

# **Arizona Department of Education Exceptional Student Services**



## **Assistive Technology Consideration Guide**



## Assistive Technology Consideration Resource Guide

All information in this guide is provided to assist teams in considering assistive technology (AT) in the development, review, and/or revision of a student's individual educational program (IEP). This document provides a starting point for teams to identify potential assistive technology solutions within specific areas of the curriculum. This guide is not prescriptive; the IEP team must identify all necessary assistive technology devices and services for each student individually, using a framework that considers the student, the environment, and the tasks. This document is available for download at [azed.gov/specialeducation/at/](https://azed.gov/specialeducation/at/).

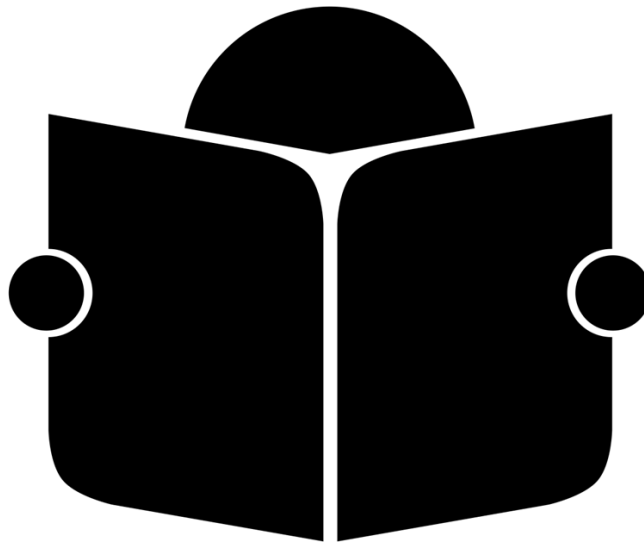
The assistive technology devices listed in this document are included to provide examples of different types of assistive devices that may be required for students with disabilities to access a free and appropriate public education. **This document does not include all assistive technology devices within each category and inclusion of a particular device does not constitute endorsement by the Arizona Department of Education.** Additional devices may be added to the document by emailing suggestions to [ESSATinfo@azed.gov](mailto:ESSATinfo@azed.gov).

Many of the items referenced in this guide are available for checkout from the Arizona Department of Education/Exceptional Student Services' AT Loan Library. For additional information about the AT loan program, please visit us at [adeatloan.org](https://adeatloan.org).

The Arizona Department of Education/Exceptional Student Services wishes to thank the Georgia Department of Education for its generosity in allowing us to revise and distribute Arizona's version of their resource guide. (Revised August 2022)



