Down Syndrome Connection
of the Bay Area

Educator Manual

Together Inspiring and Requiring Unlimited Potential

ACKNOWLEDGEMENTS

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Down Syndrome Connection of the Bay Area
Encouraging the unlimited potential in children and young adults with Down syndrome

Down Syndrome Educational Alliance:
"Working together to educate students with Down syndrome to their fullest potential"

Dear Educator:

In its reauthorization of IDEA, Congress noted that "30 years of research and experience has demonstrated that the education of children with disabilities can be made more effective by having high expectations," and stated that all children are entitled to a free appropriate public education which is designed to "prepare them for further education, employment and independent living."

By partnering with the Down Syndrome Connection of the Bay Area (DSCBA), you have demonstrated your interest in enhancing the lives and educational experiences of all students with Down syndrome so that they are prepared to lead productive adult lives in the community. The DSCBA appreciates your interest and thanks you for your efforts. DSCBA is the only organization in the Bay Area which focuses exclusively on the needs of individuals with Down syndrome, including education.

Because of specialized services and a dramatic shift in our culture, individuals with Down syndrome are more fully included in schools, the community and workforce today than ever before. Individuals with Down syndrome can and do achieve great things.

Our hope is that the materials on this flash drive will provide information, tips, and materials that you can use in your classrooms. As you plan your approach to teaching students with Down syndrome, we ask that you focus on their ABILITIES versus disabilities. If you believe people with Down syndrome can learn, they will!

We recognize that there is a broad range of functioning between individuals with Down syndrome. We want to stress that what works for one student with Down syndrome may not be as effective for another. However, all students with Down syndrome have learning styles which usually require more thought about curricular choices. The materials, ongoing support and training we are committed to providing will assist you with those choices.

Please contact us at any time for more information about our programs and services. You can also follow us on Facebook www.facebook.com/dscba. I look forward to working with you and seeing you at the DSEA trainings.

Nancy LaBelle
Executive Director

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INTRODUCTION

a. About the Down Syndrome Connection of the Bay Area

The Down Syndrome Connection of the Bay Area (DSCBA), headquartered in Danville, CA, was started in 1998 by a group of parents seeking to fill a void in services and support available to children and adults with Down syndrome and their families. DSCBA is now recognized as the premier resource for children and adults with Down syndrome in the greater San Francisco Bay Area. DSCBA works closely with school districts and health agencies including Kaiser Permanente, John Muir Health, San Ramon Regional Hospital, and Pleasanton Valley Hospital to ensure that they have the most current information about resources for families with a new diagnosis of Down syndrome. We remain unique in that we are the only organization in the Bay Area dedicated to the special concerns and unique contributions of people with Down syndrome.

Mission

To promote the unique contributions of children and adults with Down syndrome by providing direct services to them and their families, and to educate the general public by fostering inclusive and integrated involvement with the Down syndrome community and society at large.

DSCBA Programs

The DSCBA provides the following services and support: prenatal consultation, multiple support groups (including parents, grandparents, fathers, siblings, and K-12 inclusion), information and referral, education and workshops, one on one advocacy, developmental Step classes for all ages, a resource and lending library, music therapy, outdoor field trips for teens and adults, community events for families, and a new Alternative/ Augmentative Communication (AAC) program that provides training, education, and a lending library of AAC devices. We also have a private Speech Therapist and Reading/Writing Tutor on site at our Danville headquarters for the convenience of our participants. Our programs augment the child's, teenager's, or adult's educational and social experiences through interactive and therapeutic activities, as well as to help prepare for integration into the community and society as a valuable participant and contributor.

