A SHARED PATH TO SUCCESS

SPECIAL EDUCATION OFFICE
NYC PUBLIC SCHOOLS

Assistive Technology Reference Guide for Students with Disabilities

The Department of Education's goal is to ensure that all students, including those with disabilities, have meaningful access to the curriculum. Depending upon the impact of a disability, your child may require assistive technology in order to participate and achieve his or her academic goals. This *Assistive Technology Resource Document* describes a range of assistive technology supports for school-age students with disabilities, and is designed to provide you with information about the types of supports that may be used to help students acquire skills they need to access the curriculum. If you believe that your child requires assistive technology, start by speaking with the classroom teacher about supports available through the general education program at the school. It may be possible to adapt your child's general education program without additional special education services by utilizing these readily available supports. If after reviewing your child's needs and these general education resources it appears that additional supports may be necessary in order for you child to access the curriculum, the CSE team, which includes family member(s), will consider the appropriateness of adding assistive technology to your child's IEP.

How to use this document:
If your child has a learning disability, it may impact his or her access to the curriculum in one or more ways. This document can support you as you consider the skills that impact your child's ability to access and participate in the classroom and what assistive technologies are commonly available to supplement and/or support the development of these skills. This document is divided into three areas of skill based support which are color coded by skill support category (see below for color coding). Use this document to help identify the category (categories) and supports that pertain to your child.

- **Core Curriculum and Accessibility**
- **Communication**
- **Classroom Environment, Adaptations and Adaptive Environment**

Resources are organized alphabetically under each skill support category. Some resources contain web hyperlinks (which are underlined) which lead to sources of additional information. To locate a resource that may support development of a particular skill, begin by identifying the skill in the color coded "Supported Skill(s)" listed by category across the top of each page. Potential resource(s) aligned with the identified skill(s) are provided in the 'Resource' column on the left of the document, and their relevance to the skills are denoted by the ● icon in the column for that skill. The final page of this document contains a glossary with definitions for each supported skill.

The assistive technology listed in this document represents a sample of available tools. For more information about assistive technology, visit:
http://schools.nyc.gov/Academics/SpecialEducation/programs/relatedServices/Assistive+Technology.htm

I. Core Curriculum and Accessibility

Resource	Purpose/Examples	Supported Skill(s) *See glossary for skills' definitions.*													
		Comprehension	Math	Motor Aspects of Writing	Reading	Spelling	Study Skills	Composing Written Materials	Computer Access	Verbal Communication	Activities of Daily living	Hearing	Mobility	Positioning and Seating	Vision
Accessible Educational Materials (AEM)	**Purpose:** Accessible educational materials, or AEM, are materials that are designed or converted in a way that makes them usable across the widest range of students regardless of format (print, digital, graphic, audio, video). IDEA requires that states and districts ensure timely provision of AIM to elementary and secondary students with disabilities who need these materials. **Examples:** **Large print format** provides the same content as standard print, only in larger font to help those with visual impairments read more easily. **Braille** is a tactile system of reading and writing made up of raised-dot patterns for letters, numbers, and punctuation marks. This format is used almost exclusively by people who are blind or whose eyesight is not sufficient for reading printed material.		●	●	●	●	●								●
Accessibility Features Built into Computers	**Purpose:** Various accessibility options are included in most smartboards, computers, tablets & laptops. Some of the features include VoiceOver, Speak Selection, grayscale, assistive touch, closed captioning, switch control, keyboard shortcuts, speech recognition, sticky keys, screen magnification, and text edit with word prediction. **Example:** **Windows Accessibility** includes text to speech, read aloud, onscreen keyboards, high contrast screen settings and mouse settings.			●	●	●	●	●	●	●		●			●

