anything available in traditional classrooms today; and to assist them in collaborating with other students around the globe on projects that have a real impact on the community. Technology also will assist students in visualizing abstract concepts, participate in rigorous simulations, gather data via scientific probes, analyze and manipulate data, compose music, create art; and create digital portfolios of their work.

The pages that follow are provided as a guide to help students tap into the transformational power of technology to fundamentally reshape our schools and classrooms to accommodate these changes.

This transformation will:
- Bring the world to the classroom. No matter what their socioeconomic or ethnic background, and no matter where they live, the learning field for all students can be leveled.
- Students are introduced to people, places, and ideas to which they might otherwise not be exposed;
- Enable students to learn by doing. Research has now confirmed what many instinctively knew - that children, who are actively engaged in learning, learn more;
- Make parents partners in their children's education by connecting the school with homes, libraries and other access portals;
- Enable educators to better accommodate the varied learning styles and pace within the classroom. This individualized instruction can be a key factor in student achievement.
- Encourage students to become lifelong learners who can access, analyze, and synthesize information;
- Encourage educators to become guides and coaches to students, rather than be "the sage on the stage;" and
- Make students proficient in the basic technological skills needed to take their place in society- whether they enter the working world directly after high school or pursue further formal education.

NATIONAL EDUCATIONAL TECHNOLOGY STANDARDS (NETS)

The technology foundation standards for students are divided into six broad categories. Standards within each category are to be introduced, reinforced, and mastered by students. These categories provide a framework for linking performance indicators within the Profiles for Technology Literate Students to the standards. Teachers can use these standards and profiles as guidelines for planning technology-based activities in which students achieve success in learning, communication, and life skills.

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, prepare publications, and produce 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 for 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.

INSTRUCTIONAL TECHNOLOGY (K-6) PACING GUIDE

This guide was created to provide instructional technology teachers with a time frame to complete the New York State Technology Curriculum.

Unit	Unit Title
1	Basic Computer Concepts and Operations
2	Technology Productivity Tools / Keyboarding
3	Social, Ethical, and Human Issues
4	Word Processing
5	Presentation Software
6	Technology Problem-Solving, Research, Decision-Making Skills
7	Internet skills
8	Effective Research Strategies
9	Electronic Graphic Organizers

Unit 1: Basic Computer Concepts and Operations

Students will learn and be able to:	K	1	2	3	4	5	6	7	8
Identify the main parts of the computer (keyboard, monitor, mouse, drives and shutdown)	x	x	x	x	x	x	x	x	x
Login and logout of computers properly	x	x	x	x	x	x	x	x	x
"Launch" programs	x	x	x	x	x	x	x	x	x
Use mouse correctly	x	x	x	x	x	x	x	x	x
Place the cursor at a specific location on the screen	x	x	x	x	x	x	x	x	x
Double-click to open folders	x	x	x	x	x	x	x	x	x
Open and close computer Programs	x	x	x	x	x	x	x	x	x
Print files under teacher direction	x	x	x	x	x	x	x	x	x
Print files independently	x	x	x	x	x	x	x	x	x
Toggle between 2 programs				x	x	x	x	x	x
Show and hide toolbars					x	x	x	x	x
Use short cuts to perform functions in various applications					x	x	x	x	x
Print specific pages					x	x	x	x	x
Access files from documents folder and shared folder with teacher assistance					x	x	x	x	x
Save files to documents folder during whole group lessons					x	x	x	x	x
Save to documents folder and shared folder					x	x	x	x	x
Access files from documents folder and shared folder					x	x	x	x	x
Manipulate graphics (sizing, moving, text wrap, etc.)					x	x	x	x	x
Change page orientation					x	x	x	x	x
Save to documents and shared folders independently					x	x	x	x	x
Create folders to organize files					x	x	x	x	x
Delete files and folders from documents folder						x	x	x	x
Apply strategies for identifying and solving routine hardware and software problems that occur during everyday use								x	x