Therapeutic Step Program: DSCBA is in its 14th year providing the Step program. Based on the developmental "steps" or stages for children, Step classes address developmental gaps for each particular age group, from fine and gross motor skills for babies and toddlers to social skills for teens and young adults. In the last year we expanded by adding classes, increasing staff, providing enhanced therapies, and improving evaluation and tracking systems. In particular in 2011 DSCBA provided more than 300 developmental Step class sessions for approximately 70 students and 30 new parents with babies. We added a new class in the Pinole area, offered music therapy and education-based workshops for new parents, and added enrichment to our classes such as field trips, scarf-making, and photography. Teachers and parents of participants in Step reported improvements in attention, gross motor skills, retention of information, personal responsibility, listening skills, eye contact, self-confidence, appropriate peer interaction, and comfort with new ideas and change.

Support Groups: Like our Step classes, staff- and volunteer-led parent and family-member support groups have been a cornerstone of DSCBA's services since our inception. We currently offer six groups that meet monthly, including a parents, parents of adult children, grandparents, fathers, siblings, and educational support for parents of school-aged children.

Expression Connection: In 2011 with funding from the California Communication Access Foundation (CCAF), DSCBA implemented a popular and successful Expression Connection Project, through which we provided hands-on workshops and tutorials for families interested in learning about and using Augmentative/ Alternative Communication (AAC) devices. We also began an AAC lending library, obtained important information regarding specific communicative needs, and developed an understanding of the communication tools and strategies that work best for each individual child and adult with Down syndrome in various settings. We are continuing this program with a new CCAF grant in 2012, which includes a greater emphasis on working with school districts to ensure that children with Down syndrome receive speech and AAC screenings, and that students are able to get the devices and services they need.

Advocacy, Education & Referral: DSCBA provides hundreds of hours each year of education and health advocacy to parents of children with Down syndrome, including attending meetings with school administrators and school boards, assisting families to develop individual education plans (IEP), and information and referral for the many parents who contact us by phone each day seeking resources, information, and support. We work closely with parents and caregivers to provide them with support, advocacy, and guidance as they navigate the school and other systems (such as healthcare and other support resources available in the community) to make them aware of their legal rights and ensure that they are getting the best possible care and support for their child.

The Down Syndrome Educational Alliance program, launched in 2012, will develop and train school-based Down Syndrome Specialists in greater Bay Area school districts, ensuring that all students, and particularly those with Down syndrome, have the specific support, tools, and resources to enable them to thrive and reach their highest potentials.

b. About Down Syndrome

IS IT "DOWN'S" OR "DOWN" SYNDROME?

Down syndrome is named after Dr. John Langdon Down, an English physician who first described the characteristic features of Trisomy 21 in 1866. People now use the term "Down syndrome" as opposed to "Down's syndrome" because Dr. Down did not have Down syndrome and he did not own Down syndrome.

WHAT IS DOWN SYNDROME?

For an unexplained reason in cell development, each cell results in 47 instead of the usual 46 chromosomes. In Down syndrome there is an additional number 21 chromosome, resulting in the medical diagnosis of Trisomy 21. This extra genetic material causes changes in the orderly development of the body and brain, as well as the physical characteristics and delayed physical, intellectual, and language development associated with Down syndrome.

MORE ALIKE THAN DIFFERENT

People with Down syndrome are more like their typically-developing peers than they are different. There is great diversity within the population in terms of personality, intelligence, appearance, humor, learning styles, compassion, compliance, and attitude. Although they may share characteristics and similarities in appearance, children with Down syndrome will look more like their family members than they do one another. They will have a full range of emotions and attitudes, are creative and imaginative in play, and grow up to live independent lives with varying degrees of support and accommodations.

Individuals with Down syndrome will establish friendships, pursue interests, and be included in community activities. Children with Down syndrome benefit from the same care, attention, and inclusion in community life that help every student grow. As with all children, quality education in neighborhood schools, preschools, and at home is important to provide the opportunities needed to develop strong academic and social skills.

FACTS ABOUT DOWN SYNDROME

- Down syndrome is the most common chromosomal abnormality in humans.
- Down syndrome occurs in every 600-800 live births, and is not related to race, nationality, religion, or socioeconomic status.
- While the age of the mother can be a factor, 80% of people with Down syndrome are born to parents under the age of 35, with the average age being 26.
- Down syndrome occurs in males and females evenly.
- Nothing that a parent did or did not do during the pregnancy causes a baby to have Down syndrome.

