Assistive Technology CHECKLIST

The following document was prepared by Oklahoma ABLE Tech for training purposes and to describe devices and systems displayed by the project. There are over 30,000 assistive technology devices available; this is a sample of assistive technology approaches.

ALTERNATE COMPUTER ACCESS

Individuals with physical or mobility impairments, learning disabilities, and/or sensory disabilities can benefit from the use of alternative computer access devices. A team Approach is important in selecting the right devices. Feedback from individual/team is essential. The individual should try before they buy. Adequate training and follow up is essential.

Computer Access and Adaptive Computer Equipment Related to Computer System
Input – Keyboard, Mouse
Processing - Computer
Output – Monitor, Print

For Physical Disabilities or mobility impairments—focus mainly on input, seating and positioning. Computer Access Approaches are:

Typing Aids for use with standard or alternate keyboard; or communication aid

**Mouthstick:**
- Bendable telescopic mouth stick can be adjusted to allow better visibility and a more natural writing /typing angle.
- Used for keyboard typing and/or turning pages; another type holds implements such as a pen, pencil or paintbrush.
- Telescoping end makes it easy to adjust length. Sammons Preston, $36.95.
- Swivel mouth stick docking station swivels to provide the best angle for easy access and mounts on a keyboard. Sammons Preston, $15.95.

**Headpointer:**
- The Clear-View Headpointer extends from the jaw level, permitting better vision and body positioning than a forehead pointer.
- User stays comfortably positioned, and minimal head movement is required. Sammons Preston, $93.95.

**Hand Typing Aids:**
- Wanchik typer, Slip-On Typing Aid, or custom made
- Makes typing easier for persons with limited hand control such as limited grasps or weak finger musculature. Wrist and elbow flexion is needed to properly use this typing tool. North Coast Medical, $12.95

Look at Standard Keyboard Access
Modify standard keyboard:

**Sticky Keys:** Accessibility Feature found on Control Panel
- For people who type with one finger, mouthstick, etc. (Windows 95, 98, Mac)
- Sequential Activation, 2 or more keys do not have to be depressed.
- Shift, control, and alt keys can be pressed individually

**Filter Keys or Key Delay:** Accessibility Feature found on Control Panel
- Designed to prevent accidental keystrokes; slows the repeat rate.
- Ignores brief or repeated keystrokes

**MouseKeys:** Accessibility Feature found on Control Panel
Control pointer with numeric keypad.

**Keyguards:** A keyguard is a hardware device that covers a keyboard and has a hole over each key to help guide the user's finger. Keyguards can improve typing accuracy for people with limited fine motor control.

- Cutouts allow key to be hit deliberately or allow a limb to rest on the keyguard.
- Useful for someone who uses a mouthstick, headpointer, typing aid.
- Useful for someone with tremors or spasticity.
- Plastic, metal, or fiberglass keyboard overlays snap or lock over a keyboard
- Prevent unintentional keystrokes.
- Attach with Velcro or tape, range in price, starting at around $50. Options by Infogrip, $70. Other companies: Don Johnston, TASH, IntelliTools, IBM/Special Needs Systems, TASH, PRC, and NanoPac.

**Layout of Keyboard:**

- Dvorak or frequently used keys
- Alphabetical layout is helpful for those with cognitive or learning disabilities

**Arm supports:**

- Ergorest articulating arm supports carry the weight of your arms/shoulders to reduce tension and stress
- Useful for someone who may tire easily while typing because of the workload on the neck, head, and shoulders.
- Help prevents carpal tunnel syndrome and repetitive stress injuries. Options by Infogrip, 800-397-0921, $129 per arm.

**Rate Enhancement Software:**

- Word prediction for slow typists, saves keystrokes, makes writing more efficient
- KeyREP (Rate Enhancement Package) Software by Prentke Romich
- Effective for physical, cognitive, or learning disabilities
- Prediction list appears from which you select the word you want; based on the letter(s) typed, personal preference, and how frequently words are used.
- KeyREP contains four dictionaries and features abbreviation expansion prediction
- Issues: If not a touch typist the user may have to look at keyboard and back at monitor; or person may have spasticity.
- Purchased from NanoPac $250. Other products: Co: Writer with speech through Don Johnston, $250; Soothsayer.
- System requirements: 486 (33Mhz+) or above computer, available memory: 8Mb+ (16 Mb + preferred); Windows 3.1 or 95 with hard disk and a minimum of 8 Mb of memory. It uses only 500K of memory but performs better with more memory.

**Abbreviation Expansion:**

- Preprogrammed phrases or macros, phrases or sentences with only a few letters.

**Word prediction with Augmentation Communication**

- E Z Keys for Windows is a keyboard assistance program
- Provides keyboard control, dual word prediction, abbreviation expansion, instant phrases with full macros, speech output, and mouse emulation, all while running standard software.
- Access is by standard keyboard, or by alternate input methods such as a mouse, trackball, or 1-5 switches.
- Telecommunication capabilities such as use of fax/modem and access on-line information through the Internet; Environmental control with optional U-Control II system, Words+, $1395.
Stephen Hawking, Lucasian Professor of Mathematics at the University of Cambridge and world-renowned astrophysicist, uses EZ Keys to lecture to his students, write books and deliver speeches around the globe.

**Alternative Keyboards:**

**Expanded keyboards** provide a larger target area ex. Intellitkeys (Intellitools $395); useful for someone with CP and has gross motor control; keys easier to see and select.
- Big Keys LX Keyboard for PC or Mac, size of standard keyboard with 1” keys, 4x larger than standard keys, $169, Don Johnston or Options by Infogrip
- Key Largo, $295, Don Johnston

**Contracted or Mini–Keyboard** ex. WinMini (Access First $498 for IBM), useful for someone with less range of motion such as muscular dystrophy; use with mouth stick/headpointer; auditory feedback; mouse and key control; Qwerty or Frequency-of-Use.

