Section 1:

The Possibilities of Assistive Technology

The Possibilities of Assistive Technology

More than ever before, technology makes it possible for children with disabilities to lead independent and fulfilling lives.

For example, a young girl who is unable to speak can communicate with family and friends using a portable electronic device that "speaks" for her; a boy with a physical disability can use his electric wheelchair to participate in sports; and a young adult with a learning disability can compose a school report with the help of a computer.

Parents may have seen or heard about this type of technology and wondered how it might help their children. This equipment is frequently called "assistive technology." Assistive technology (AT) helps a person with a disability do something s/he otherwise cannot to do. Assistive technology can be anything from a simple device, such as a magnifying glass, to a complex device, such as a computerized communication system.

The term "assistive technology" comes from several laws that address the needs of people with disabilities. Assistive technology includes both the devices and the services needed to use the devices effectively. AT services might include assessing a child's need for AT and the training the child and his teacher, aide, and family to use the AT.

How Can Assistive Technology Help My Child?

The potential of technology to help children with disabilities is tremendous. Assistive technology can help children be more self-sufficient at home and in school, communicate with friends and family, get out into the community, and as they grow older, find employment. The story on page 4 illustrates how assistive technology can play a key role in the life of a child with a disability.

How Do I Determine What Type of Technology My Child Needs?

The process of choosing assistive technology for your child usually starts with an evaluation of your child's AT needs. The evaluation can be conducted by the school, an independent agency, or an individual consultant. Because the scope of assistive technology is so large, the evaluation will most likely have a focus. For example, an AT evaluation conducted by the school is directly related to achieving educational goals and outcomes.

Every AT evaluation should address what the child is having difficulty doing. For example, if a child is having difficulty with mobility, the evaluation would focus on technology to assist with that, such as a wheelchair or scooter.

During the evaluation it is important to talk about your child's strengths in addition to his challenges. For example: "What does he do well?" "What does he enjoy doing?" This type of input will provide clues as to what type of technology might work, and how well your child will respond to it.

It is also important to consider the different environments in which your child interacts with others – at home, school, and in the community. Think about how your child's needs for assistive technology might be different on the playground, the classroom, at a friend's house, or at a public place, such as a library or mall.

AnAT evaluation will result in a recommendation for specific devices and services, including any modifications to the child's environments. Long-term success with AT involves an ongoing look at need, equipment trial and evaluation followed by maintenance and growing expertise by the user, family, and professionals. It is important to remember that AT needs usually change with time, circumstances, and goals.

Education Mobility Employment

Areas in which AT Can Help Your Child

Socialization Communication Leisure & Recreation

Meet Freddie...

Freddie is a 21-year-old young adult with spina bifida and multiple health impairments. Since he was a small child, Freddie's disabilities have severely limited his functional abilities, particularly his mobility and speech. Because of Freddie's many needs, he has relied heavily on different types of assistive technology throughout his life. His mother, Deborah, says that without AT he would not be able to live at home, attend school, go out in the community, or be employed.

Technology for Communication
Freddie was assessed for a communication device when he was in kindergarten because his speech was difficult to understand. Since then, he has used many different communication tools, and he currently uses a computerized communication device that helps him talk with others in different situations.

Technology for Mobility
Since Freddie was 2 years old he has used a wheelchair to get around at home and at school. In first grade he began to use a power wheelchair that he controlled with a joystick. The power wheelchair gave him greater freedom and now he uses it to travel throughout the community independently.

Technology for Education
Freddie also has limited use of his arms, so he cannot hold a book to read, or a pencil to write. Because of these limitations, he has used books on tape and talking computer books to help him learn to read and write. He has also used the computer to type his writing assignments for school.

Technology for Work
As a young adult, Freddie has found computer-related employment, using a computer with adaptive devices such as a trackball mouse and special software for typing.

Technology for Social and Leisure Activities
For social interaction, Freddie has been able to use e-mail and the Internet to stay connected with friends and family and to keep up with current events. He also uses the computer for recreational activities, such as listening to CDs or watching videos. Freddie's mother feels that the computer has been "the most important piece of assistive technology" in his life because it provides a vital connection with the rest of the world.

Not every child will need as much assistive technology as Freddie uses, but AT can help many children with different needs realize their potential. Assistive technology can include adapted toys, handheld dictionaries, computers, powered mobility, augmentative communication devices, special switches, and thousands of commercially available or adapted tools to assist an individual with daily living activities.

