Assistive Technology Consideration Resource Guide

The following information is provided to assist educational teams in considering assistive technology in the development, review, and/or revision of a student's Individual Educational Plan. This document provides a framework for identifying relevant tasks within instructional areas as well as appropriate accommodations, modifications, and technology solutions. Additional tasks and solutions will need to be added to address individual student needs.

Select one of these Instructional Areas found below for videos which include: Writing, Spelling, Reading, Math, Study Organizational Skills, Listening, Oral Communication, Aids to Daily Living, Recreation and Leisure, Pre-vocational and Vocational, Seating, Positioning, & Mobility.

Instructional or Access Area	Standard Tools	Modifications and Accommodations of Task and Expectations	Assistive Technology Solutions
Writing: Sample Tasks • Write name • Copy letters/words/ numbers for skills practice • Write words from memory • Copy print from book or worksheet • Copy notes from board or overhead • Complete written worksheets with single word responses (fill-in-the-blank) • Complete written worksheets with phrase or sentence response • Complete written test with multiple choice response (circle/mark answer) • Complete written test and forms with fill-in-the-blank response • Complete written test with matching response • Complete written test with phrase/sentence (short answer) • Complete written test with essay response (multi-paragraph)	• Crayon/Marker • Pencil • Pen • Letter and number strip • Clipboard • Typewriter • Computer with word processing software with grammar and spell checker • Instructional software to remediate and enhance specific writing skills	• Increased time for completing assignments • Decreased length of assignment/number of responses • Oral dictation as an alternative to writing • Peer note taker • Format of assignment changed to meet need of student - multiple choice, matching word banks, fill-in-the-blank, short answer • Word banks, sentence starters, and close format writing activities for supports • Provide typed outline or typed copy of lecture notes to student prior to delivery for student to use to follow lecture • Student highlights key points on printed copy of notes rather than copying/recording lecture notes • Webbing-concept mapping strategy used	• Pencil grip or other adapted writing aids • Alternate Paper (bold line, raised line, different spacing, secured to desk, paper stabilizer) • Slant Board • Personal dry erase board • Non-slip writing surface (e.g. dyceum) • Tape Recorder Player or dictated responses and note taking • Portable Word Processor (e.g. PC-5, AlphaSmart, etc) • Note taking device (e.g. Braille, adapted tape recorder, smartboard) • Computer with word processing software with spell and grammar checks (e.g. Microsoft Word) • Computer with word processing software and outlining/webbing software (e.g. Inspiration or Kidspiration, Draft Builder) • Computer with graphic-based word processor (e.g. Writing with Symbols 2000) • Computer with talking word processing software (e.g. IntelliTalk, Write Out Loud) • Computer with Word Prediction Software (Co: Writer 4000) • Computer with graphic based word processor (e.g. Writing with Symbols 2000) • Scanner and computer with form filling software to create electronic worksheets *Adaptive input hardware and/or software (e.g. keyguard, keyboard utilities, enlarged keyboard, touchscreen, on-screen keyboard, trackball, switch access, voice dictation software, Braille input) and adaptive output solutions (screen enlargement, text or screen reading software) to be used as needed for all computer based writing solutions

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Writing Sample Tasks (Continued) • Record notes from teacher dictation/lecture with teacher recording notes on board/overhead • Record notes from teacher dictation/lecture without teacher notes • Generate creative/ spontaneous writing samples • Copy numbers • Enter number in correct location within calculation problems • Copy math calculation problems with correct alignment • Record dictated math calculation problems with correct alignment • Copy diagrams and graphs create and plot linear and quadratic equations on graph	• See previous page	• See previous page	• See previous page
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Spelling: Sample Tasks • Identify correctly spelled word from printed list • Write spelling words from dictation • Spell words orally • Take a written spelling test • Use spelling words appropriately in a sentence • Locate correctly spelled words in a dictionary • Complete writing tasks with correct spelling • Identify/correct incorrectly spelled words in writing sample	• Flashcards • Alphabet strip • Print dictionary • Computer with word processing software with built-in spell checker • Instructional software to remediate and enhance basic phonics and spelling skills	• Peer/adult assistance for difficult to spell words • Personal or custom dictionary • Problem word list • Reduce number of spelling words • Increased time for completing assignments	• Personal dry erase board for practice • Tape recorder with difficult to spell words recorded • Hand-held spellchecker without auditory output (e.g. Merriam-Webster Dictionary and Thesaurus) • Portable word processor with built-in spellchecker (e.g. AlphaSmart) • Computer with word processing program with spell check feature (e.g. Microsoft Word) • Computer with talking word processing software containing speaking spell check (e.g. Write OutLoud) • Computer with word prediction software (e.g. Co: Writer 4000)

