

New Hampshire's IT Career Pathway
Sixteen Benchmark I. T. Skill and Knowledge Goals
With 124 Learner Outcomes for Grades 4,8,10, and12

<u>IT Skill and Knowledge</u>	<u>IT Literacy – Grade 4</u> <i>Career awareness and IT skills for learning</i>	<u>Rating</u>	<u>Skill Gap</u>	<u>IT Fluency – Grade 8</u> <i>Career exploration and transition for IT skills for learning to IT skills for working</i>	<u>Rating</u>	<u>Skill Gap</u>	<u>IT For All Work – Grade 10</u> <i>Core IT employability for all work</i>	<u>Rating</u>	<u>Skill Gap</u>	<u>IT Employability – Grade 12</u> <i>Initial specialized technical job skills for the IT industry</i>	<u>Rating</u>	<u>Skill Gap</u>
Technology and Society	<ul style="list-style-type: none"> Understands and uses computers as a tool for living and learning Respects the work of others (copyright, acceptable use, responsible use) Understands impact of technology on individuals and communities 	•	•	<ul style="list-style-type: none"> Understands, explains and provides examples of how computers are used as tools for working 	•	•	<ul style="list-style-type: none"> Understands, explains and provides examples of how computers are used to carry out business Understands past and current trends in computer technology 	•	•	<ul style="list-style-type: none"> Understands and explains how IT impacts society and the operation and management of business 	•	•
Information Literacy	<ul style="list-style-type: none"> Appreciates that information can be useful to life and pursues information close to own interests 	•	•	<ul style="list-style-type: none"> Accesses information efficiently and effectively Evaluates information critically and uses information accurately and creatively 	•	•	<ul style="list-style-type: none"> Strives for excellence in information seeking and generation Applies basic principles of visual communication to transferring data into graphics form 	•	•	<ul style="list-style-type: none"> Generates and pursues information and practices ethical behavior in regard to information and information technologies 	•	•
PC Principles and Operation	<ul style="list-style-type: none"> Determines when technology is useful and selects appropriate technology tools and resources Installs and uses programs (disc, CD, download) and uses new simple learning programs Uses computer independently 	•	•	<ul style="list-style-type: none"> Uses PC and MAC computers independently Can teach others to operate computers (turn on, use mouse, call up programs, save and locate files) 	•	•	<ul style="list-style-type: none"> Performs basic personal computer operations 	•	•	<ul style="list-style-type: none"> Understands issues affecting system purchase and upgrade decisions 	•	•
World Wide Web	<ul style="list-style-type: none"> Locates information from web sites Uses search engines Demonstrates responsible behavior while on-line 	•	•	<ul style="list-style-type: none"> Locates and organizes information from internet resources Differentiates between more useful and less useful information 	•	•	<ul style="list-style-type: none"> Uses internet as a research and business tool in a highly effective manner 	•	•	<ul style="list-style-type: none"> Understands and demonstrates use of internet for e-commerce 	•	•
Word Processing to Desktop Publishing	<ul style="list-style-type: none"> Uses word processing for documents, letters and reports (edit, format, spell check) 	•	•	<ul style="list-style-type: none"> Creates complex word processed letters, memos and reports which include tables and footnotes / endnotes in teams 	•	•	<ul style="list-style-type: none"> Creates complex desktop published documents and reports using multiple applications in teams (PhotoShop, PageMaker, Excel, Access) 	•	•	<ul style="list-style-type: none"> Selects, integrates and uses appropriate technologies to create complex professional publications (e.g., yearbook, brochure, multifold flyers) 	•	•