**Specialty Keyboards** such as BAT (LSS $185) or the Maltron (LSS, $690) for one-handed use, designed for touch typing; others have built in trackball or touchpad; others are ergonomic and conform to the shape and movements of wrists and hands to decrease the high incidence of repetitive strain injuries (carpal tunnel). The BAT allows full keyboard access for one-handed use by means of chording.
- One-Hand QWERTY Typing Manual, uses standard keyboard, for someone with use of one good hand. www.aboutonehandtyping.com, $14.95
- Half-Qwerty Keyboard, for left hand (right available soon) $99, Matias Corporation, www.halfkeyboard.com
- Half-Qwerty Software for right or left hand. NanoPac or www.half-qwerty.com
- Some alternative keyboards talk and can be used for learning and communication.
- Overlays provide an easy way to change the keyboard to fit the individual’s needs; provide different keyboard configurations with access features such as large letters and numbers, high contrast colors, and alphabetical as well as QWERTY arrangement of keys.
- Other products and companies: Discover Board, Discover:Kenx with Key Largo, TASH, Don Johnston.

**Onscreen Keyboards**
- Eliminates physical keyboard; virtual.
- Type with mouse alternative (hand, foot, head, switch to direct cursor onscreen).
- Custom layouts or standard; word prediction.
- WiVik2 Scan with switch access; individual can click, dwell, or scan through choices. (Prentke Romich, $520 without scanning, $395)

**Mouse Access-Mouse Alternatives:**
- Useful with onscreen keyboards
- Trackballs for use by thumb, fingers, or palm (Libra 90 Mac, other companies are Infogrip, and Words+; price ranges from $20 to $150.)
- Thumbelina Mini Trackball-use with tip of finger or thumb; mount on any surface or use as hand-held pointing device with on-screen keyboard or surf the web; can attach to BAT keyboard; features two button operation and illuminated drag lock. Options by Infogrip, $76
- Joystick is a good option for someone who may drive a wheelchair with a joystick. Found in supply stores, Infogrip, Don Johnston, Words+, NanoPac; price ranges $20-$350. Joystick-to-mouse software is needed for computer access which makes joystick “point and click”.
- Touch or track pads (Infogrip 800-397-0921, VersaPad, $65) also found in office supply stores.
- Touch Window or Touch Screen is a concrete interface to control mouse
- (also useful for someone with a cognitive disability)
- Attaches to the monitor as a multipurpose input device that acts as a touchscreen, graphics tablet or keyboard substitute.
- Touch input is a natural and direct way to interact with computers and software; can give commands, position a cursor, draw graphics, make selections, and move objects all with the fingertips or stylus. For Mac or PC, Edmark Corporation, $300-500.
- NoHands Mouse provides control of cursor with foot pedals. One pedal controls cursor movement, and other controls mouse clicks. For PC or Mac. Company Hunter Digital and purchased through Infogrip, $230.
- Accessibility Features on Computer: choose MouseKeys to control pointer through the numeric keypad.

**Head Control** such as *Headmaster Plus* is a headpointing system which uses ultrasound waves that detect and translate movement of the head and pneumatic switch for clicks (by Prentke Romich and purchased from Options by Infogrip, $995 and laptop adapter, $85)
- Natural Point AT Infrared Tracker is a hands free cursor control system useful for people with physical disabilities such as ALS, spinal cord injuries. Increases productivity. Features real time head tracking, built in dwell clicking; switch clicking. Purchased from Infogrip or www.naturalpoint.com for $199

**Switch Access:**
- Use switches for Keyboard and Mouse Functions
- Useful for individuals who cannot use keyboard or mouse and without fine motor control of head, and is nonverbal.
- Important Issues: visual attention, mounting of switches (jelly bean, infrared, eye blink, tongue touch keypad).
- Scanning Issues: timing involved, visual attention, rate of input
- Scanning array and/or Coded access i.e. Morse code (useful with 2 switches and word prediction)
- Product called Switch Click is a switch that enters a mouse click; can be used with scanning software or with a pointing device to move the cursor. The switch click can handle the left mouse button clicks, $99.

**Voice Recognition**
- Hands-free alternative allows user to speak directly to the computer by use of microphone and software; complements or replaces keyboard.
- Helpful for people with mobility impairments such as high level spinal injury or someone with head injury and can use only one side of body.
- Useful for someone with slow typing skills due to arthritis, one-hand typing, spastic movements, or carpal tunnel
- Continuous speech product: NaturallySpeaking
Discreet speech product: DragonDictate is useful with spreadsheets and forms, speech impediment

- Becoming more cost effective with increased use by non-disabled.
- Issues are consistent voice quality, vocal fatigue, and environment of use and training.
- Standard version of Naturally Speaking is $109, Professional version $695, Disability Suite from NanoPac, $705.
- Dragon Systems offers telephone products that use speech to replace the telephone keypad for navigating a telephone system. The Centex head system provides a shared office phone adapter with a microphone, $222.
- Memory Requirements: 32 MB for Windows 95 or 98. 48 MB for Windows NT 4.0; Processor Requirements: at least 133 MHz Pentium, hard disk space requirements, 180 MB free hard disk space.

EyeGaze Technology
- Eye movement to type and control mouse pointer
- Useful for “locked in” syndromes
- Hands free alternative

New Technologies
- Mind Control Software uses EEG electrical potential such as at forehead/EOG movement of eyes/EMG facial muscle movement
- Mind Mouse System
- Hands free alternative

For Learning Disabilities—focus mainly on adapting processing and output. Computer Access Approaches are:

1. General strategies such as simple layout, appearance and operation; Obvious intuitive operation; Built-in cueing; Allowance for error recovery; Alternate forms for presentation of information; Simple direct selection; Written procedures for common tasks; Spell Check/Grammar Check; Touch Window may be more intuitive than other mouse alternatives.
2. Voice Output presents information auditorily for reading disabilities, dyslexia; Highlights word or sentence; Talking dictionary option; Scanning/OCR option such as WYNN.
3. Word Prediction software for spelling difficulties; Option for reading difficulties; Some basic spelling required.
4. Voice Recognition may be faster, more intuitive input method for writing difficulties; Discrete speech software may assist more with learning; Can be combined with reader applications for auditory feedback of word list; Continuous speech software also an option.
5. Picture Based Writing Programs: Pictures and/or icons with labels; Some programs link to common word processing software; Often coupled with voice output or communication software.