# Reading



## Assistive Technology Consideration Resource Guide

Instructional or Access Area: Reading	Standard Tools	Accommodations, Modifications, Strategies	Assistive Technology Solutions
<p><b>Sample Tasks:</b></p> <ul style="list-style-type: none"> <li>• Book handling</li> <li>• Identify letters/numbers</li> <li>• Recognize/read name</li> <li>• Read sight words</li> <li>• Decode words</li> <li>• Read environmental text/functional words</li> <li>• Read words, sentences, and/or longer passages</li> <li>• Comprehend age/grade appropriate reading materials               <ul style="list-style-type: none"> <li>○ literal meaning</li> <li>○ main idea</li> <li>○ inferential meaning</li> </ul> </li> <li>• Summarize key points</li> <li>• Read with fluency</li> <li>• Retell story with key details in correct sequence</li> <li>• Read and comprehend complex literary and informational texts independently and proficiently</li> </ul>	<ul style="list-style-type: none"> <li>• Computer/tablet</li> <li>• Textbooks</li> <li>• Digital text</li> <li>• Videos with closed captions</li> <li>• Interactive whiteboard</li> <li>• Worksheets</li> <li>• Projected information</li> <li>• Websites</li> <li>• Document camera</li> <li>• Presentations such as PowerPoint, Keynote, Slides</li> <li>• Test materials</li> </ul>	<ul style="list-style-type: none"> <li>• Extended time</li> <li>• Have text read aloud</li> <li>• Highlight to emphasize key points</li> <li>• Adjust characteristics such as font, size, and contrast</li> <li>• Adjust spacing between letters, words, and/or lines</li> <li>• Use high-interest, low-reading-level materials</li> <li>• Simplify complexity of text</li> <li>• Customize vocabulary</li> <li>• Decrease length of assignment</li> <li>• Pre-teach vocabulary</li> <li>• Audiobooks</li> <li>• Provide two sets of textbooks</li> <li>• Provide pictures or videos to supplement print materials</li> <li>• Sensory considerations</li> </ul>	<ul style="list-style-type: none"> <li>• Page fluffers/page turners</li> <li>• Slant board and book holders</li> <li>• Tracking tools such as reading window, finger, popsicle stick</li> <li>• Online dictionary/spellchecker with speech output</li> <li>• Adapted books               <ul style="list-style-type: none"> <li>○ talking pens</li> <li>○ recording stickers</li> <li>○ tactile books</li> </ul> </li> <li>• Reading pens</li> <li>• Audio books</li> <li>• Digital text/ Text-to-speech</li> <li>• e-Book readers</li> <li>• Talking word-processing programs</li> <li>• Screen reader</li> <li>• Computer-based advanced reading and writing aids</li> <li>• Optical Character Recognition</li> <li>• Braille</li> </ul> <p><i>For students with orthopedic impairment, input/output methods such as special keyboards, keyguards, keyboard utilities, touchscreen, adaptive mice, and switch access must be considered.</i></p>







# Writing



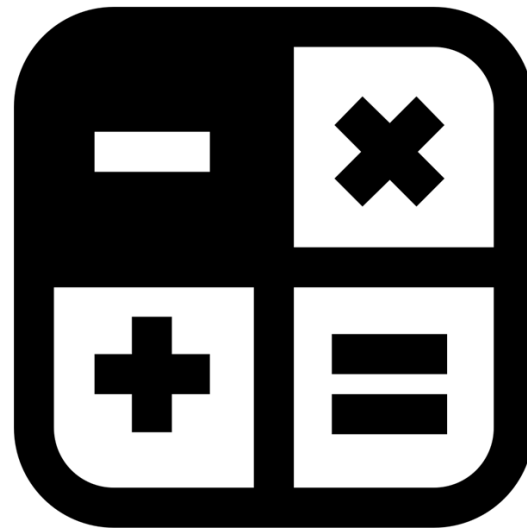
## Assistive Technology Consideration Resource Guide