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Adapted Books	**Purpose:** Books can be physically adapted to make them accessible to students with disabilities. With some simple adjustments, typical reading materials can have improved usability. **Examples:** **Page fluffers** can be placed on books to assist student in turning the pages. Consider adding binder clips, paperclips, magnets, pompoms, etc. **Livescribe pen** can be used to record the book and have it available to listen to using the Echo Pen. **Velcro** can be used to add AAC (Augmentative and Alternative Communication) picture symbols, such as PECS, to the typical book.				●								●		
Digital Books	**Purpose:** Digital books are resources that can be utilized to support reading in the classroom through a variety of ways such as: • providing text to speech options • increasing font size • increased mobility of multiple books • high contrast text • built in dictionary and search functionality **Examples:** **Accessible Book Collections** **Bookshare™** **Loyal Books** **New York Public Library (NYPL)** **Project Gutenberg** **Tumble Book Library**	●			●						●				●
Flocabulary	**Purpose:** Flocabulary is a subscription that promotes learning through music. All areas of study are represented. There is pre and post teaching materials as well as information that aligns the targeted skills to the standards and core curriculum.	●													

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Geometry Pad	**Purpose**: Geometry Pad is an app for Apple products that allows students to create geometric shapes, change properties and calculate metrics. The shapes are displayed on a scrollable and zoomable workbook.		●				●								
Inspiration Kidspiration	**Purpose:** Inspiration Kidspiration is a graphic organizer software program. You can create various designs including web, Venn diagrams and concept maps.						●	●							
IReadWrite	**Purpose:** IReadWrite is an app for Apple products that provides text to speech, word prediction support as well as phonetic spelling.	●		●	●	●									
IXL learning	**Purpose:** IXL learning provides interactive exercises and games for math (PreKg-12) and language arts (grades 2-4) that address various learning styles and are aligned to the Common Core State Standards. 30 day trial available.		●												
IWordQ	**Purpose:** IWordQ is an app for Apple products that provides features such as word prediction, spell-check and dictionary access.			●		●			●						
Kno	**Purpose:** Kno is an App for Apple, Android and Windows products that is an interactive PDF and eTextbook e-Reader.	●			●		●								

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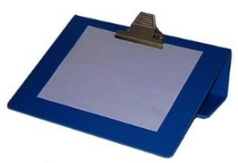
Read and Write Gold	**Purpose:** Read and Write Gold helps individuals struggling with reading and writing with various supports i.e.; text to speech, spell check, word prediction, etc.				●	●		●							
Slant board	**Purpose:** Slant boards can be used to angle books/materials for improved viewing and use. Certain visual perceptual issues are assisted with this simple adaptation. Slant boards come in a variety of formats, but can be created easily through the use of a large binder. **Example:** 			●	●						●			●	●
Solo Literacy Suite	**Purpose:** Solo Literacy Suite provides a full spectrum of supports including a text reader, graphic organizer, talking word processor, and word prediction.	●			●		●			●					

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Tools to Support Writing and Note-taking	**Purpose:** A variety of low-tech to high-tech tools beyond laptops and tablets are available to support writing and note-taking for students that struggle using typical writing tools. **Examples:** Forte are portable word processors that are loaded with programs and features designed by teachers and specialists to assist and support student writing. Livescribe pen can be used to record information from classes to review later to support note taking. **Alternative keyboards** allow a student to write when typical tools cannot be utilized. Examples include: one-handed keyboard, foot keyboard, etc. **Zoom Caps** are stickers with better contrast for letters which can be applied to a keyboard. 		●					●							

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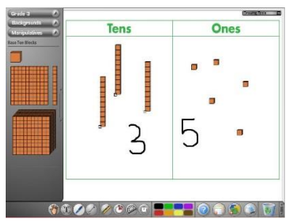
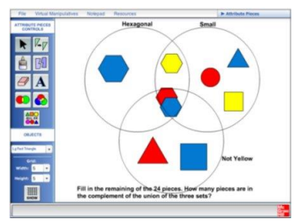
Digital Manipulatives	**Purpose:** Digital manipulatives can help students comprehend abstract and concrete concepts. **Example:** National Library of Virtual Manipulatives (NLVM) has web-based virtual manipulatives or concept tutorials for mathematics covering grades K-12.  		●				●								
Voice Dream	**Purpose:** Voice Dream is a "read anything" mobile text to speech reader Apple app that can be used to read internet files, websites, PDF files and ebooks.	●			●		●					●			
Your Teacher's Math App	**Purpose:** Your Teacher's Math App is a subscription based service that supports students with learning math concepts.		●				●								