For Sensory Disabilities—focus mainly on adapting output. Computer Access Approaches are:
1. **Screen Magnifiers:** Low vision access; Hardware Screen Magnifier example purchased from LSS $39.95; Software Magnifiers such as **ZoomText Level 2** with 2-16X and voice output Manufactured by AiSquared and purchased through NanoPac, $395, and $595; Windows 95 or Windows 3.1; 16.256 or higher color display driver. Windows 95 sound card; Macintosh product is CloseView; Navigation Issues; MAGic by Freedom Scientific, $545 w/speech or $295 without

2. **Large High Contrast Key Labels** for low vision; ZoomCaps from Don Johnston, $14.95.

3. **Screen Reader:** Low Vision/Blind Access computer navigation tool; Reader program option with screen enlarger or comprehensive screen reader; Operates a speech synthesizer which voices the contents of a computer screen; Intelligibility issues; Compatible with word processing, spreadsheet, and database packages; JAWS product for Windows by Freedom Scientific or Window-Eyes by GW Micro.

4. **Notetakers and Refreshable Braille Displays:** Alternative to screen reader; Requires good peripheral sensation. Blazie TypeLite w/JAWS, $5,995, BrailleLite $3495 or $5595, Type ‘n Speak, $1,395, Braille ‘n Speak, $1,299

5. **Braille Embosser:** Needs Braille translation software; Paper Type/Grade

6. **Scanner/OCR:** Low Vision/Blind; Scan printed materials and convert into clearly spoken synthesized speech; Optical Character Recognition (OCR) software; Used with screen enlarger or screen reader software; Open Book, RUBY version by Arkenstone $995 used with HP Scanner $325. Or, VERA System Complete reading machine (Very Easy Reading Machine) $2,995, comes in a mahogany case.

7. **VICTORReader**—digital talking book reader, allows user to search and navigate digital talking books, $495. Freedom Scientific.

8. **Low Vision:** Accessibility Features Available On Computer: Toggle Keys allows user to hear tones when pressing cap lock, num & scroll lock; Windows can also provide high contrast colors and fonts for easier reading.

9. **Hearing impaired/deaf:** System Beep Modification; Change system beep to Visual beep that generates a visual warning when system makes a sound (Sound Sentry).

10. **ShowSounds** tells programs to display captions for the speech and sounds they make.

**COMMUNICATION**

In basic terms, Alternative and Augmentative Communication (AAC) is the use of techniques to supplement speech for communication. Almost everyone uses augmentative modes of communication in the form of gestures and facial expressions to some extent. Individuals with severe communicative difficulties must rely on AAC to meet their communication needs. Some Augmentative Communication Devices are designed to produce digitized speech using a switch system that facilitates communication. Preprogrammed information is the foundation for many augmentative communication devices to increase an ability to verbally communicate.

Characteristics of individuals who may use AAC:

1. Anyone who is not able to communicate effectively with speech (nonverbal),
2. Anyone who is partially able to communicate with speech (has speech but is not understood by most listeners or speech is not functional),
3. Anyone who has adequate speech but requires an augmentative device for purposes of writing or carrying on long conversations.

updated 8/12/10
Auditory scanning (AS) is a special technique used for communicating with people, who have an inability to speak, coupled with severely limited visual and motor skills. The way auditory scanning works is that a list of vocabulary items is presented auditorily (e.g., read aloud) for the person with a disability. He or she chooses a vocabulary item by using predetermined signal such as a vocalization in order to identify the desired vocabulary item. This technique is very important because for the people who use it, it is oftentimes the only way that they can communicate at all.

Low-Tech Communication Board – A simple augmentative communication device can be a communication board made of cardboard or felt and created with pictures, words, or letters. A communication board provides an avenue for communication for an individual with language difficulties. On display is an example of Pick N Stick pictures. Imaginart, $29 set.

Low-Tech Communication Book – A communication book like the Porta book provides a low-tech form of communication for individuals with language difficulties. The pocket sized book holds language cards, word cards, and/or identification. Porta book available from Crestwood, $9.50; Talking Pictures Kits, Crestwood, $48.95/box; Attainment WordWise Language cards, $69/box.

Eyegaze board (Eye gaze communication) – The Opticomunicator is a low-tech communication device for nonverbal paralyzed people. The individual focuses his eyes on the picture, word, or letter needed. Simple to use and versatile. Crestwood $69.95.

Simple Voice Output Device (e.g. BIGmack, Step by Step, Cheap Talk, Voice-in-a-Box, Micro Voice, Talking Picture Frame, or Hawk) – A BIGmack communication aid provides a large target area for an individual to press for a single recorded message. On Display are the Step-by-Step Communicator and the BIGmack. The Step by Step is similar to a Big Mack, but allows even those with the most limited communication abilities to carry on an essential conversation, or give a series of instructions, conduct an interview, or express a single message in a variety of ways. Ablenet, $86 and $149.

Simple Voice Output with 20 to 40 messages – On display is a MessageMate 20 by Words+, $522. The MessageMate 20 is a small, lightweight, easy-to-use communication device with up to two minutes of high-quality analog recording, a 20-key keyboard, and two modes of scanning.

Voice Output Device with Levels (e.g. 6 level Voice-in-a-box, Macaw, Digivox, DAC) “Levels” refers to a technique in which multiple language items can be stored and retrieved from a single location. Each item is assigned a “level” designator. Individual items are retrieved by indicating the level designator and item location. Levels may be represented on overlays or on-screen. On display is a Macaw by Zygo; prices on three models range from $1,445 to $5,345 depending on recording time available and other options.