Instructional or Access Area: <b>Writing</b>	<b>Standard Tools</b>	<b>Accommodations, Modifications, Strategies</b>	<b>Assistive Technology Solutions</b>
<p><b>Sample Tasks:</b></p> <ul style="list-style-type: none"> <li>• Print name</li> <li>• Copy letters/words/numbers for skills practice</li> <li>• Complete writing tasks with correct spelling</li> <li>• Write words from memory</li> <li>• Copy words from book or worksheet</li> <li>• Copy notes from board or overhead</li> <li>• Complete written worksheets</li> <li>• Complete written tests</li> <li>• Take notes</li> <li>• Generate creative/spontaneous writing samples</li> <li>• Enter number in correct location in calculation problems</li> <li>• Copy math problems</li> <li>• Write dictated math calculation problems with correct alignment</li> <li>• Copy diagrams and graphs</li> <li>• Create/plot linear and quadratic equations</li> </ul>	<ul style="list-style-type: none"> <li>• Crayon/marker</li> <li>• Pencil</li> <li>• Pen</li> <li>• Letter and number strip</li> <li>• Clipboard</li> <li>• Word processing software with grammar and spell checker</li> <li>• Instructional websites to remediate and enhance specific writing skills</li> <li>• Graphic organizers</li> </ul>	<ul style="list-style-type: none"> <li>• Allow extra time</li> <li>• Oral dictation</li> <li>• Provide peer notetaker</li> <li>• Use NCR notebooks</li> <li>• Change format of assignment to meet needs of student—multiple choice, matching word banks, fill-in-the-blank, short answer</li> <li>• Provide typed outline or copy of lecture notes to student</li> <li>• Highlight key points on digital/print copy of notes</li> <li>• Decrease length/complexity</li> <li>• Supply word banks, sentence starters, and cloze format</li> <li>• Decrease required responses</li> </ul>	<ul style="list-style-type: none"> <li>• Pencil grips or other adapted writing aids</li> <li>• Adapted paper/paper holders/spacing tools</li> <li>• Slant board</li> <li>• Personal dry erase board</li> <li>• Nonslip Material under writing surface</li> <li>• Portable writing devices</li> <li>• Note-taking device/tools</li> <li>• Spell/grammar checks</li> <li>• On-screen keyboard with scanning or eye-gaze access</li> <li>• Speech-to-text tools</li> <li>• Printed/digital Graphic Organizers</li> <li>• Text-to-speech for editing</li> <li>• Chrome extensions</li> <li>• Apps</li> <li>• Open-source software/apps</li> <li>• Word-prediction software/apps</li> <li>• Computer-based reading and writing tools</li> </ul> <p><i>For students with orthopedic and/or visual impairment, input/output methods such as special keyboards, keyguards, keyboard utilities, touchscreen, adaptive mice, switch access, Braille input, screen enlargement, and text or screen reading software must be considered.</i></p>





# Math



## Assistive Technology Consideration Resource Guide

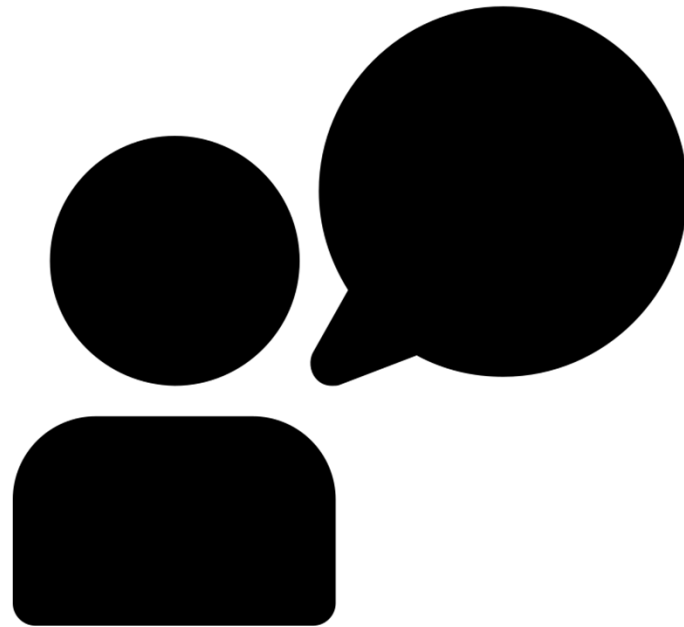
Instructional or Access Area: Math	Standard Tools	Accommodations, Modifications, Strategies	Assistive Technology Solutions
<p><b>Sample Tasks:</b></p> <ul style="list-style-type: none"> <li>• Identify numbers in isolation and sequence</li> <li>• Comprehend basic math concepts</li> <li>• Complete basic calculations</li> <li>• Complete complex math calculations</li> <li>• Complete math word problems</li> <li>• Tell time to the hour, half-hour, etc., using an analog and/or digital clock</li> <li>• Calculate passage of time</li> <li>• Identify coins and bills</li> <li>• Understanding value of coins and bills</li> <li>• Use money to purchase items</li> <li>• Use coins and bills to make appropriate change</li> <li>• Manage peer-to-peer payment apps</li> <li>• Manage personal finances</li> </ul>	<ul style="list-style-type: none"> <li>• Manipulatives (e.g., beads)</li> <li>• Abacus</li> <li>• Number line</li> <li>• Math facts sheet</li> <li>• Calculator</li> <li>• Instructional software to remediate and enhance specific math skills</li> <li>• Smart phone apps and online banking</li> </ul>	<ul style="list-style-type: none"> <li>• Change format of assignment (e.g., write answers only)</li> <li>• Have peer/adult read problem and record answer</li> <li>• Arrange additional spacing between problems</li> <li>• Provide additional time to complete tasks</li> <li>• Change complexity of material (e.g., separate problems by operations required)</li> <li>• Provide teacher/peer support for reading and other assignments</li> <li>• Reduce number of problems</li> <li>• Calculators that provide step by step instructions</li> </ul>	<ul style="list-style-type: none"> <li>• Increased print/font size</li> <li>• Adapted number lines</li> <li>• Modified paper (such as bold line, graph paper, raised line)</li> <li>• Digital or physical manipulatives</li> <li>• Adaptive Calculators: talking, large key/display, high contrast, Braille</li> <li>• Apps and websites with built-in accessibility options</li> <li>• Adapted keyboard/number pad</li> <li>• Adapted measuring devices such as large print measuring cups, measuring wheels, laser measurement apps/devices, talking tape measures, Braille labels</li> <li>• Math notation tools</li> </ul> <p><i>For students with orthopedic and/or visual impairment, input/output methods such as special keyboards, keyguards, keyboard utilities, touchscreen, adaptive mice, switch access, Braille input, screen enlargement, and text or screen reading software must be considered when needed.</i></p>