THE FUTURE FOR CHILDREN WITH DOWN SYNDROME

Individuals with Down syndrome have more opportunities than ever before. As young people with Down syndrome show what they can accomplish with the support of their families, friends, and communities, and as they integrate mainstream programs, more and more doors open for others.

We have seen a TV series starring a talented actor with Down syndrome. Two young men have authored a book, Count Us In: Growing Up with Down Syndrome, and have impressed audiences around the country at book signings and on talk shows. Honor Thy Son, a fast paced mystery by Lou Shaw, features two characters with Down syndrome who are faithfully portrayed as multidimensional young adults. A young man with Down syndrome was the winner of the 1996 Best Actor honor at Cannes. John C. McGinley, an actor on the popular comedy show Scrubs, has a son with Down syndrome and has become a spokesman for the Buddy Walk, a nationwide event that raises awareness and funds for Down syndrome.

Along with these shining examples, thousands of people with Down syndrome across the world are quietly going on with their lives without fame or fanfare. They are transforming their communities by just being there. They have dreams and the determination to reach their goals. They learn in regular classrooms in their neighborhood schools with the children who will one day be their coworkers, neighbors and adult friends. Young adults hold diverse and meaningful jobs, maintain their own households, and make significant contributions to their communities every day.

References

"Down Syndrome Facts." National Association for Down Syndrome. http://www.nads.org/docs/DS_Facts.pdf (accessed June 4, 2007).

"Information Topics." National Down Syndrome Society. http://www.ndss.org/index.php?option=com_content&task=view&id=1812&Itemid=95 (accessed June 4, 2007)

"Down Syndrome." National Down Syndrome Congress. http://www.ndsccenter.org/resources/dsBrochure.pdf (accessed June 4, 2007)

c. Myths & Truths About Down Syndrome

For individuals with Down syndrome, success in the community and workplace as adults requires the opportunity to continue to grow and learn in the classroom along with those who will later be their coworkers and neighbors. Thus, it is important to dispel the myths associated with Down syndrome and recognize that their social, emotional, and educational needs are mostly the same as those of other children.

MYTH: PEOPLE WITH DOWN SYNDROME HAVE SEVERE INTELLECTUAL DISABILITIES.

Standard IQ tests will score students with Down syndrome in the mild to moderate range of intellectual disabilities. However, these tests do not measure many important areas of intelligence and you will often be surprised by their memory, insight, creativity, and cleverness. The high rates of learning disabilities in students with Down syndrome often mask a range of abilities and talents. Educators and researchers are still discovering the full educational potential of people with Down syndrome. See www.craigblackburn.org for a shining example of a young adult with Down syndrome who graduated high school with a regular diploma and now travels around the country as a self advocate! Jason Kingsley, one of the authors of Count Us In, also graduated with a regular diploma and passed all his New York State Regents Competency exams.

MYTH: ADULTS WITH DOWN SYNDROME ARE UNEMPLOYABLE.

Businesses are seeking young adults with Down syndrome for a variety of positions. They are being employed in small and medium sized offices, by banks, corporations, nursing homes, hotels, and restaurants. They work in the music and entertainment industry, in clerical positions, and in the computer industry. People with Down syndrome bring to their jobs enthusiasm, reliability, and dedication.

MYTH: PEOPLE WITH DOWN SYNDROME ARE ALWAYS HAPPY.

People with Down syndrome have feelings just like everyone else in the population. They respond to positive expressions of friendship and are hurt and upset by inconsiderate behavior.

MYTH: ADULTS WITH DOWN SYNDROME ARE UNABLE TO FORM CLOSE RELATIONSHIPS LEADING TO MARRIAGE.

People with Down syndrome date, socialize, and form ongoing relationships. Some are beginning to marry.

MYTH: INDIVIDUALS WITH DOWN SYNDROME ARE STUBBORN.