Voice output device with dynamic display (e.g. DynaVox, DynaMyte, Speaking Dynamically with laptop computer or Freestyle, Vanguard by PRC, ) – The DynaMyte is a powerful, easy-to-carry communication device. It is a smaller version (weight 3.2 pounds) of the DynaVox for ambulatory communicators. The DynaMyte offers fast processing speed, communication and page creation. It uses dynamic “touch-screen” display to allow communicators to move smoothly through the same natural message-formation process that produces normal speech. The product’s dynamic
display offers simple, logical choices, making communication faster, easier and more natural. Using DECTalk human voice synthesis software, DynaMyte offers 10 different voices, ranging from child to adult in both male and female. It has a built-in environmental control unit (ECU) to provide users with greater independence. Available through DynaVox, $5,995.

The DynaVox device has the same features as the DynaMyte except that it provides a larger screen for more vocabulary and weighs 7 pounds. One can access a DynaVox by touching it, using a mouse-compatible input device, switch joystick, or scanning. Visual and auditory scanning allows individuals, who need to activate a switch using one controllable movement, access to the full range of the DynaVox. Available through DynaVox, $6,495.

Voice output device with icon sequencing (e.g. Liberator, Alpha Talker, Berator, DAC) - On display is the AlphaTalker from Prentke Romich Co. The Alphataker II uses an introductory vocabulary program (Unity) which is a core vocabulary. Combining icons extends the vocabulary beyond the 32 locations on the board. It is easy to use and offers: icon prediction, auditory scanning/feedback cues so that persons with visual impairments can know what location is being activated, and environmental control commands. The digitized speech allows the user to record anyone’s voice. Available through Prentke Romich Co. $1,895 or $2,595 for an expanded package.

The Liberator II is more advanced than the Alphataker and uses Unity software that gives words we use everyday and words we need for specific situations. Minspeak icons are for the words used most often. Combining icons extends the vocabulary beyond the 128 locations on the board. The Liberator offers electronic notebooks for writing papers, letters, or lists; word prediction; math scratch pad and calculator; clock, calendar, and alarm notification; auditory scanning and feedback; and ECU. Available through Prentke Romich Co, $8,445. The DeltaTalker is lighter in weight than the Liberator and has less speech memory. Priced at $5,295. Both have powerful language capabilities.

Voice Output Devices that Rely on Spelling (e.g. Cannon Communicator, Write:OutLoud with laptop computer, Link, LightWRITER) LightWRITER from Zygo. LightWRITERs are text to speech devices and require some degree of literacy. Most LightWRITER users suffer from acquired speech loss following laryngectomy, tracheostomy, head injury, stroke, or with progressive neurological diseases such as ALS, Parkinson’s Disease, or Multiple Sclerosis. This device is very portable and unique in having dual displays, one facing the user so they can see what they are typing, and a second outfacing display to allow communication in a natural face-to-face position. LightWRITERs use DECTalk speech synthesis, which is a high quality synthesizer with excellent intelligibility and clarity. Options available for LightWRITERs: dual keyboards, compact, normal, and expanded sizing, printer options, word prediction, tremor control, keyguards, and scanning capabilities for use with a switch. Available from Zygo; prices range from $2,995 to $7,305 depending on options.

Voice Output Devices that Rely on Spelling (e.g. Cannon Communicator, Write:OutLoud with laptop computer, Link, LightWRITER) The LINK is a keyboard and a communication device. LINKS are text to speech devices and require some degree of literacy and note-taking ability. LINK features DECTalk technology, high quality speech output, with 8 different voices and the ability to change speech volume, rate, and pitch. It is easy to use, lightweight, and transportable.
The LINK features abbreviation expansion and “instant messages” to make communicating easy and fast. The device saves files that can be downloaded to any Macintosh or PC computer. The LINK is available through Assistive Technology, Inc. for $1395.

Franklin Language Master, Special Edition — speaking dictionary and thesaurus reads every entry out loud word by word or by letter. Can be used as a communication device; stores up to 26 messages. Useful for people with learning disabilities. Available from LSS Group or Franklin, $444.

JOB SKILLS
Low Tech Aids to facilitate job skills for individuals with disabilities such as cognitive impairments, learning disabilities, and low vision.

- **Key Identifiers** – Plastic identifiers placed on keys to distinguish by color and/or shape ILA $1.25 for 4.
- **TimePAD Memo** – memo recorder and clock/timer which can be programmed with personal messages. The TimePAD allows 5 personal messages to be played back up to 5 times each day. Use a reminder of medication, instructions, or short notes to yourself. ILA $49.95.
- **Print or picture schedule** such as a day planner to record and organize appointments and reminders, telephone numbers and addresses.
- **Electronic Organizer** – electronic notebook for storing reminders, phone numbers, appointments. Radio Shack, $20
- **Highlight** text using markers, highlighters, highlight tape, and rulers to stay on track.
- **Index cards** such as a day planner to record and organize appointments and reminders, telephone numbers and addresses.
- **Electronic Organizer** – electronic notebook for storing reminders, phone numbers, appointments. Radio Shack, $20
- **Highlight** text using markers, highlighters, highlight tape, and rulers to stay on track.
- **Index cards** help individuals with learning disabilities get organized, stay organized and on-track, and make work and learning assignments more manageable. Useful for reminders and notetaking.
- **Carbonless paper** is pressure-sensitive paper that allows the individual to tear off copies of meeting or classroom notes to share with a fellow worker or classmate whose note-taking abilities may be weak. 10 cents a sheet.
- **Earplugs** are useful for blocking out noise in office or classroom environments so that one can concentrate. Earplugs are useful for those with learning disabilities.
- **Pencil or pen with adaptive grip** – Adaptive grips and alternate writing utensils provide an alternative for people with dexterity problems, arthritis, or poor hand strength. Examples: Bio Curve Pen, Maxi Aids $3.50; Dr. Grip Pen which reduces the strength needed to grip a pen by 40% from Adaptability; the Writing Bird which causes the hand to rest comfortably over it, while the pen glides easily, Adaptability $19.95; the Freedom Writer, Easy Street, $10; and the Steady Write Pen, ILA $4.95.
- **Wanchik Writer** – writing utensil that holds the pen or pencil. People with decreased hand dexterity will be able to hold the writing finger in the proper position. No thumb pinch is required. Can also purchase a version with additional wrist support. North Coast Medical, $19.95
- **Adapted paper** (e.g. raised lines, highlighted lines) – Bold lined paper is useful for someone with low vision. Maxi Aids, $4.95; The letter writing guide provides a template for someone with tremors or low vision, Maxi Aids, $2.50.
- **Blue and Yellow Overlays** – overlays provide a method for more effective reading for people with learning disabilities, or those with certain cognitive impairments, or persons with low vision.
- **Slantboard** – A slantboard is inclined 20 degrees and supports a book or papers without the use of hands. From K&L Resources $34.95, 703-455-1503.