Graphics and Image Processing To Multimedia Publishing	<ul style="list-style-type: none"> Creates simple graphics using drawing and painting software programs Uses scanner and digital camera and images from the web Creates thematic slide shows 	•	•	<ul style="list-style-type: none"> Creates composite imagery integrating photos, drawings and text using drawing or painting software programs Creates a hypermedia presentation 	•	•	<ul style="list-style-type: none"> Creates original audio, video and animation elements Incorporates and edits sound and images from various sources of input Creates interactive multimedia presentations 	•	•	<ul style="list-style-type: none"> Selects, integrates and uses appropriate media for complex interactive multimedia presentations such as web presentation with music, video, and animation, CD-ROM, or video game 	•	•
Keyboarding	<ul style="list-style-type: none"> Familiar with keyboard functions Keyboards with minimal frustration 	•	•	<ul style="list-style-type: none"> Keyboards to 20 words per minute 	•	•	<ul style="list-style-type: none"> Keyboarding to 35 words per minute including numbers and symbols 	•	•	<ul style="list-style-type: none"> Proficient in keyboarding skill (accuracy and speed) 	•	•
E-Mail	<ul style="list-style-type: none"> Corresponds with an e-mail partner 	•	•	<ul style="list-style-type: none"> Requests and sends information globally (with attachments) concerning research topics Uses a listserv 	•	•	<ul style="list-style-type: none"> Understands e-mail system components and organization Uses appropriate e-mail writing style and protocols for various purposes (personal/business) 	•	•	<ul style="list-style-type: none"> Moderates listserv Manages e-mail address books and listservs Uses e-mail effectively and appropriately 	•	•
Software and Systems Integration	<ul style="list-style-type: none"> Recognizes that files/software/hardware have different formats (file types, extensions, operating systems) Selects and uses software appropriate to task (e.g., KidPix, Word) 	•	•	<ul style="list-style-type: none"> Integrates various pieces of software (word processing, images from Illustrator, photos from PhotoShop) into one product/project 	•	•	<ul style="list-style-type: none"> Works with and integrates items into project work from multiple operating systems 	•	•	<ul style="list-style-type: none"> Coordinates communication between different operating environments (e.g., facilitating data exchange and communication between Unix and Windows NT networks) 	•	•
Database Software: Use to Management	<ul style="list-style-type: none"> Searches and sorts prepared databases Defines parts of a database Develops simple databases and enters information 	•	•	<ul style="list-style-type: none"> Uses database to manage personal information (music collections, phone numbers) Creates, modifies and prints database reports Applies search and sort strategies Accesses local, national, regional databases (e.g., DOL, occupation information) for project work 	•	•	<ul style="list-style-type: none"> Applies database to actual situations and real word (business) problems (college scholarships) Uses, modifies, designs and creates relational databases, including queries, forms and reports 	•	•	<ul style="list-style-type: none"> Critically analyzes and evaluates databases and their complex interaction Accesses and applies/uses large scale databases for project work (e.g., GIS, census, corporate reports) 	•	•
Spreadsheet	<ul style="list-style-type: none"> Creates graphs and charts Defines spreadsheet terms Enters data into prepared spreadsheet Performs simple mathematical calculations and notices changes 	•	•	<ul style="list-style-type: none"> Uses spreadsheets for managing finances, addresses, purchases 	•	•	<ul style="list-style-type: none"> Applies spreadsheet principles to real-life situations and business problems 	•	•	<ul style="list-style-type: none"> Designs, creates, modifies and troubleshoots spreadsheets Uses databases functions to perform "What If Analysis" or decision models 	•	•
Operating Systems	<ul style="list-style-type: none"> Uses both CD-ROMS and 3.5" disks Obtains and transfers information from each Maintains files 	•	•	<ul style="list-style-type: none"> Maintains files and folders in more than one platform Uses multiple operating systems (MacIntosh, Windows, Unix, DOS) 	•	•	<ul style="list-style-type: none"> Installs software programs and performs basic configuration operations Understands compatibility issues 	•	•	<ul style="list-style-type: none"> Troubleshoots basic configuration problems Customizes operating system environments 	•	•
Programming	<ul style="list-style-type: none"> Follows a simple structured program (e.g., Lego LOGO, Basic) 	•	•	<ul style="list-style-type: none"> Creates simple structured programs (e.g., Lego Mindstorms, HTML) 	•	•	<ul style="list-style-type: none"> Creates simple object oriented programs using already developed source code (e.g., Java Script, Macros) 	•	•	<ul style="list-style-type: none"> Creates programs developing own source code (e.g., web applications, free/shareware) 	•	•

Hardware Installation and Configuration	<ul style="list-style-type: none"> Demonstrates knowledge of individual parts that make up a stand-alone PC computer system and the relationship between components 	•	•	<ul style="list-style-type: none"> Installs and configures hardware in a PC Computer system (e.g., printers) 	•	•	<ul style="list-style-type: none"> Troubleshoots minor problems and can articulate problems to technicians 	•	•	<ul style="list-style-type: none"> Demonstrates basic knowledge of PC hardware troubleshooting and maintenance 	•	•
Network Technologies	<ul style="list-style-type: none"> Can manage one's own electronic portfolio in a networked environment 	•	•	<ul style="list-style-type: none"> Understands overall design and components of a LAN and WAN system 	•	•	<ul style="list-style-type: none"> Performs basic set up and configuration of network hardware and software 	•	•	<ul style="list-style-type: none"> Monitors overall net work operations Troubleshoots basic problems Implements administrative functions 	•	•
Self-Management, Teamwork and Communication (Soft Skills)	<ul style="list-style-type: none"> Works in teams Values diversity Develops basic skills in literacy and numeracy Listens actively and communicates own ideas 	•	•	<ul style="list-style-type: none"> Solves problems Makes decisions Integrates learning Writes clearly and concisely Calculates accurately Navigates systems Adapts to changing environments Demonstrates integrity, honesty and ethical behavior 	•	•	<ul style="list-style-type: none"> Speaks effectively and persuasively Analyzes, interprets information, and draws conclusions Manages resources Generates ideas Coaches others Monitors and corrects systems 	•	•	<ul style="list-style-type: none"> Leads teams Negotiates effectively Continuously improves quality of work Teaches others Generates designs Creates and manages projects 	•	•

**The Western NH Business and Education Partnership, as a Center of Excellence for the National Tech Force Initiative, participated in the Design and Development of the Pathway/Pipeline Model Benchmark Chart.*

Ratings

NO	Not Offered
1	Basic Level
2	Intermediate Level
3	Advanced Level