Unit 2: Technology Productivity Tools / Keyboarding

Students will learn and be able to:	K	1	2	3	4	5	6	7	8
Use correct posture	x	x	x	x	x	x	x	x	x
Begin to locate and use letters, numbers, etc.	x	x	x	x	x	x	x	x	x
Identify and locate special keys such as, enter, spacebar, caps lock, shift keys	x	x	x	x	x	x	x	x	x
Introduce home row and correct finger placement				x	x	x	x	x	x
Use proper fingering Techniques				x	x	x	x	x	x
Use proper typing technique with efficiency and accuracy without looking at the keyboard						x	x	x	x
Review and use correct posture and "home row" typing positions introduced in earlier grades. Encourage students to type classroom reports and assignments using correct finger positions							x	x	x

Unit 3: Social, Ethical, and Human Issues

Students will learn and be able to:	K	1	2	3	4	5	6	7	8
Discuss and comply with Network Use & Internet Policy	x	x	x	x	x	x	x	x	x
Demonstrate appropriate computer etiquette	x	x	x	x	x	x	x	x	x
Respect the privacy of all users	x	x	x	x	x	x	x	x	x
Use appropriate judgment upon entering Internet sites				x	x	x	x	x	x
Citing material taken from another source, under issues of plagiarism as they apply to information technology					x	x	x	x	x
Obey copyright laws regarding student generated material					x	x	x	x	x
Demonstrate proper use of transferring files from home to school					x	x	x	x	x
Determine what is accurate information found on the internet					x	x	x	x	x
Appropriately cites sources using prescribed formats						x	x	x	x
Understand and observe information technology licensing restrictions						x	x	x	x
Exhibit ethical behavior relating to privacy, ethics, passwords and personal information								x	x
Demonstrate and understand copyright by citing sources of copyrighted materials in papers, projects and multimedia presentations								x	x

Unit 4: Word Processing

Students will learn and be able to:	K	1	2	3	4	5	6	7	8
Type first name, ABC's, #'s and/or simple words	x	x	x	x	x	x	x	x	x
Use the delete and backspace appropriately		x	x	x	x	x	x	x	x
Perform basic formatting tasks including font, style, color, bold, italic, underline, alignment			x	x	x	x	x	x	x
Use simple text editing skills			x	x	x	x	x	x	x
Insert clip art			x	x	x	x	x	x	x
Type short writing pieces			x	x	x	x	x	x	x
Type with one space between word between words and be consistent with spacing after a sentence (1 or 2 spaces is acceptable)			x	x	x	x	x	x	x
Use the return and tab keys			x	x	x	x	x	x	x
Use spell check and Thesaurus				x	x	x	x	x	x
Rename and move files				x	x	x	x	x	x
Select and deselect text				x	x	x	x	x	x
Cut, copy, paste, within a document				x	x	x	x	x	x
Use page setup options				x	x	x	x	x	x
Use borders/drawing tool/graphics				x	x	x	x	x	x
Insert graphics from outside source				x	x	x	x	x	x
Use formatting functions and numbering, indents, page breaks, margins and columns						x	x	x	x
Copy and paste information from the internet into a Microsoft Word document for note taking purposes							x	x	x
Use the Thesaurus tool to broaden their scope of word use							x	x	x
Cite Internet sources							x	x	x

Unit 5: Presentation Software

Students will learn and be able to:	K	1	2	3	4	5	6	7	8
Open and exit presentation application	x	x	x	x	x	x	x	x	x
Create a new slide or presentation and open a saved slide or presentation				x	x	x	x	x	x
Choose a layout				x	x	x	x	x	x
Change order of slides				x	x	x	x	x	x
Cut, copy, paste within a Presentation				x	x	x	x	x	x
Insert or delete slides				x	x	x	x	x	x
Arrange objects on the slide				x	x	x	x	x	x
Save a presentation				x	x	x	x	x	x
Add slide transitions to the slide show				x	x	x	x	x	x
Present presentation to an audience				x	x	x	x	x	x
Use text special effects such as Word Art					x	x	x	x	x
Insert graphics, clip art and/or digital pictures				x	x	x	x	x	x
Add animation to text and graphics				x	x	x	x	x	x
Edit color schemes and layout arrangement				x	x	x	x	x	x
Insert movie clips and recorded sound				x	x	x	x	x	x
Edit clip art						x	x	x	x
Research, create, publish and present projects related to content areas using a variety of tools								x	x
Choose and create charts or graphic (tables) that best represents data								x	x
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								x	x