- **Check Writing Guide** – plastic writing guide with cutout lines for check areas. Maxi Aids, $.89.

- **Letter Writing Guide** – durable plastic sheet with 13 openings to correspond to standard line spacing. Writing aid is useful for people with low vision or with hand tremors. Maxi Aids, $2.50.

- **Envelope Writing Guide** – sturdy plastic guide with corresponding openings for a standard envelope. Writing aid for people with low vision or with hand tremors. Maxi aids, $.99.

- **Signature Guide** – sturdy plastic guide with opening to correspond to standard signature area. ILA $.50.

- **Electric Stapler** – automatic stapling mechanism for use with one-hand. Wal-mart, $15.

- **Talking Calculator** – talking calculator, large numbers, and clock display is useful for someone with a visual impairment or cognitive impairment. LSS Group, $8.95.

- **Large Key and Display Calculator** – useful for those with visual and/or some mobility difficulties.

- **Typewriter or Portable Word Processor** – The AlphaSmart Notetaker is a portable keyboard or notetaker which allows a person to write and electronically store reports, essays and notes without having to be at a computer. Files can be transferred to a PC, Mac, or printer. Available from Intelligent Peripheral Devices, $259 for Infrared version.

- **Computer** – Use of the computer for the word processing feature can assist an individual with spelling and grammar check. Computers also offer alternative features such as sticky keys, some magnification, and word prediction to facilitate productive typing, spelling and sentence construction.

- **Loc-Dots** – Loc-Dots can be used as reference points on the keyboard. Each pack includes 6 clear plastic adhesive backed raised dots. ILA $1.29 or Maxi Aids, $.99.

- **Arm supports** – Ergorest articulating arm supports carry the weight of your arms and shoulders thereby reducing tension and stress. Useful for someone who may tire easily while typing because of the workload on the neck, head, and shoulders. The arm supports help prevent carpal tunnel syndrome and repetitive stress injuries. Arm supports purchased from Options, $129 per arm.

- **Software program such as PowerPoint, Inspiration, and Claris Works Outline** are useful for organization of ideas and studying. This type of aid is useful for individuals with cognitive impairments, learning disabilities, and individuals who have difficulty maintaining focus. Microsoft Office contains PowerPoint.

- **The Franklin Bookman Merriam-Webster Electronic Dictionary and Thesaurus** is useful for individuals with cognitive and/or learning disabilities at home, school, or office. A talking version is available and useful for auditory feedback and pronunciation. Available through Franklin, $59.95

- **ParrotPlus Voice Organizer** – The organizer is a voice recognition device that stores telephone numbers and will recall as you say the person’s name. Other features are the voice notepad, meeting planner, date and time is spoken and can find a meeting with the help of a keyword, talking clock and alarm, talking calculator, control panel, and downloads information into your computer. LSS Group, $189.95.

- The **Talking Memo** offers two 10 second channels, which are handy for brief reminders such as phone numbers, appointments, names or lists of things to do. ILA, $10.95.
Alternative methods to facilitate READING skills:

- **Changes in text size, spacing, color, or background color** can provide a method for more effective reading for people with learning disabilities, persons with low vision, or those with certain cognitive impairments. Examples include using yellow or blue overlays over a document or book, changing the background of a document to white or black using a CCTV (closed circuit television) or mini CCTV.

- **Book adapted for page turning (e.g. page fluffers, 3-ring binder, cardboard in page protector)** - A book adapted for easier page turning is useful for individuals with limited dexterity or use of hands. An adapted book makes it easier for individuals who use a mouthstick and/or headpointer.

- **Quicktionary Reading Pen** – use the pen to scan a word in print, see in large characters, hear the word read aloud then defined. Useful for someone with a learning disability and for those with low vision. $279.95 LSS Group or Seiko.

- **Scanner with Talking Word Processor** – Open Book and WYNN software products provide immediate auditory feedback of reading materials. WYNN (What You Need Now) is customized for people with reading disabilities that can not keep up with reading assignments from school or work. The Open Book, Ruby version is designed for individuals who are blind. A book or page is placed on the scanner. The software immediately reads the material in an easy to understand synthesized voice. Voice options are available. Both products are by Arkenstone and on display is Open Book, Ruby purchased through Nanopac $995 to be used with HP scanner $325.

- **Recorded material** such as books on tape, and taped lectures with number coded index are useful for individuals who have visual impairments or for those who retain more effectively with auditory feedback.

Aids for Math Skills
- Abacus
- Calculators with or without print out
- Talking Calculator with large keys or large LCD, LSS 8.95
- On screen calculators
- Software with templates for math computation (consider adapted input methods)
- Tactile or voice output measuring devices (e.g. clock, ruler)

**ELECTRONIC AIDS TO DAILY LIVING (EADLs) AND SWITCHES**

- **Use of Powerlink and switch to turn on electrical appliances (e.g. radio, fan, blender)** - The Powerlink2 control unit is durable, flexible, and portable. It is designed to be used with a wide variety of electric devices. The Powerlink2 allows you to choose different modes of control: direct, timed seconds, timed minutes, and latch. “Modes” determine the amount of time the appliance operates once the user activates the switch. What that means is the ability to match the individual’s needs to specific activity requirements. The user can have active participation no matter how severe the disability. Ablenet, $159.