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Reading: Sample Tasks: • Identify letters in isolation and in sequence • Recognized/read name • Read basic/primer sight words • Read functional words (community, emergency, grocery, etc.) • Read target/selected words within a sentence • Comprehend age/grade appropriate reading materials • Read print materials from textbooks and supplemental materials with comprehension • Read material from worksheet with comprehension • Read material from board/overhead with comprehension • Read material from computer display with comprehension • Read longer reading samples with comprehension and without fatigue • Answer literal questions regarding materials read • Answer questions regarding main idea of materials read • Answer inferential questions regarding materials read	• Textbooks • Worksheets • Printed information on board/overhead • Printed test materials • Instructional software to remediate basic reading and/or reading comprehension skills	• Peer/adult reading assistance • High interest, low reading level materials • Increased time for completing reading materials • Decreased length of assignment • Simplify complexity of text • Color coding to emphasize key points (highlighting) • Custom vocabulary list, • Increase print size of materials through photocopying	• Page fluffers • Slant board and book holders for positioning books • Color Overlays Highlighting Aids • Tracking strategies (e.g. reading window, bar magnifier) • Speaking spellchecker or dictionary as a word recognition aid (e.g. Speaking Merriam-Webster Dictionary and Thesaurus) • Reading Pen (e.g. Quicktionary Reading pen) • Audio-taped books (e.g. books-on-tape from Recordings for the Blind and Dyslexic) • Electronic books (e.g. disk or CD-ROM) • Computer based talking word processing program (e.g. Write OutLoud) • Computer with graphic word processor (e.g. Writing with Symbols) • Computer with text enlargement software (e.g. ZoomText) • Computer with text reading software (e.g. ReadPlease, Talk-to-Me, JAWS, Kurzweil 1000) • Computer-based advanced reading aids (e.g. Kurzweil 3000, WYNN) • Solutions for converting text into alternative format (e.g. scanner with OCR software, Braille translation software, Braille printer/embosser, refreshable Braille displays, and tactile graphic productions systems, etc.)

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Math: Sample Tasks: • Identify numbers in isolation and sequence • Comprehend basic math concepts • Complete basic calculations (addition, subtraction, multiplication, and division) • Complete complex math calculations • Complete math word problems • Tell time to the house, half-hour, etc. using an analog and/or digital clock • Calculate passage of time • Identify coins and bills • Demonstrates understanding of coin and bill value • Utilize money to purchase items • Utilize coins and bills to make appropriate change • Maintain and balance a checkbook	• Manipulatives (beads, etc.) • Abacus • Number line • Math fact sheet (e.g. multiplication facts) • Calculator • Instructional software to remediate and enhance specific math skills	• Change format of assignment (e.g. write answers only) • Peer/adult reading of problem and recording of answer • Reduce number of problems • Provide additional spacing between problems • Provide additional time to complete tasks • Increase size of print through photocopying • Change complexity of material (e.g. separate problems by operations required) • Teacher/peer support for reading and assistance	• Modified paper (bold line, enlarged, raised line, graph paper, etc.) • Standard calculator • Talking calculator with speech output • Calculator with large print display • Calculator with large keypad • Calculator with embossed output (e.g. Braille N Speak) • Computer based on-screen calculator • Electronic math worksheet software with adaptive input and output as needed (e.g. MathPad, Access to Math, and Study Works) • Adapted measuring devices (e.g. devices with speech output, large print display, or tactile output)
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Study Organizational Skills: Sample Tasks: • Copy assignments from board • Record assignments from teacher dictation • Complete assigned task within designated timelines • Request teacher/peer assistance when needed • Has appropriate materials/supplies for class activities	• Instructional materials, including software to remediate deficit areas, to teach compensation strategies, and focus on strengths	• Assignment sheet provided by peer and/or adult • Outlines of key points • Student schedule or checklist • Positioning student strategically within classroom environment • Timers • Student self monitoring sheets	• Print or picture schedule • Organizational aids (e.g. Color coding, appointment book, etc.) • Tape recorder • Electronic organizer/personal digital assistant (e.g. Step Pad, Palm Pilot) • Computer based electronic organizer with adapted input and output provided as needed • Speech prompting device