Unit 6: Technology Problem-Solving, Research, Decision-Making Skills

Students will learn and be able to:	K	1	2	3	4	5	6	7	8
Access and retrieve information from a variety of sources				x	x	x	x	x	x
Locate information on a subject using electronic encyclopedias				x	x	x	x	x	x
Locate information outside the library media center using online database				x	x	x	x	x	x
Identify and differentiate between primary and secondary sources				x	x	x	x	x	x
Search the internet by utilizing search strategies: keywords, concepts, subjects, headings				x	x	x	x	x	x
Utilize multiple search engines to locate information for research					x	x	x	x	x
Produce research project incorporating information retrieved from three or more different types of sources						x	x	x	x
Determine the reliability of information found on an internet site						x	x	x	x
Research and evaluate the accuracy and appropriateness of electronic information sources concerning real-world problems						x	x	x	x
Demonstrate information organization skills; use cut/copy paste and downloading features to take notes from internet sites on information in various subjects						x	x	x	x
Differentiate among fact, opinion, propaganda, point of view, and bias of an internet site						x	x	x	x
Select and use appropriate tools and technology resources to accomplish a variety of tasks and problems						x	x	x	x
Decide and evaluate the information from electronic sources as to the effectiveness, content and usefulness								x	x

Unit 7: Internet skills

Students will learn and be able to:	K	1	2	3	4	5	6	7	8
Use a web browser				x	x	x	x	x	x
Use teacher-centered web based activities on topics of study (i.e. scavenger hunts/Web Quests)				x	x	x	x	x	x
Discuss reliability of sources					x	x	x	x	x
Add sites to favorites						x	x	x	x
Make hyperlinks to Internet sites from documents and presentations						x	x	x	x

Unit 8: Effective Research Strategies

Students will learn and be able to:	K	1	2	3	4	5	6	7	8
Use teacher chosen web sites/ reference software to extract and gather information for research				x	x	x	x	x	x
To access real data on topics of study				x	x	x	x	x	x
Use research to gather information for presentations				x	x	x	x	x	x
Cite sources				x	x	x	x	x	x
Copy/paste text and pictures to word processing and multimedia programs				x	x	x	x	x	x
Use effective search strategies to find appropriate sites				x	x	x	x	x	x
Determine what information is important for the given task				x	x	x	x	x	x
Determine what is accurate Information				x	x	x	x	x	x
Research and evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources concerning real-world problems				x	x	x	x	x	x

Unit 9: Electronic Graphic Organizers

Students will learn and be able to:	K	1	2	3	4	5	6	7	8
Open and work with activities in Kidspiration (K-3) or templates in Inspiration (3-6) under teacher direction	x	x	x	x	x	x	x	x	x
Create simple graphic Organizers		x	x	x	x	x	x	x	x
Organize ideas for writing		x	x	x	x	x	x	x	x
Create graphic organizers in language arts, social studies and science			x	x	x	x	x	x	x
Change the fill and text colors, font, and size of symbols			x	x	x	x	x	x	x
Add pictures to their graphic organizers			x	x	x	x	x	x	x
Use activities (Kidspiration) or templates (Inspiration) to create graphic organizers				x	x	x	x	x	x
Use outline feature when preparing to write				x	x	x	x	x	x

INFORMATION LITERACY SKILLS

Kindergarten Information Literacy Skills
- Brainstorms to develop questions or explore problem.
- Relates the question to what is already known. Example: KWL Activate prior knowledge.
- Understands the difference between fact vs. fiction.
- Uses pictures as information sources.
- Uses pictures to record information.
- Shares what was learned orally and visually.