# Speaking



## Assistive Technology Consideration Resource Guide

Instructional or Access Area: Speaking	Standard Tools	Accommodations, Modifications, Strategies	Assistive Technology Solutions
<p><b>Sample Tasks:</b></p> <ul style="list-style-type: none"> <li>• Gain attention of peers/adults within environment</li> <li>• Initiate/respond to greetings</li> <li>• Express basic wants/needs</li> <li>• Request assistance as needed</li> <li>• Reject/decline</li> <li>• Participate in conversations</li> <li>• Respond appropriately to teacher/peer questions and/or comments</li> <li>• Present oral report in class on assigned topic</li> <li>• Learn and use vocabulary specific to the curriculum</li> <li>• Inform others of events or topics</li> <li>• Terminate conversation</li> </ul>	<ul style="list-style-type: none"> <li>• Organizing diagram for presentations</li> <li>• Word banks</li> <li>• Personal/visual dictionary</li> <li>• Written language for receptive and expressive communication</li> </ul>	<ul style="list-style-type: none"> <li>• Use interpreter</li> <li>• Provide verbal prompts</li> <li>• Model appropriate skills</li> <li>• Repeat spoken answers</li> <li>• Allow additional response time</li> <li>• Provide questions ahead of time</li> <li>• Accept shortened responses/gestures</li> </ul>	<ul style="list-style-type: none"> <li>• Speech-enhancing devices (e.g., amplifiers, clarifiers)</li> <li>• Pacing boards/initial letter cueing boards</li> <li>• Low-tech augmentative/alternative communication systems such as object-based communication displays, picture communication boards, books, wallets</li> <li>• Mid-tech recorded devices</li> <li>• AAC Apps for iPad, tablets</li> <li>• Dedicated augmentative communication devices</li> <li>• Alternative access tools such as keyguard, stylus, and switches</li> </ul>