A student with Down syndrome may not be able to tell you how she feels. This can lead to the false perception that she is "stubborn." Behavior is communication. Consider all of the circumstances. Is your student experiencing sensory or communication difficulties?

MYTH: THERE ARE NO EFFECTIVE TREATMENTS FOR DOWN SYNDROME.

Research on Down syndrome is making great strides in identifying the genes on chromosome 21 that causes the characteristics of Down syndrome. Scientists now feel strongly that it will be possible to improve, correct, or prevent many of the problems associated with Down syndrome in the future. Particularly encouraging is the recent establishment of the Stanford Center for Research and Treatment of Down syndrome, whose mission is to conduct research and develop treatments related to the cognitive disabilities related to Down syndrome.

MYTH: CHILDREN WITH DOWN SYNDROME WILL NEVER GROW UP TO BE INDEPENDENT.

Parents and society are coming to understand the aspirations of persons with Down syndrome to participate in all aspects of community life: education, recreation, employment, social, and family life.

MYTH: HAVING A SIBLING WITH DOWN SYNDROME WILL BE A HARDSHIP FOR YOUR "TYPICAL" CHILDREN.

Most families report that their "typical" kids are more compassionate, patient, and tolerant of all people because of the experience of having a sibling with Down syndrome. The sibling relationship is generally a typical one — full of love, occasional arguments, and just being together.

References

"Down Syndrome Myths and Truths." National Down Syndrome Society. http://www.ndss.org/index.php?option=com_content&task=category&sectionid=23&id=58&Itemid=234 (accessed October 10, 2007).

d. People First Language

It is estimated that one in five Americans has a disability. Often times, society makes assumptions based on a person's diagnosis about how the student should be educated, what his or her potential is, where and how he will live, and what "services" he or she needs. Negative stereotypes and the inappropriate use of medical diagnoses have led people across the country to advocate for "People First Language."

IN YOUR LANGUAGE (BOTH WRITTEN AND ORAL), PUT THE PERSON BEFORE THE DISABILITY.

- Use "My student with Down syndrome" rather than "my Downs kid" or "he's Downs."
- Say "My student receives special ed services" rather than "he's a special ed student."
- Encourage all students to think of students with Down syndrome as people first.

RECOGNIZE THAT WORDS CAN CREATE BARRIERS.

- Avoid terms with obvious negative connotations, such as "retarded."
- "Developmentally Delayed" is preferable to potentially offensive words like "mentally retarded," "disabled," or "handicapped."
- If you aren't sure how to refer to the student's condition, ask the parent.
- Try to describe people without disabilities as "typically-developing" rather than "normal."

USE EMOTIONALLY NEUTRAL EXPRESSIONS.

- A person "has" Down syndrome, rather than "suffers from," "is a victim of," or "afflicted by."
- Say "My student has Down syndrome" rather than "my student suffers from Down syndrome."

AVOID USE OF STEREOTYPES.

- Try not to use the clichés that are so common when describing an individual with Down syndrome.
- Avoid saying "They are so loving/ happy all the time." Individuals with Down syndrome experience a wide range of emotions and are not all alike.
- Recognize that a student is "a student with Down syndrome," and an adult is "an adult with Down syndrome."

USE EXAMPLES OF WHAT CHILDREN NEED RATHER THAN LABELING THEM AS HAVING "PROBLEMS."

- Use "Billy needs . . ." rather than "Billy has problems or special needs."

AVOID USE OF TERMS "MILD" OR "SEVERE."

- A person either has Down syndrome or not. While there are varying degrees of abilities, using "mild" or "severe" can be insulting to parents or other families who overhear.

References

"Public Awareness Language Guidelines." National Down Syndrome Congress. http://www.ndsccenter.org/resources/package4.php (accessed June 4, 2007).

Snow, Kathie. "People First Language." Disability is Natural, http://www.disabilityisnatural.com/peoplefirstlanguage.htm (accessed June 4, 2007).

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INCLUSION

What is Inclusion?