Learning About Assistive Technology

Parents can help to identify potential AT for their children if they learn more about the choices that are available. Speech-language therapists, occupational therapists and school professionals are often a good starting point. You may not be aware, however, of the many other organizations that provide AT information and training, such as parent training and information centers (PTIs), community technology centers, state assistive technology programs, and rehabilitation centers. The Family Center on Technology and Disability (FCTD) is funded by the U.S. Department of Education to make available a wide range of AT resources to people and organizations that work with families. Families are always welcome to visit the FCTD's website at **www.fctd.info** to find organizations to work with and to learn more about assistive technology. See the Resource Section of this guide for more information about locating such centers and programs.

If possible, you should visit an assistive technology center with your child to see and try out various devices and equipment. Some AT centers offer a lending program that enables families to borrow devices for a trial period. Parents can seek out AT workshops, trainings, and conferences and there are many opportunities to learn about AT on the Internet as well.

Meet Trey...

Trey, now 8-years-old, was born with Down syndrome and numerous other health problems. He hasn't talked since he was born. Because Trey was unable to communicate his needs and wants he often became very frustrated and then acted out by yelling and throwing things. When Trey was 3 years old, his parents decided to have him evaluated by a communication specialist in their school district. The evaluation determined that Trey could benefit from having a communication device to help him express his needs and communicate with others, but she suggested a trial with a couple devices to find out which worked best for Trey and his family.

Lisa and Stephen, Trey's parents, were unfamiliar with communication technology, but the school specialist helped them learn about the different devices that they would try with Trey at home and at school. For several weeks the family tried a simple voice output device with six messages, which led the parents and the specialist to realize Trey's vocabulary would very quickly outgrow that particular device. In the end, they decided on a 32-message device with multiple recording levels. This product, called "Tech Speak," became Trey's first communication device. Soon Trey was able to activate buttons to form simple requests, such as "I want crackers."

"Finding the right technology for Trey is an ongoing process and not always easy. I encourage parents to try out different devices with their child at home and school before settling on one device. It's been invaluable for me to link up with a parent advocacy organization and support groups to learn about the technology available, but more importantly to learn advocacy skills that have helped me get the technology Trey needs."

-- Lisa, Trey's mother

The following pages describe a number of common assistive technology options in different goal areas. This is only a brainstorming list and is not intended to be comprehensive. Check the "Glossary" for any words and terms that are not familiar to you.

Aids for Daily Living

▶ **Eating**
___ Adapted utensils/plates
___ Arm support
___ Automated feeding

▶ **Dressing**
___ Velcro fasteners
___ Button hook
___ Dressing aids

▶ **Recreation & Leisure**
___ Adapted toys and games (*e.g., puzzles with handles*)
___ Battery interrupters and switches
___ Adapted sporting equipment
       (*e.g., Velcro mitt, lighted or beeper ball*)
___ Universal cuff to hold crayons, markers, paint brush
___ Modified utensils (*e.g., rollers, stampers, scissors*)
___ Articulated forearm support (*e.g., ErgoRest*)
___ Drawing/graphics computer programs
___ Music or games on the computer

▶ **Home Living**
___ Switch
___ Battery interrupter
___ Control unit
___ infrared sender / receiver
___ X-10 unit and peripherals

Studying/Reading/Math

▶ **Learning /Studying**
___ Print or picture schedule
___ Low tech aids to find materials
       (*e.g., color tabs, colored paper or folders*)
___ Highlight text (*e.g., markers, highlight tape, ruler*)
___ Voice output reminders for tasks, assignments, steps to tasks
___ Software for manipulation of objects/concept development
       (*e.g., Blocks in Motion, Thinking Things*)- may use alternate
       input device such as Touch Window
___ Software for organization of ideas and studying
       (*e.g., PowerPoint, Inspiration, ClarisWorks Outline*)

▶ **Reading**
___ Changes in text size/space/color/background color
___ Book adapted for page turning
       (*e.g. with page fluffers, 3-ring binder and folders*)
___ Use of pictures with text (*e.g., Picture It, PixWriter*)
___ Talking electronic devices for single words
       (*e.g., Reading pen, Franklin Bookman*)
___ Scanner with OCR and talking word processor
___ Electronic Books (*e.g., Start to Finish*)