Grade One Information Literacy Skills
- Recognizes table of contents within a book with assistance.
- Recognizes parts of a book (chapter, title, and author).
- Uses simple graphic organizers to organize information with assistance.

Grade Two Information Literacy Skills
- Brainstorms possible print sources of information.
- Chooses from pre-selected materials using 5-finger rule or simple scanning techniques.
- Uses the library online catalog (OPAC) with assistance.
- Recognizes alphabetic and numeric systems with guidance.

Grade Three Information Literacy Skills
- Restates the question in own words.
- Uses alphabetic and numeric systems (Dewey).
- Uses organizational features in print and electronic media (table of contents, subheadings and filters)
- Uses charts, graphs, tables and maps as information sources.
- Reads, views, or listens to sources to identify main ideas, and supporting facts.
- Answers research questions with words and phrases from sources, but not by copying whole sentences.
- Understands concept of plagiarism.
- Uses simple graphic organizers to organize information with assistance.
- Interprets information, develop contrasts and comparisons.
- Identifies and evaluates the strengths and weaknesses of project using a teacher provided rubric.

Grade Four Information Literacy Skills

- Uses questioning, brainstorming, and webbing to identify what is needed. Identifies keywords related to topic.
- Evaluates the accuracy, relevance, appropriateness, and comprehensiveness of information sources with assistance.
- Distinguishes between fact and opinion.
- Identifies what worked in the research process.
- Identifies areas that need improvement.
- Know that new inventions often lead to other new inventions and ways of doing things.
- Uses webbing, mind mapping, lists and simple outlining to organize information.

Grade Five Information Literacy Skills

- Identifies types of information needed.
- Considers and prioritizes possible sources of information print and non-print.
- Use simple bibliographic citation.
- Uses the library online catalog. (OPAC)

Grade Six Information Literacy Skills

- Given a topic, generates a question to be answered or a position to be supported through investigation.
- Assess the appropriateness of the source based on the table of contents, indexes, headings, and subheadings.
- Uses organizational techniques to clarify and relate ideas (e.g., headings, charts, graphs).
- Remembers to use quotation marks when using someone else's words.
- Understands why there might be conflicting information.

Grade Seven Information Literacy Skills

- Generates ideas, keywords, and questions needed to complete the task.
- Understands why there might be conflicting information.
- Paraphrases, summarizes, and organizes information on note cards or electronic media.
- Conducts advanced online searches (Boolean) to find information.

INSTRUCTIONAL TECHNOLOGY LANGUAGE

The following is a list of basic computer related terminology. An understanding of common vocabulary will enhance student learning. Terms are listed by grade level at which they will be introduced. The skills and their related vocabulary at each grade level build upon what was taught previously.

Kindergarten:

Click – press and let go of mouse button once quickly
Close – finish working on a file
Computer – machine that works with, or processes, information that you give it **Cursor** – blinking dot or line that marks the place on the screen where the next letter or symbol you type will appear
Desktop – screen that displays icons for programs, files, and folders
Double-click – press and let go quickly of mouse button twice
Enter key – command key; also, moves cursor to the next line
Icon – small picture or image on the monitor
Keyboard – tool used for typing information into the computer
Log in – connect to the computer network
Log out – disconnect from the computer network
Monitor – computer screen
Mouse – a pointing device used to control the position of the cursor and to click on icons
Mouse pad – the pad the mouse moves on
Open – opens work or a program that has been highlighted
Printer – prints information on paper
Program – piece of software or application
Quit – exit from a program
Return key – command key; also, moves cursor to the next line
Shift key – capital letters produced when this key is held down when typing a letter
Spacebar – long bar on the keyboard that types spaces
Speaker – lets you hear information

Grade One:

Backspace – erases characters to the left of the cursor

Caps lock – capitalizes a whole word or sentence

Close box – little square in the upper left hand corner of a window which, when clicked, closes the window