Listening



## Assistive Technology Consideration Resource Guide

Instructional or Access Area: Listening	Standard Tools	Accommodations, Modification, Strategies	Assistive Technology Solutions
<p style="text-align: center;"><b>Sample Tasks:</b></p> <ul style="list-style-type: none"> <li>• Respond to environmental stimuli appropriately (e.g., someone knocking on classroom door, bell ringing, fire alarm)</li> </ul> <p><b>In remote or face-to-face environments:</b></p> <ul style="list-style-type: none"> <li>• Follow verbal directions</li> <li>• Listen to stories, books, etc., and answer comprehension questions</li> <li>• Listen to classroom discussion and apply information</li> <li>• Listen to teacher lecture and apply information</li> <li>• Focus on/understand verbal responses by classroom peers</li> <li>• Listen to verbally presented information and retell with correct sequencing and facts</li> <li>• Note-taking</li> <li>• Listen to podcasts, audiobooks, videos</li> </ul>	<ul style="list-style-type: none"> <li>• Digitally recorded material</li> <li>• Headphones for clarity of sound and blocking of extraneous noises</li> <li>• Document camera to provide visual outline during note taking</li> <li>• Closed-captioning access to caption-ready television and video presentations</li> <li>• Podcasts</li> <li>• Interactive whiteboard</li> </ul>	<ul style="list-style-type: none"> <li>• Arrange preferential seating</li> <li>• Use teacher proximity</li> <li>• Improve classroom acoustics</li> <li>• Eliminate extraneous noise</li> <li>• Break directions into smaller steps/segments</li> <li>• Use gestures</li> <li>• Pre-teach vocabulary and/or components of the lesson</li> <li>• Use visual aids to illustrate key points</li> <li>• Provide a written outline of lecture</li> <li>• Provide copy of notes/use a peer note taker</li> <li>• Provide copy of script for videos</li> <li>• Provide sign language/oral interpreter, in-person or remotely</li> </ul>	<ul style="list-style-type: none"> <li>• Personal amplification system</li> <li>• Smartphone or tablet with videoconferencing for ASL speakers</li> <li>• Whiteboard/markers</li> <li>• Classroom sound field system</li> <li>• Hearing aids</li> <li>• Smart pen</li> <li>• Environmental alert devices</li> <li>• Speech-to-text tools for lecture and instruction</li> <li>• Open/closed captioning</li> <li>• Real-time captioning services such as CART to transcribe class lecture and discussion (in-person or remote)</li> <li>• CCTV focused on speaker's face</li> <li>• Simultaneous speech-to-text and text-to-speech such as Ubi Duo</li> </ul>







# Seating, Positioning, and Mobility



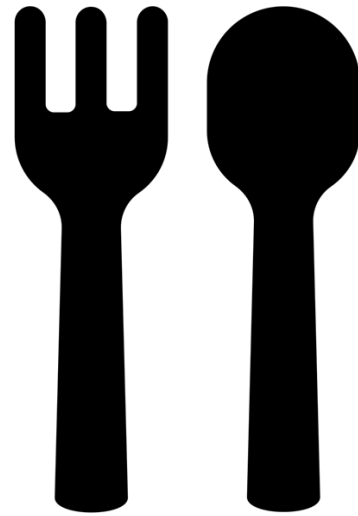
## Assistive Technology Consideration Resource Guide

Instructional or Access Area: Seating, Positioning, and Mobility	Standard Tools	Accommodations, Modifications, Strategies	Assistive Technology Solutions
<p><b>Sample Tasks:</b></p> <ul style="list-style-type: none"> <li>• Move about/ambulate around the classroom, school, and/or community</li> <li>• Manipulate educational materials as required in assigned activities</li> <li>• Maintain appropriate seating/position for participation in relevant activities</li> <li>• Access computer/Internet</li> </ul>	<ul style="list-style-type: none"> <li>• Standing desk</li> <li>• Classroom chairs, desks, and tables</li> <li>• Footrest to maintain proper seating</li> <li>• Computer, keyboard, mouse</li> </ul>	<ul style="list-style-type: none"> <li>• Limit mobility requirements through careful scheduling of daily activities (e.g., order, location)</li> <li>• Provide peer and adult assistance</li> <li>• Modify requirements based upon student's fluctuating energy level</li> <li>• Modifications to standard tables, desks, and chairs</li> </ul>	<ul style="list-style-type: none"> <li>• Adaptive classroom equipment such as prone and supine stander, side lyer, bean bag chair, adapted chair with seating modifications and support</li> <li>• Slant board/bookstand</li> <li>• Adapted table and desk</li> <li>• Mounting systems</li> <li>• Walker</li> <li>• Crutches/cane</li> <li>• Manual wheelchair</li> <li>• Power wheelchair</li> <li>• Lap tray and equipment mount</li> <li>• Adapted vehicle</li> <li>• Lifts for transfers</li> <li>• Reacher/grabber</li> </ul>