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Listening: Sample Tasks: • Follow verbal directions • Listen to stories, books, etc. and answer comprehension questions • Listen to classroom discussion and apply information (answer questions, record notes, etc) • Listen to teacher lecture and apply information (answer questions, record notes, etc) • Listen to verbally presented information and retell with correct sequencing and facts • Listen to videos to gather information about current instructional topics • Respond to environmental stimuli appropriately (someone knocking on classroom door, bell ringing, fire alarm)	• Television • Video player • Cassette recorder/player • Headphones for clarity of sound and blocking of extraneous noises for cassette/television • Overhead projector to provide visual outline during note taking • Closed captioning access to caption ready television and video presentations	• Preferential seating • Use teacher proximity • Elimination of extraneous noise (air conditioner) • Break directions into smaller steps/segments • Use verbal prompts • Use gestures • Pre-teach vocabulary and/or components of the lesson • Audio-tape verbally presented information for repeated presentation • Use visual aids (picture symbols, diagrams, maps) to illustrate key points • Provide a written outline of lecture • Use a peer note-taker to record notes in class • Provide print copy of script in videotapes • Provide sign language/oral interpreter	• Personal amplification system • Classroom sound field system • Auditory trainer • Personal hearing aids • Tape recorder with indexing capability • Smart Board for transferring teacher written notes to student computer for viewing and printing and viewing • Environmental alert system • Voice to text software application for converting teacher lecture to text • Closed captioning on non-caption ready instructional materials • Real time captioning of class lecture and discussion
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Oral Communication: Sample Tasks: • Gain attention of peers/adults within environment • Express basic wants/needs • Request assistance as needed • Provide appropriate greetings • Participate in conversation with peers/teachers • Respond appropriately to teacher/peer questions and/or comments • Provide oral report in class on assigned topic • Inform others of events, topics, etc • Terminate conversation	• Organizing diagram for presentations	• Interpreter • Verbal prompts Modeling appropriate skills • Repetition of spoken answers • Additional response time • Provide questions before time • Accepting shortened responses	• Speech enhancing devices (e.g. amplifiers, clarifiers) • Augmentative communication solutions (e.g. object based communication displays (Take N' Talk Lap Board), picture communication boards, books, and wallets, talking switches (Big Mac, Twin Talk, Tech Four), dedicated augmentative communication devices (Multi-Level Digitized System (Tech Talk 8 x 8 & Tech Speak), and integrated computer based augmentative communication solutions-all with adaptive input as needed) • Sign language

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Aids to Daily Living: Sample Tasks: • Feed self using appropriate utensils • Drink using appropriate utensils • Prepare simple snack • Prepare basic meal • Dress and/or undress self using appropriate tools • Complete personal hygiene and grooming tasks (brushing teeth, hair, etc.) • Toilet self • Perform simple household chores	• Eating utensils (ex. Spoon, cup, etc.) • Personal hygiene tools (ex: toothbrush, comb, brush, etc.) • Toileting supplies (ex: tissue) • Bathroom rails and adaptive faucet handles • Cleaning materials and appliances	• Verbal prompts • Modeling appropriate skills • Picture cures and prompts • Additional time to complete tasks • Modification of task length and complexity	• Adapted eating aids (e.g. grips for standard eating utensils, adapted cups/glasses, etc) Feeding machines • Adapted dressing aids (e.g. button holes, pulls for zippers, Velcro fasteners, etc.) • See other sections of this document for leisure, vocational, mobility, and learning aids.) • Adapted household cleaning tools and appliances
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Recreation and Leisure: Sample Tasks: • Participate in play activities • Participate in leisure activities (ex: look at/read book or magazine, listen to music, etc) appropriately • Manipulate and/or operate toys, tools, and/or electronic appliances required for participation in leisure activities appropriately	• Puzzles • Games • Toys • Music (e.g. tape player, CD-ROM, etc.)	• Verbal prompts • Adult peer assistance • Modeling appropriate skills • Cooperative participation • Game participation	• Knobs for puzzles • Adapted crayon holders • Adapted books • Adapted music with symbols • Raised line coloring sheets • Spinners for games • Switch accessible toys (commercially available or switch accessible through switch interface) • Environmental control devices • Power control units and batter adapter devices • Adaptive sports equipment • Computers with adaptive input devices as needed and appropriate software to address leisure skills

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Pre-vocational and Vocational: Sample Tasks: • Complete assigned tasks (ex: filing, sorting, assembly, etc.) within designated timelines • Utilize tools, manipulative, and/or equipment to complete tasks • Complete single and multiple step tasks	• Sorting and assembling materials • Office equipment • Computer with standard office applications • Timers and watches	• Verbal prompts • Picture and word cues • Modeling appropriate skills • Cooperative participation with peers and adults • Student self-monitoring sheets • Modification of task length and complexity	• Individualized task and material modifications to meet student needs • Computer with adaptive input devices as needed and appropriate software to address pre-vocational or vocational needs • Vibrating and talking watches and timers • Auditory prompting with and without visual display
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Seating, Positioning, and Mobility: Sample Tasks: • Move about/ambulate about the classroom, school, and/or community • Manipulate educational materials as required in assigned activities • Maintain appropriate seating/position for participation in relevant activities	• Classroom chairs, desks and tables	• Limit mobility requirements through careful scheduling of daily activities (order, location, etc.) • Peer and adult assistance • Modification of requirements based up0on student's daily energy level and the task to be completed	• Adaptive classroom equipment (e.g. prone and supine standers, side lyers, adapted chairs with seating modifications and support, etc.) • Adapted tables and desks • Walkers • Crutches/canes • Manual wheelchairs • Power wheelchairs • Lap trays and equipment mounts