Inclusion is a philosophy of education based on the belief in every person's inherent right to fully participate in society. It implies acceptance of differences, and access to the educational experiences that are fundamental to every student's development.

When effectively implemented, research has demonstrated academic and social benefits for all students: both those who have special needs as well as typical students. Friendships develop, typically-developing students are more appreciative of differences, and students with disabilities are more motivated. True acceptance of diversity will ultimately develop within the school environment and is then carried into the home, workplace, and community.

THE EDUCATIONAL CHALLENGES INCLUSION STUDY

In a 1996 study conducted on behalf of the National Down Syndrome Society, parents of children with Down syndrome described multiple benefits of successful inclusion experiences, including higher self esteem, independence in daily living skills, greater academic achievement, positive social interactions, and improved speech and communication.

They reported that the following factors had the most significant relationship to successful inclusion experiences:

- Teacher preparation;
- Format of the curriculum (lesson plans and materials);
- Classroom management and curricular style of the teacher;
- Collaboration between special and general education;
- Parental confidence in professionals;
- Attitude of professionals (open-mindedness, enthusiasm, and confidence were cited as helpful character traits for successful inclusion); and
- Contact, encouragement from, and friendships with peers.

Schools which are successful in integrating students with Down syndrome have:

- Effective leadership from a head teacher who is committed to meeting the needs of all pupils;
- Confidence amongst staff that they can deal with students's individual needs;
- A sense of optimism that all pupils can succeed;
- Arrangements for supporting individual members of staff;
- A commitment to provide a broad and balanced range of curriculum for all students; and

– Systematic procedures for monitoring and reviewing progress.

References

Wolpert, Gloria. "The Educational Challenges Inclusion Study." National Down Syndrome Society. http://www.ndss.org/index.php?option=com_content&task=view&id=1955&Itemid=208 (accessed June 27, 2007).

a. Conditions for Successful Inclusion

Students with Down syndrome benefit from education in the general education classroom setting when "best practices" are implemented:

– View special education as a collection of supports and services, rather than as a place;
– Remove barriers that are created by dual systems (general and special education) and provide access to the resources and expertise of both;
– Maintain respectful attitudes toward students and their families;
– Encourage meaningful participation of parents as equal members of the IEP team;
– Have high expectations of all students;
– Provide access to the same academic curriculum, with or without adaptations, as students without disabilities;
– Proactively use positive behavior support strategies;
– Provide access to and training for assistive technology;
– Facilitate and support peer relationships and interactions using deliberate strategies;
– Plan and implement transitions;
– Emphasize staff development and training; and
– Foster a strong sense of community among students, staff, and parents.

Parents can and should also contribute to their student's success in inclusive settings:

– Maintain the same expectations for behavior for students with Down syndrome as they would for any other student;
– Teach students with Down syndrome how to behave and interact with others in a socially acceptable way, e.g., taking turns, sharing;
– Teach them how to react and respond appropriately in their environment, e.g. greeting, asking for help;
– Foster independence and cooperation;
– Teach self help and practical skills;
– Develop an effective homeschool communication system;

– Be involved in school activities; and
– Do additional activities at home to reinforce what the student is learning at school.

References

"Position Statement on Inclusive Education for Students with Down Syndrome." National Down Syndrome Congress. http://www.ndsccenter.org/resources/position5.php (accessed June 27, 2007).

"What is Inclusive Education?" Down Syndrome South Africa. http:/ownsyndrome.org.za/main.aspx?artid=25 (accessed June 6, 2007).

b. Practical Tips to Achieve Inclusion*

LONG TERM GOALS

Parents should tell the IEP team that they want to prepare their child to live and work as independently as possible. This means being able to function and behave appropriately in a world of typical peers. The goals on the IEP should reflect the skills necessary to achieve this — both academic and nonacademic. Parents acknowledge their high but reasonable expectations and inform the team that they will support them in any way possible. It is critical that the IEP team sees the student's future through both the parents' and the student's eyes.