- **Touch Light Lamp Control** – The touch light lamp control turns any ordinary bulb into a three way light; touch any metal part of the lamp to switch it on and off. This device is useful for those with arthritis, poor dexterity, or mobility impairments. It is easy to install in the socket. ILA, $11.95
- **Motion Detecting Wall Light Switch** Senses motion within 20 feet and turns the light on. 4 minutes after sensing motion, it turns the light off, saving energy. Use as a safety device, in children’s rooms, corridors, basements, or garages. ILA 482300, $22.95
- **Lamp Switch Extension** – A lamp switch extension lever has three spokes and fits over most standard switches to provide a better grip and leverage for individuals with limited grasp. Sammons Preston, $6.95.
- **Mini-Environmental Control Center** – The Mini Remote Control Center allows you to individually turn on or off up to eight lights or appliances from one point. With one switch, an individual can turn on all lights in an emergency or turn off all appliances and lights with a single button. Dimming is available. It is easy to set up and customize with the modules. This device is an inexpensive environmental unit for individuals with mobility impairments. Purchased from Radio Shack, mini control ($14.99) and module ($13.99).
- **Power Failure Emergency Light** – The emergency light automatically goes on in a power failure and lasts for a little over an hour. The unit stays plugged in and is constantly charged. The unit detaches for use as a flashlight. ILA, $14.95.
- **Flashing Door Beacon** – The flashing door beacon responds to knocks (vibration activated) by flashing an extra bright light that lasts for several seconds. This device is useful for individuals with hearing impairments. Maxi Aids, $28.95.

**Switches**

Switches can be used for computer access, communication device access, and/or other task functions. There are two types of switches: mechanical or electronic. Electronic switches do not require pressure for activation. Instead, users activate the switch by moving an object or body part within the set range of the switch. No fine motor skills are required. In contrast to electronic switch components, mechanical switches rely upon a moving part for switch activation. Direct pressure is also required to activate a mechanical switch.

- **Big Red Switch** is easy to see and use and very durable. Activates no matter where you press on the large 5” surface. An audible click benefits those needing audible feedback. Ablenet, $42.
- **JellyBean Switch** offers the greatest flexibility; same as the Big Red but with a 21/2 inch surface. Ablenet, $42.
- **Plate Switch** is ergonomically designed so that only the slightest movement will activate the sloping plate. Enabling Devices, $20.
- **Ultimate Switch** comes with a gooseneck and clamp; it is a universal, versatile, and multifaceted switch designed to be used by even the most profoundly challenged or neurologically impaired individuals. Requires a light touch but can withstand the abuse of gross body movements or severe blows. Enabling Devices, $65.
- **Wobble Switch** on vertical stand will activate a device through swiping action or any body movement and then return to its original position when released. Enabling Devices, $41.
- **Foot Switch** operates with one step. It is easy to operate, durable, and activates with just a light touch of the foot. Enabling Devices, $30.
- **Pillow Switch** is soft, pliable and is ideal for people with limited head and limb movement. Enabling Devices, $28.
- **String Switch** is a sensitive switch that is activated with a tug. It is durable and designed especially for people with limited movement. It requires less than 1/2 ounce of tension to activate. Enabling Devices, $19.
- **Saucer Switch** is ideal for those with limited motor abilities and is designed for individuals who are unable to control or sustain the hand or wrist movements necessary to operate traditional plate switches; has adjustable pressure. Enabling Devices, $26.
- **Lighted Signal Switch** is a low profile, sensitive switch with a texture which encourages activation; bright light provided. Enabling Devices, $32.
- **Grip and Puff, Dual Purpose Switch** is a pneumatic switch that is activated by slightly grasping the vinyl grip; remove the grip and use it as a puff switch. Enabling Devices, $46.
- **Ellipse Switch** offers a low profile along with a light touch and high tech styling. It is made for a small, medium, or large hand with muted colors which appeals to adults. One is suitable for the thumb or finger, the medium size is suitable for a hand or on a wheelchair tray, and the large switch provides a large target area. Don Johnston, $67.50.
- **Eyebrow Switch** is a single switch that comes mounted on a lightweight adjustable visor. The switch is activated by slight upwards movement of the user’s brow. Words+, $35.
- **Mechanical Microswitch** is a very small, versatile single switch. The most common use is to simply hold it in the hand and activate it with the thumb or forefinger. Words +, $25.
- **Rocking Plate Switch** can activate two devices independently with a seesaw action. Enabling Devices, $36 or $27.
- **Switch Latch and Timer** lets an individual use switches to turn devices on and off or turn on a device for a specific length of time. Latch mode and timed mode available. Don Johnston, $149, Ablenet, Enabling Devices.
- **SCATIR Infrared Switch** – Electronic type of switch from Artificial Language Laboratory, Michigan State University. It is a self-calibrating, auditory tone, infrared switch. Uses a 9-volt battery; has an infrared sensor and a mono plug. Purchased from Nanopac, $285. Other examples of electronic switches are the Infrared/Sound/Touch (IST) Switch ($195), the Touch Sensor ($100) and the Infrared Sensor ($100) from Words+.

**VISION AND HEARING**

**Vision**
- **Magnifiers** – Magnifiers are available in many styles such as the around-the-neck version which keeps both hands free, ILA, $6.95; a full page magnifier with legs and strap which magnifies 2X; read or write without holding the lens. ILA $9.95; reading magnifier with sheath is small and portable. LSS, $1.95; retractable pocket magnifier has a slide out double lens to change from 3X to 6X magnification, LSS $4.95; Eschenbach illuminated halogen stand magnifier, $150.
- **Computer Screen magnifier** – A computer screen magnifier easily attaches to or hangs from the computer monitor to provide screen enlargement of 2X which is useful for someone with low vision. Anti-glare and anti-reflection and UB block. LSS, $39.95.
- **Screen Magnification Software (e.g. Closeview for Mac, ZoomText)** -
  ZoomText Level 2 is magnification software for the computer for individuals with low vision. It can magnify up to 16X, though most people typically use 2X to 8X. Level 1 is a screen magnifier only and Level 2 provides voice output and some document reading capability. The product is also useful for navigating the Internet. Manufactured by AISquared and purchased through Nanopac, $395, and $595.
- **CCTV**- Closed Circuit Televisions provide magnification of reading materials through the use of a camera unit and a television. On display is a hand held portable CCTV. It easily connects to
any TV set without the need for any other adapter. Features: positive/negative viewing, use of left or right hand, magnifies print on either curved or straight surfaces, variable magnification from 12X to 22X on 20” TV sets. Available for full color. LSS $299 and $399. Nanopac offers Optelec CCTVs from $1800 to $3600.