Delete key – erases information from the computer

Files – data that is stored in the computer

Folder – holds files

Save – used when saved work already has a title

Save as – used when work needs a title before saving

Scroll – move lines of text up, down, or from side to side

Shutdown – turn off computer

Window – box that appears on screen when you run a program

Word processing – set-up, editing (revising and correcting), saving, and printing text

Grade Two:

Align – position text on a screen either centered, left or right

Clip Art – pictures

Data – information that you input to a computer, or that the computer outputs

Database – information stored in a file

Desktop – screen that displays icons for programs and files

Deselect – to click off a selected item

Document – file created containing text and/or graphics

Document folder – folder containing user's work

Drag – moving the mouse while holding the button down to move objects on the screen

Font – characters that come in different styles

Highlight – to select, usually by clicking or dragging with the mouse

Menu – a list of commands or options to choose from

Menu bar – a horizontal strip across the top of a program containing commands or options

Select – to pick or choose

Spell check – word processing tool to check correct spelling and grammar

Style – the type of font

Tab key – moves the cursor to the next tab stop

Grade Three:

Bold – heavy-faced (dark) font

CD-ROM – a flat round disk that stores software or data

Crash – when a computer suddenly stops working

Disk – used to store a program or data

Disk drive – a disk player that runs a disk; can read information on a disk or save information to a disk

Email – electronic mail sent from one computer to another

Finder – program used to find files

Graphics – pictures

Hardware – the parts of the computer that you can see and touch

Home row keys – keys where fingers rest when typing

Hyperlinks – clicking on text or images that connect you to other text or images

Internet – worldwide network of computers

Italics – a font style with characters that slant upward to the right

Memory – the part of a computer where information is stored

Network – a system of interconnected computers

Search engine – software that makes it possible to look for and get material on the internet

Slide – one screen in a multimedia presentation

Slide show – a presentation containing more than one slide

Software – computer program

Text wrap – words automatically move from one line to the next or around a picture

Transitions – special effects used to go from one slide to another in a slide show

Web browser –program used to view web pages

Grade Four:

Animations – moving graphics on a computer screen

Application – computer software that performs a task such as word processing or drawing

Cell – box on a spreadsheet or database that holds data

Cite sources – give credit for information used (similar to a bibliography)

Field – one piece of information in a database

Footer – text that appears at the bottom of every page of a document

Header – text that appears at the top of every page of a document

Input – information that you enter into a computer

Launch – start a program

Launcher – window that shows the icons for programs that can be opened

Layout – the arrangement of text and graphics in a document or information in a database

Output – what the computer produces

Page orientation – direction information is laid out on a computer screen or printed page; landscape has a horizontal layout and portrait has a vertical layout.

Record – collection of related fields in a database; one "card" in a database

Shared folder – folder on a network where a group can share work

Shortcuts – one or more keys you press on the keyboard to complete a task

Spreadsheet – software that works with calculating numbers

Template – predesigned document to which information is added

Thesaurus – word processing tool used to suggest synonyms and antonyms

Toggle – switch between open programs

Toolbar – rows of command buttons

Grade Five:

Action button – used to create actions in a slide show (i.e. change slides, play a sound, create animation)
Application menu – icon in the upper right hand corner of the screen that shows the program that is open
Application switcher – a part of the operating system that allows you to switch between each of the applications that are running at the same time **Export** – take data from one application and use it in another
Import – use data produced by another application
Page break – where one page ends and another begins
Print area –defined area in a file that will be printed

Grade Six:

Formula – equation that performs a calculation on a spreadsheet
Operating system – base software in the computer that all other programs run off of

<u>INSTRUCTIONAL TECHNOLOGY GRADING POLICY</u>

This course of study includes different components, each of which are assigned the following percentages to comprise a final grade.

<u>COMPONENTS</u>

1. **Projects**   →   **50%**

2. **Tests / Quizzes**   →   **15%**

3. **Homework**   →   **20%**

4. **Classwork / Class Participation**   →   **15%**