# Activities of Daily Living



## Assistive Technology Consideration Resource Guide

Instructional or Access Area: Activities of Daily Living	Standard Tools	Accommodations, Modifications, Strategies	Assistive Technology Solutions
<p><b>Sample Tasks:</b></p> <ul style="list-style-type: none"> <li>• Feed self with appropriate utensils</li> <li>• Drink using cup/straw</li> <li>• Prepare simple snack</li> <li>• Prepare basic meal</li> <li>• Dress and/or undress self</li> <li>• Complete personal hygiene/grooming tasks</li> <li>• Perform simple household chores</li> </ul>	<ul style="list-style-type: none"> <li>• Eating utensils</li> <li>• Cups/straws</li> <li>• Personal hygiene tools such as toothbrush, comb, brush</li> <li>• Bathroom rails and adaptive faucet handles</li> <li>• Cleaning materials and appliances</li> </ul>	<ul style="list-style-type: none"> <li>• Verbal prompts</li> <li>• Model/video model appropriate skills</li> <li>• Use picture cues and prompts</li> <li>• Give additional time to complete tasks</li> <li>• Modify task length and complexity</li> <li>• Have student complete part of task independently</li> </ul>	<ul style="list-style-type: none"> <li>• Adapted eating aids such as grips for utensils, adapted cups/glasses, feeding machines, leveling utensils, suction cup plates/cups, scoop dish</li> <li>• Adapted dressing aids such as button hooks, pulls for zippers, Velcro fasteners, shoehorns</li> <li>• Adapted cooking and food preparation aids such as blender attached to power control unit, adapted pouring handles, rocker knife</li> <li>• Adapted household cleaning tools and appliances</li> <li>• Raised toilet seats, grab bars, motion detector sink/toilet</li> <li>• Automatic door opener</li> </ul>







# Studying and Organization



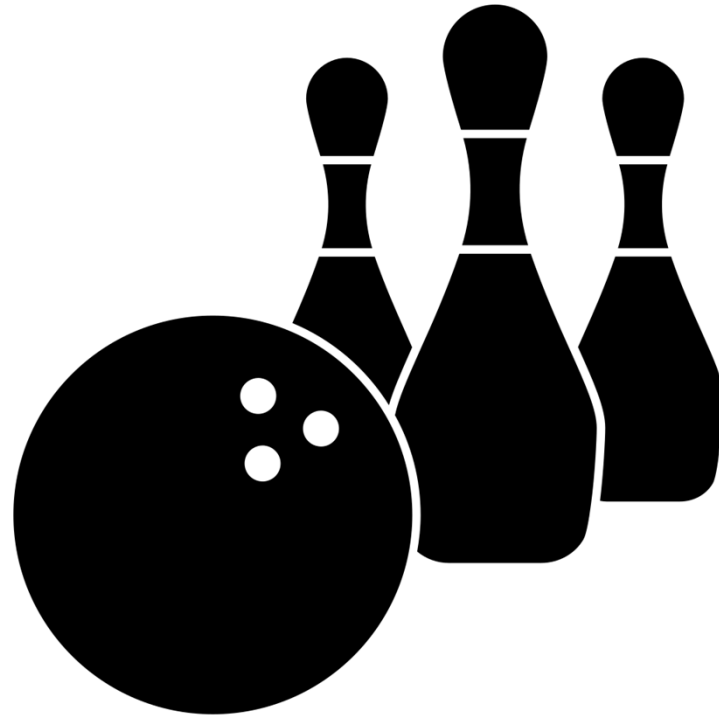
## Assistive Technology Consideration Resource Guide