- **Screen reader** – A screen reader such as JAWS for Windows is a computer navigation tool for individuals who are blind and cannot use a mouse. Screen reading software operates a speech synthesizer, which voices the contents of a computer screen. Screen readers are compatible with word processing, spreadsheet, and database packages. Available through Henter-Joyce, Inc. and purchased through Nanopac, $795.

- **Scanner with Talking Word Processor** – Scanner/Readers convert typewritten or typeset material into clearly spoken synthesized speech. Text can be read immediately, stored on computer disk, saved into a word processing application, or prepared for Braille production. Open Book, Ruby version is designed for individuals who are blind. A book or page is placed on the scanner. Voice options are available. Product is by Arkenstone and purchased through Nanopac $995 and used with HP scanner $325.

- **Type n Speak Notetakers** - portable product for individuals who are blind; also Braille Notetakers such as Braille N Speak. Include calendar and appointment book. Available through Nanopac or Blazie $1349; Type ‘n Speak $1395.

**Aids for Daily Living for visual impairments**

- **Liquid Level Indicator** – The indicator beeps when a cup is almost full. ILA $14.95.

- **Talking Watch** – Watch tells you the time, settings, and functions. Useful for reminders to take medication or keep appointment. ILA $10.95.

- **Braille Timer** – Reliable 60-minute timer with a Brailled face so the individual can set it without seeing it. ILA $15.95.

- **Sladecolor Identification Buttons** – useful for people with visual impairments when selecting clothes and color labeling. The 16 shades of colors are each represented by a different shape. 5 buttons of each shape/color are in the set. They can be sewn in clothing and glued on surfaces. ILA, $27.

- **Check Writing Guide** – plastic writing guide with cutout lines for check areas. Maxi Aids, $.89.

- **Letter Writing Guide** – durable plastic sheet with 13 openings to correspond to standard line spacing. Writing aid is useful for people with low vision or with hand tremors. Maxi Aids, $2.50.

- **Envelope Writing Guide** – sturdy plastic guide with corresponding openings for a standard envelope. Writing aid for people with low vision or with hand tremors. Maxi aids, $.99.

- **Signature Guide** - sturdy plastic guide with opening to correspond to standard signature area. ILA $.50.

- **Talking Travel Alarm Clock** – compact unit has a clear, great sounding voice and fits easily into purse or pocket. Automatic hourly announcements plus time at a touch. Excellent for those with visual impairments. LSS, $17.50.

- **Talking Memo** – This small device offers two 10 second channels, which are handy for brief reminders such as phone numbers, appointments, names of lists of things to do. ILA, $10.95

- **Tel-Ease Visual and Hearing Phone** – This phone has an amplified receiver handset, flashing ringer for notification for individuals with hearing impairments, and large buttons for those with visual impairments. LSS, $91.95.
- **Braille Low Vision Ruler** – Braille and tactile symbols have been added to ½” large black numbers to make this ruler useful to someone with a vision problem. ILA, $2.59.
- **Big Print Check Register** – The check register has extra large boxes and bold column heading for 350 entries. Maxi Aids, $6.50.
- **EZ Giant Print Address Book** – provides large writing spaces with listings for addresses and numbers. Low vision pen included; tabs and spiral binding. Maxi Aids, $10.95.
- **Bold lined Paper** – white paper with bold black lines on both sides on the standard size sheet; useful for low vision. ILA, $4.
- **Talking Caller ID** – announces caller’s 10-digit telephone number and stores the 10 most recent calls for audible review; includes number, date and time of call, and indicates the number of new calls. LSS, $24.95.
- **Talking Calculator** – announces numbers and results and has large keys to aid those with low vision. LSS, 8.95
- **Parrot Voice Organizer** – voice recognition device that stores numbers and will recall as you say the person’s name; voice notepad; meeting planner, date and time is spoken and can find a meeting with the help of a keyword; talking clock and alarm; talking calculator; control panel; can download information to your computer. LSS, $189.95.
- **Reizen Message Announcer** – useful for visually impaired to find location or hear a message; motion sensor detects and plays message automatically when passing by. Maxi Aids, $29.95

**Hearing**

- **Hearing aids** are devices that facilitate better hearing for individuals with hearing impairments. Not on display.
- **Office or Classroom amplification** – Personal FM systems are wireless listening systems, which are useful in the classroom, in meetings, for TV use, and in the car. The individual with a hearing impairment wears the earphones or headphones and the speaker uses the lapel microphone. Available through LSS has Williams Sound Hearing Helper System $448.95.
- **Pockettalker Pro** – The PocketTalker Pro is a personal, versatile, amplification listening system for listening to the TV and one-on-one conversations. LSS Group, $120.95.
- **Captioning** – captioning provides visual text to videos or television programs for individuals who have hearing impairments.
- **Signing device (e.g. vibrating pager)** – the Alertmaster AM6000 is a visual notification system for those who are deaf/hearing impaired. It notifies of telephone, door, alarm clock, smoke detector, and baby cries. Harris Communications or LSS, $179.95. A personal tactile signaler or pager for an individual who is deaf/blind is also available for $89.95.
- **TDD/TTY for phone access** – Telecommunication Device for the Deaf; text output from telephone for individuals who are deaf.