▶ **Math**
___ Abacus, math line
___ Calculator/calculator with print out
___ Talking calculator
___ Calculator with large keys, large display
___ On-screen calculator
___ Software with cueing for math computations
___ Tactile/voice output measuring devices (e.g. clock, ruler)

▶ Alternate Computer Access

___ Keyboard with easy access or accessibility options
___ Word prediction, word completion, macros, abbreviation expansion to reduce keystrokes
___ Keyguard
___ Alternate mouse
(*e.g., TouchWindow, trackball, trackpad, mouse pen*)
___ Mouse alternative with on-screen keyboard
___ Alternate keyboard
(*e.g., Intellikeys, Discover Board, Tash*)
___ Mouth stick, head pointer with keyboard
___ Switch with Morse code
___ Switch with scanning
___ Voice recognition software and hardware

Composing Written Material

___ Word cards, word book, word wall
___ Pocket dictionary, thesaurus
___ Electronic dictionary/ spell check
(*e.g., Franklin Spelling Ace*)
___ Word processor with word prediction
(*e.g., Co:Writer or Word Q) to facilitate spelling and sentence construction*)
___ Multimedia software for production of ideas
(*e.g., PowerPoint, Overlay Maker w/ talking word processor*)
___ Voice recognition software

▶ Mechanics of Writing

___ Pencil/pen with adapted grip
___ Adapted paper
(*e.g., raised lines, highlighted lines*)
___ Slantboard
___ Typewriter
___ Portable word processor
___ Computer

Communication

___ Communication book / board
___ Eye gaze board
___ Simple voice output product
(*e.g., Big Mack, CheapTalk, Talking Picture Frame*)
___ Voice output device with levels
(*e.g., Macaw, CheapTalk with Levels, Dynavox*)
___ Voice output with icon sequencing
(*e.g., AlphaTalker, Vanguard, Liberator*)
___ Voice output with dynamic display
(*e.g., Dynavox, laptop with Speaking Dynamically*)
___ Device with speech output for typing
(*e.g., LinkPLUS, Write:Out Loud with laptop*)

Transition

▶ Work/School to Work

___ Scheduling aids (*calendars, reminders, task analysis*)
___ Switch/device
___ Adapted keyboard
___ Communication aid
___ Keyboard emulator

▶ Adaptations

___ Adaptive seating/positioning
___ Electronic communication
___ Electronic organizers
___ Adapted computer input
___ Environmental control units

Section 2:
Assistive Technology in Schools

Assistive Technology in Schools

Assistive Technology in Public Education

Jonathan is a 5th grader with a physical disability that makes it difficult for him to write by hand. He does much better using a portable word processor that the school provides for him as part of his special education program. Jonathan uses the device to take notes in class and to complete all of his written work. He even takes it home with him to complete his homework assignments. The portable word processor has helped Jonathan keep up with his school work and maintain a B+ average.

The portable word processor is an AT device that Jonathan's Individualized Education Program (IEP) team determined was necessary for him to fulfill his educational goals. Without it he would not be able to keep up with the rest of his class and would be dependent on others to help him complete his school work.

Jonathan's story is a good example of how assistive technology at school empowers students with disabilities and encourages academic success. Unfortunately, it is not always easy to obtain the technology for school use, and parents may not know enough about AT devices and services to ask the right questions.

This section of the Family Information Guide provides resources and information about assistive technology for use in school. It discusses:
►   Laws that require assistive technology to be considered for students receiving special education services
►   How to work with the school to determine your child's AT needs
►   Where to find information about AT devices and services for school use

There may be terms in this discussion with which you are unfamiliar, such as "least restrictive environment," "mediation," or "due process hearing." Please refer to the guide's glossary for definitions of these and other terms as they are used in the context of assistive technology.

Understanding the Law and Assistive Technology

It is important for parents to understand how laws impact their child's right to receive AT services at school. The **Individuals with Disabilities Education Act (IDEA)** requires public schools to make available to all "eligible" children with disabilities a "free appropriate public education" (FAPE). To determine if they are eligible for special education services, students must be evaluated. A parent, teacher or related service provider, such as a therapist, can ask for a special education evaluation. The school system must provide the evaluation at no cost to the family. If the student is found to be eligible, then special education services must be made available to the student at no additional cost to families. A family should not wait until a child is ready to enter first grade to begin the evaluation process. IDEA has two parts: Part B applies to children with disabilities from three to twenty two years old. Part C applies to infants and toddlers - from birth to three years old.