Instructional or Access Area: Studying and Organization	Standard Tools	Accommodations	Assistive Technology Solutions
<p><b>Sample Tasks:</b></p> <ul style="list-style-type: none"> <li>• Write down assignments from the board/given verbally</li> <li>• Follow organizational system</li> <li>• Keep track of assignments</li> <li>• Complete and turn in assigned tasks on time</li> <li>• Gather and keep track of appropriate materials/supplies for class activities</li> <li>• Request assistance when needed</li> <li>• Follow multiple-step directions</li> <li>• Maintain to do list</li> <li>• Maintain dedicated study time</li> <li>• Self-management</li> </ul>	<ul style="list-style-type: none"> <li>• Agendas/planners</li> <li>• Calendars</li> <li>• Classroom reminders</li> <li>• Computer/tablet/word processor</li> <li>• Document camera</li> <li>• Interactive whiteboard</li> <li>• Notebooks</li> <li>• Parent/student portals</li> <li>• Rubrics</li> <li>• Social learning networks</li> <li>• Study guides</li> <li>• Syllabus</li> <li>• Electronic file/storage system</li> </ul>	<ul style="list-style-type: none"> <li>• Peer/adult assistance</li> <li>• Daily planner</li> <li>• Flexible/optimal seating options</li> <li>• Sensory supports (auditory, tactile, visual, movement)</li> <li>• Self-monitoring sheets</li> <li>• Oral and printed directions</li> <li>• Outline of key points</li> <li>• Assignment timelines</li> <li>• Print copy of steps in a task</li> <li>• Model of finished product</li> <li>• Schedules or checklists</li> <li>• Extra supplies of classroom or work materials</li> <li>• Color coding</li> <li>• Highlighters/sticky notes</li> <li>• Digital flash cards</li> <li>• Dedicated study time</li> </ul>	<ul style="list-style-type: none"> <li>• Visual supports such as a picture schedules and labels</li> <li>• Digital/auditory reminders</li> <li>• Organizational aids such as color coding, personalized planners/calendars, schedules, transparent folders</li> <li>• Digital recorder/Smart pen</li> <li>• Digital flashcards with speech-to-text</li> <li>• Timers (physical or digital)</li> <li>• Digital highlighters</li> <li>• Highlighter Tape</li> <li>• Digital images of assignments written on board or peer's planner</li> <li>• Graphic Organizers</li> <li>• Google Drive/One Drive features</li> <li>• Apps/ Browser extensions</li> <li>• Reading/writing software with features such as editing tools, word prediction, and text-to-speech with highlighting</li> </ul>