II. Communication

	Purpose	Supported Skill(s) *See glossary for skills' definitions.*													
		Comprehension	Math	Motor Aspects of Writing	Reading	Spelling	Study Skills	Composing Written Materials	Computer Access	Verbal Communication	Activities of Daily living	Hearing	Mobility	Positioning and Seating	Vision
Dynamic Display Augmentative and Alternative Communication Devices	**Purpose:** Dynamic Display Communication Devices are computer based and can store a large amount of information for student navigation and retrieval to support verbal communication. **Examples:** • Tobii / Dynavox • Touch Chat with word power • Prologuo toGo • LAMP									●					
Static Display Augmentative and Alternative Communication Devices	**Purpose**: Manual Picture or object based communication systems can be incorporated for those that are not verbal to develop a foundation for alternative communication (communicating through means other than a voice). **Examples:** **Picture Boards and Symbols** (i.e., PECS) are photo images or other picture based representation utilized to communicate with others. **Voice Output devices that accept picture symbols or overlays** Devices that record voice messages and contain picture representation of those messages used for communication (i.e., Go TALK, Tech Talk, Big Mac, Proxtalker).									●					

III. Classroom Environment

Resource	Purpose/Examples	Supported Skill(s) *See glossary for skills' definitions.*													
		Comprehension	Math	Motor Aspects of Writing	Reading	Spelling	Study Skills	Composing Written Materials	Computer Access	Verbal Communication	Activities of Daily living	Hearing	Mobility	Positioning and Seating	Vision
Adaptive equipment and furniture	**Purpose:** Adaptive equipment can be used when a student is unable to use typical classroom furniture or requires specialized equipment. **Example:** Adjustable classroom chair or table.								●		●		●	●	
Auditory and Visual Enhancements	**Purpose**: A quiet learning environment can be interrupted by uncontrollable factors including auditory and visual distractions. Students with auditory and visual distractibility can be supported in many ways. **Examples:** **Personal FM Unit** Personal FM units provide amplification of the teacher's voice directly to the student's ear. **Preferential Seating** is when the student is seated closer to the teacher to help eliminate distractions between the teacher or point of instruction and the student.											●			●
Visual and Auditory Supports	**Purpose**: A variety of supports can be easily implemented into the classroom environment to support those with vision and auditory related deficits. **Examples:** Visual Supports include: • **Glare Reduction** • **Magnification and Enlarged Print** • **Large Print Books** • **Color overlays** • **Sign Language Interpreters** • **CCTV** • **Braille Readers** • **Text to Speech Devices or Accessibility Features on existing technology** • **Scanning Text to Digital format** • **Built in Accessibilities features across Operating Systems for Speech to Text** Auditory Supports Include: • **Amplification** • **Hearing Aids** • **Closed Captioning built in accessibilities**	●			●							●			●

Glossary of Supported Skills

Core Curriculum & Accessibility

Comprehension – refers to the ability to process and understand material.

Math – the study of numbers, equations, functions and shapes and how they relate to each other.

Motor Aspects of Writing – encompasses handwriting (e.g. holding the writing utensil, guiding the hand to form letters, stabilizing the paper, legibility) and key boarding (e.g. speed and accuracy of typing) skills.

Reading – the ability to comprehend, with clarity, printed English material in school, the workplace, at home, and in society.

Spelling – the use of letters to form words according to accepted usage.

Study Skills – an array of skills which tackle the process of organizing, processing and retaining new information effectively.

Communication

Composing Written Materials – involves the ability of the student to express ideas in a way that is meaningful to themselves and to others (e.g. organization, planning, arrangement of elements and creation).

Computer Access – the act of approaching and making use of the features of a computer.

Verbal Communication – refers to the use of sounds and words to exchange information and ideas (e.g. wants, needs, experiences, thoughts, feelings, questions) to a communication partner.

Classroom Environment, Adaptations and Adaptive Environment

Activities of Daily Living – includes people's daily self-care activities (e.g. eating, drinking, dressing, and hygiene).

Perceptual – of or relating to the ability to interpret or become aware of something through the senses.

Positioning and Seating – refers to the physical space in the environment, as well as physical space in the environment, as well as physical object(s), that may be necessary to support a student's learning in a classroom.

Hearing – the ability to access auditory information.

Mobility – of or relating to independent ambulation (e.g. navigation of walking, sitting, reaching).

Vision – the act of receiving (e.g. seeing) and processing visual information.