The law requires that public schools develop Individualized Education Programs (IEPs) for each eligible child with a disability. The specific special education services, including assistive technology, that are outlined in the IEP should reflect the individual needs of the student. IDEA requires that particular procedures be followed in the development of the IEP. Each student's IEP must be developed by a team of knowledgeable persons and must be reviewed at least once a year. The team usually includes the child's teacher, the parents, the child, if appropriate, a school system representative who is qualified to provide or supervise the special education services, and other individuals at the parents' or school's request. As their child's strongest advocate, families should insist, politely but strongly, that assistive technology be considered in the IEP process and that both AT devices and services - such as teacher training on AT equipment - be included in the written IEP if needed to recieve FAPE. When AT is included in an IEP it is the school's responsibility to make sure it is provided.

> When AT is included in an IEP, it is the school's responsibility to make sure it is provided.

If parents disagree with the proposed IEP, they can request a due process hearing and a review from the state educational agency if applicable in that state. They also can appeal the state agency's decision to state or federal court. Read more about the IEP process on page 12.

You can find more information about IDEA and recent changes in the law at:

► http://www.ed.gov/offices/OSERS/Policy/IDEA/index.html — Department of Education
► http://www.cec.sped.org/law_res/doc/law/index.php — Council for Exceptional Children
► http://www.usdoj.gov/crt/ada/cguide.htm#anchor62335 — Department of Justice

Section 504 of the Rehabilitation Act is a federal civil rights law that prohibits discrimination against individuals with disabilities. Section 504 affects all programs that receive federal funds, including public schools. The law states that students with disabilities must be given the same opportunities to participate in educational programs and activities as students without disabilities, and the use of assistive technology may be considered as an accommodation.   Therefore, even if a child does not meet special education criteria, it is sometimes possible to acquire needed devices through a 504 Plan. For example, a student with poor handwriting due to impaired fine motor skills may be given access to a computer to complete written assignments. Section 504 does not require school districts to develop an IEP for students. However, the district should document in a written 504 Plan what evaluations were performed and what decisions were made regarding the student.

You can find more information about Section 504 of the Rehabilitation Act at:
▶ http://www.section508.gov/index.cfm?FuseAction=Content&ID=12
▶ http://www.ataporg.org/itqa.asp

Your Child's Individualized Education Program (IEP) and Consideration of Assistive Technology

As mentioned above, IDEA requires that children with disabilities have an Individualized Education Program (IEP). The IEP is a written plan for educating a child with a disability. The IEP describes the educational program and services that the IEP team feels will meet your child's specific needs, such as school placement, services, and equipment.

A number of states have posted online guides to the IEP process. Examples include:

▶ Nebraska's *IEP Technical Assistance Guide*:   http://www.nde.state.ne.us/SPED/iepproj/
▶ Wisconsin's *A Guide for Writing IEPs*:   http://www.dpi.state.wi.us/dpi/dlsea/een/pdf/iepguide.pdf
▶ Massachusetts' *IEP Process Guide*:   http://www.doe.mass.edu/sped/iep/proguide.pdf
▶ North Dakota's *IEP Planning Process*:   http://www.dpi.state.nd.us/speced/guide/iep/index.shtm
▶ New York's *Sample IEP & Guidance Document*:   http://www.vesid.nysed.gov/specialed/publications/policy/iep/home.html

Consideration of Your Child's Assistive Technology Needs

What does "consideration" of assistive technology mean? Although the process of "consideration" is not defined by the IDEA law, in general, it should be more than just checking a box on a form that states that the AT needs of your child have been considered. Although there is no single approach to considering your child's AT needs, most IEP teams will follow a process that takes the following steps:

1.   Gather information about your child, his/her disability and abilities and ask the following questions.
   ☐   What does your child need to do but is unable to do because of his/her disability?
   ☐   What are your child's customary environments? These environments include the classroom, the playground, bus, music, gym, and lunch periods.

2.   Share information gathered about your child. Parental input is very important and you should be actively involved in the process.

3.   Remember that your child's preferences in areas such as color and style are important things to consider. Many parents tell stories of successful AT adoption that hinged on a child's sense that a particular piece of equipment was "cool." Likewise, a child may resist using a piece of equipment that he thinks is "nerdy" and sets him apart from the rest of his class. Children want to fit in with their peers, so a device that is less conspicuous than another might be preferred even if it has fewer "bells and whistles."