# Recreation and Leisure



## Assistive Technology Consideration Resource Guide

Instructional or Access Area: Recreation and Leisure	Standard Tools	Accommodations, Modifications, Strategies	Assistive Technology Solutions
<p><b>Sample Tasks:</b></p> <ul style="list-style-type: none"> <li>• Participate in play and sports</li> <li>• Participate in indoor/outdoor leisure activities</li> <li>• Manipulate and/or operate toys, tools, and/or electronic appliances required for participation in leisure activities</li> <li>• Use the computer/tablet/internet</li> <li>• Watch TV/movies</li> <li>• Streaming TV shows/movies- Netflix, Hulu, HBO, etc.</li> <li>• Participate in social media and online communities</li> </ul>	<ul style="list-style-type: none"> <li>• Books/magazines</li> <li>• Puzzles</li> <li>• Games</li> <li>• Toys</li> <li>• DVD player</li> <li>• Computer/tablet</li> <li>• Sporting and exercise equipment</li> <li>• Mobile devices: videos, music, television, movies, books, magazines</li> </ul>	<ul style="list-style-type: none"> <li>• Use verbal/visual prompts</li> <li>• Provide adult/peer assistance</li> <li>• Model/Video Model appropriate skills</li> <li>• Modify games/activities</li> <li>• Change/simplify rules</li> </ul>	<ul style="list-style-type: none"> <li>• Knobs for puzzles</li> <li>• Card holders</li> <li>• Adapted crayon holders/scissors</li> <li>• Adapted books</li> <li>• Adapted music with symbols</li> <li>• Raised line coloring sheets</li> <li>• Spinners for games or adapted dice throwers</li> <li>• Switch accessible toys (commercially available or switch accessible through switch interface)</li> <li>• Environmental control devices</li> <li>• Power control units and battery adapter devices</li> <li>• Adapted sports equipment</li> </ul> <p><i>For students with orthopedic and/or visual impairment, input/output methods such as special keyboards, keyguards, keyboard utilities, touchscreen, adaptive mice, switch access, Braille input, screen enlargement, and text or screen reading software must be considered when needed.</i></p>







# Prevocational and Vocational



## Assistive Technology Consideration Resource Guide

Instructional or Access Area: Prevocational and Vocational	Standard Tools	Accommodations, Modifications, Strategies	Assistive Technology Solutions
<p><b>Sample Tasks:</b></p> <ul style="list-style-type: none"> <li>• Complete assigned tasks (e.g., filing, sorting/assembling) within designated timelines</li> <li>• Use tools, manipulatives, and/or equipment</li> <li>• Complete single and multiple step tasks</li> <li>• Stays on task until work is complete</li> <li>• Stays on task without supervision</li> <li>• Self-advocates</li> <li>• Procurement of accessible instructional materials</li> <li>• Contact postsecondary service providers to obtain assistance</li> <li>• Manage finances</li> <li>• Safely navigates community and local environments</li> <li>• Completes steps to obtain a job</li> <li>• Being punctual</li> </ul>	<ul style="list-style-type: none"> <li>• Computer/tablet with standard office applications</li> <li>• Timers and watches</li> <li>• Equipment needed for work</li> <li>• Office equipment</li> <li>• Work manuals</li> <li>• Pencil and paper</li> </ul>	<ul style="list-style-type: none"> <li>• Peer/adult assistance</li> <li>• Self-monitoring sheets</li> <li>• Model skills</li> <li>• Daily planner</li> <li>• Teach regularly traveled routes</li> <li>• Individualized modifications</li> <li>• Location identifiers</li> <li>• Orientation to environment</li> <li>• Sensory supports</li> <li>• Sighted guide for visually impaired</li> <li>• Student self-monitoring sheets</li> <li>• Teacher modeling</li> <li>• Verbal or visual cues</li> <li>• Video modeling</li> <li>• Work checklist</li> <li>• Modify task length and complexity</li> </ul>	<ul style="list-style-type: none"> <li>• Adapted seating</li> <li>• White cane</li> <li>• Vibrating/talking watches/timers</li> <li>• Visual schedules</li> <li>• Color-coded schedules with work tools</li> <li>• Adapted workstation</li> <li>• Device, software or apps               <ul style="list-style-type: none"> <li>○ daily planners</li> <li>○ outlining/graphic organizers</li> <li>○ financial management</li> <li>○ screen enlargement</li> <li>○ document scanner</li> <li>○ optical character recognition</li> <li>○ Braille display</li> <li>○ auditory reminders</li> <li>○ digital recorder/player</li> </ul> </li> <li>• Augmentative and Alternative Communication (AAC)</li> </ul> <p><i>For students with orthopedic impairment, input/output methods such as special keyboards, keyguards, keyboard utilities, touchscreen, adaptive mice, switch access input, and text or screen reading software must be considered when needed.</i></p>