**Aids for Daily Living for hearing impaired**

- **Shake Awake Alarm Clock** – The vibrating alarm clock is useful for individuals with hearing impairments or for sound sleepers due to medication. Place it under pillow; also has loud alarm; convenient for travel. LSS $24.75.
- **Clarity Portable Amplifier** – Amplifier helps high frequency hearing loss by making words clearer and louder. Maxi Aids, $23.50.
- **Portable Amplifier III (AT&T)** – increases volume of incoming phone call up to ten times as tone control improves clarity. Can be slipped onto almost any handset. LSS, $22.95.
**Amplified Handset** – replaces handset on most phones; amplifies up to eight times for louder and clearer conversation. LSS $29.95.

**Flashing Door Beacon/Door Knocker** – The flashing door beacon responds to knocks (vibration activated) by flashing an extra bright light that lasts for several seconds. This device is useful for individuals with hearing impairments. Maxi Aids, $28.95.

**3 Memory Jumbo Button Phone** – large buttons are useful for those with hand tremors; the memory is useful for storing numbers of frequently called people; volume control, redial, incoming call indicator, and hearing aid compatible. Maxi Aids, $18.75.

**AIDS FOR DAILY LIVING**

- **Loop scissors** – comfortable, lightweight, self-opening scissors require only half the effort of regular scissors, and can be used with either right or left hand. Ergonomic handle enables easy operation with a simple squeezing action between the thumb and finger or thumb or palm. SP, $9.95 or School Specialty, $3.49.

- **Roll-cut Bladeless Scissors** – cuts any type of paper without blades; safer than regular scissors; also good for those with arthritis or carpal tunnel syndrome; cut by rolling instead of squeezing for no hand cramping or fatigue. Easy Street, $18.

- **Leveron Door Opener** – the door lever is easy to install over any standard doorknob to make it easy to open the door for someone with a weak grip. ILA $10.95.

- **Car Door Opener** – useful for those with weak hands due to arthritis, trauma or deformity. Designed to eliminate stress on small finger joints by drawing on strength of whole hand for a more powerful, comfortable grip. The opener’s leverage point is at the door handle, not the car body. For push and pull handles. SP, $14.25.

- **Reacher** – the EZ locking reacher is lightweight and provides a powerful and secure grip for objects. Useful for those with tremors, arthritis, or limited hand strength. Sammons Preston, $21.25.

- **Foam Padding** – Cut as needed from lengths of foam to build up pencils, spoons, and other self-help aids. Built up handles are easier to grasp and control for those with tremors, arthritis, and limited hand strength. Medical supply stores, SP, $5, length.

- **Television Remote** – TV Partner Remote is a universal remote with large buttons and is very useful for those with impaired vision or hand tremors. ILA $39.95.

- **Utensil Handclip** – spring action clip fits the hand and holds the utensil securely. Excellent for persons having difficulty in grasping and holding small utensils. ILA $3.95.

- **Offset Spoon** – ideal for those with limited wrist motion and/or decreased upper extremity control. For left or right hand. SP, $8.

- **Inner Lip Plate** – useful for individuals with limited hand control; the plate holds the food on the plate, while the person brings the fork or spoon to the edge of the plate. $4.25.

- **Easy Liner** – provides stable, nonslip eating surface or can be used on or below chairs, and under rugs. Walmart, $4 a roll; or purchase Dycem, SP.

- **Deluxe Foam Utensils** – soft, contoured foam is ideal for those with limited hand grasp. Offset spoons are designed for decreased wrist motion. $7.50 ea. SP.

- **Clip on Food Guard** – attaches to plate and aids in scooping and keeps food on plate. Sammons Preston, $4.95.

- **Automatic Faucet Control** – control for those with a weak grasp; eliminates need to turn water off and on; requires gentle pressure from back of hand or finger. SP, $10.95.
- **Clip on Timer** – people who have attention problems can set the timer, clip it on clothing, walk off and still be reminded of food in oven or on stove. Use a safety or memory aid. Walmart, $10.
- **Zipper Pull/Button Hook** – hook the zipper tongue and pull it closed without straining an arm or back. The handle is easy to grasp. The buttonhook on other end is used by passing the loop through the buttonhole and over the button. Useful for those with tremors due to medication, arthritis, and/or limited hand strength. ILA $6.95.
- **Sock Aid** – Socks or stockings are drawn over the flexible plastic core. Attach socks to garters on the aid and insert foot. Pulling brings sock over heel and calf. SP, $9.95.
- **Door Stopper/Alarm** – wedge shaped doorstopper has piercing alarm to alert you of an intruder. Non-skid pad secures stopper-the harder the door is pushed, the tighter it holds. The Lighthouse, $14.95.
- **Pillbox and Timer** – this device carries pills and reminds the user when to take them. ILA, $10.95.
- **Pill Organizer** – Multi-day pill organizer/dispenser useful for those with memory loss due to medications or conditions: 28 openings, large capacity to hold four separate daily dosages for each day of the week. Marked with morning, noon, bedtime, and evening. Clear dispenser allows caregiver to check if medication has been taken. ILA $3.95.
- **Pill Splitter** – splits pills safely and precisely; excellent for those with arthritic and/or trembling fingers or for those with impaired vision. ILA $4.95.
- **Pill Cap Opener** – open safety caps easily; useful for those with tremors, arthritis, or limited hand strength. $3.50 at pharmacies.
- **Bubble Pack for Pills** – medication can be dispensed in the bubble packs provided by most pharmacies. Helps mete out prescriptions as well as indicate to caregivers if medications have been taken. Also a solution for those who cannot open safety lids.

**MOBILITY**
- Walkers
- Folded Cane with Seat – on display from ILA, $18.95
- Grab rails
- Manual wheelchair
- Powered wheelchair with joystick, head switch, or sip/puff controls

**POSITIONING AND SEATING**
- Nonslip surface such as easy liner or Dycem on chair to prevent slipping
- Bolster, rolled towel, or blocks for feet
- Adapted or alternate chair, side lyer, stander
- Custom fitted wheel chair or insert