IDEA law and Assistive Technology

► Your child's assistive technology needs must be considered.

► If necessary, an AT evaluation must be performed

► AT devices and/or services must be provided by the school system if identified in the child's IEP.

► Training of teachers, aides, and the student may be listed in the IEP as "AT services"

4. Make a list of the child's needs, environments, and tasks, and prioritize your child's biggest educational challenges, such as communication, mobility, reading, writing, or behavior issues.
Questions to discuss with the IEP team:
☐ What are the biggest challenges for my child?
☐ Which challenge should we focus on first?

5. The IEP team brainstorms possible solutions to your child's main goals.
Questions to ask include:
☐ What assistive technology tools are available to help my child overcome these challenges?
☐ What criteria will be used to determine if the AT has been successful in reaching the agreed-upon goals?

6. After listing possible AT tools that the team thinks might help your child achieve her goal, the team needs to decide which device they will try first. Sometimes a number of different AT tools will need to be tried before an appropriate one is found for your child.
The IEP team should discuss:
☐ What are the specific features of the AT device that can help your child?
☐ What tools are readily available from the school, the district or a loan library?
☐ Who will need to be trained to get maximum benefit from the AT device or service? What are the sources of training?

> The term "assistive technology" may never appear on the IEP forms used by your child's school. Instead, the form may use terms such as "accommodations, supports, program modifications, or supplementary aids and services."
>
> No matter what form is used by the IEP team in your child's school, the team is required by law to consider your child's need for assistive technology.

7. After deciding upon a device to try, the IEP team needs to acquire the device for the student to experiment with. Some schools have access to libraries of technology that are shared among schools or districts.

During the trial period with the device, IEP team members need to collect data about the child's use of the device.
Questions to ask include:
☐ How often did the child use the device?
☐ Did it help him do something he could not do before?
☐ How was success with the device measured?

Sometimes a child may need to experiment with several devices before the team can decide which device has the features your child needs. After trying different devices and collecting data about which device worked best for the child, the IEP team should come to a conclusion about which device is most appropriate for the child.

☐   At the end of the consideration process, the IEP team should decide whether or not the assistive technology would benefit your child.

☐   **It is important to document in writing that the IEP team considered AT and if so, what AT devices and services are most appropriate for the child. Assistive technology devices and/or services must be provided if required in the child's IEP.**

Keep in mind that even if your child does not require assistive technology at the moment, he or she may benefit from using it in the future. Therefore, the law requires that your child's AT needs be considered continually as long as your child has an IEP. More information on the general IEP process is available through the National Dissemination Center for Children with Disabilities (NICHCY) at http://www.nichcy.org/resources/iep1.asp. The Parent Advocacy Coalition for Educational Rights (PACER Center) also has tips on making the IEP process successful at http://www.pacer.org/parent/iep.htm.

Obtaining a Formal Assistive Technology Evaluation for Your Child

If the IEP team is unable to determine what AT devices and services are best for your child, then a formal AT evaluation may be needed. The evaluation should be performed by a qualified professional in a timely fashion. This may present a problem, as there is a shortage of qualified AT evaluators in many areas of the country. The school system may choose to use its own personnel to conduct the evaluation, but if parents disagree with the recommendations, they have the right to an independent evaluation at district expense. Be aware, however, that parents may have to assume the cost of an independent evaluation if the results do not differ from the one provided by the school system and if the system can show that the original evaluation was appropriate.

Disagreeing with the school about assistive technology

You have the right to disagree with the school's decisions concerning assistive technology. Some situations in which parents and school personnel should meet to resolve disagreements include when:

▶   You disagree in writing with the IEP
▶   You believe your child is not receiving appropriate assistive technology devices and/or services
▶   You think additional devices and/or services are needed

When differences arise, try to resolve them informally first. If you can't work out a solution that is satisfactory, you can take more formal steps to reach a satisfactory resolution. The procedures for taking more formal action vary from state to state, but may include mediation, a due process hearing, or filing a formal complaint with the state.

You can get state-specific information from the Consortium for Appropriate Dispute Resolution in Special Education (CADRE) at http://www.directionservice.org/cadre/index.cfm. You can also contact a Parent Training and Information Center, a Parent Advocacy Center, a Tech Act Center, or an Alliance for Technology Access Center (in some cases, these will be the same organization). For contact information, you can use the Family Center's searchable database. Click on your state and "information center" and/or "advocacy center."