DRAFTING IEP GOALS FOR INCLUSIVE SETTINGS

The goals drive placement decisions at IEP meetings. As long as the student can make progress toward the goals in an inclusive environment, the team should not consider a more restrictive placement. It is important that these goals be appropriate for the general education classroom. For example, if the student's IEP includes a goal that specifically requires trips into the community, it cannot be met in an inclusive environment. If the student's goal is to learn to handle money in real life situations, the goal can be written in a way that uses the cafeteria or the school store, rather than the mall or McDonald's. It also helps to have social goals that involve interactions with typical peers, which cannot be worked on in segregated settings. The goal should not be restricted to "small group settings." Even though small groups can be arranged in the general education classroom, the term "small group setting" is often considered to be synonymous with a special education class.

PLANNING MATRIX

A chart should be used to show how the goals can be worked on in the different parts of a typical school day. For example, the schedule may indicate that the student will work on money at lunchtime, communication and reading skills throughout the day, and one-to-one correspondence during math — by handing out dittos [assignment sheets] to each classmate. By demonstrating to IEP and school personnel that it just takes a little creativity and flexibility, the concept of inclusion becomes less threatening.

SUPPLEMENTARY AIDS AND SERVICES AND RELATED SERVICES

All the supports and services the student and teacher will need should be reflected in the IEP. Examples include curriculum modifications, assistive technology, augmentative communication, paraprofessional support, a behavior plan, staff training, staff collaboration time, psychological support and occupational, speech and physical therapy. The student's need for these supports is not grounds for a more restrictive placement unless they cannot be provided at the school. It is not enough for the school to say it does not have these

services; efforts must be made to bring the services to the school, through traveling staff or some other means.

References

This Section was reprinted with permission from the NDSS publication "Practical Tips to Achieve Inclusion." National Down Syndrome Society http://www.ndss.org/index.php?option=com_content&task=view&id=1940&Itemid=236 (accessed October 10, 2007).

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STUDENTS *with* DOWN SYNDROME *and* GENERAL EDUCATION CLASSROOM

a. Health Conditions Associated with Down Syndrome

One factor that teachers must consider is the effect that chronic health problems have on learning. By the time they are school-aged, many young children with Down syndrome have had multiple surgical procedures. Although they seem resilient, chronic health issues can take their toll. General health may be poor, students may have problems with eating or sleeping, or they may suffer from chronic ear or sinus infections.

In general:

- Be aware of physical characteristics and health conditions that may affect classroom success. It is important to note that behaviors you witness in the classroom may have a medical or health basis. Speak with the parents to identify a student's previous health conditions and ongoing medications, as these can affect ability to listen and follow directions. Recognize that unusual behaviors or situational responses may signal an illness which the child is unable to communicate.
- Ask parents to alert you to changes in their child's health or sleeping patterns, as these factors can detract from their ability to solve problems. Schedule the most challenging academic areas in the morning. Tiredness at the end of the school day can significantly increase the time required to process information or directions, and can cause frustration and perceived behavior problems.
- Students may require additional recovery time from illness; consider alternative activities and additional periods of rest in these cases.
- Recognize that non-routine activities (field trips, parties, etc.) can be physically or emotionally draining for students with Down syndrome. Avoid situations which set up a student for failure.

The following are some of the physical characteristics and health conditions which may affect the classroom success of students with Down syndrome:

MUSCLE HYPOTONIA

Hypotonia is a medical term used to describe decreased muscle tone (the amount of resistance to movement in a muscle). Symptoms of hypotonia include problems with mobility and posture, breathing and speech difficulties, lethargy, ligament and joint laxity, and poor reflexes.

To understand the physical demands placed on children with Down syndrome by low muscle tone, imagine cooking dinner while wearing socks on your hands. Students with Down syndrome can get frustrated when their abilities to complete tasks are hindered by low muscle tone.

- Allow extra time for them to complete tasks.
- Provide increased opportunities for practice.
- Muscle development can require repetitive training. Work with physical therapists to identify and improve specific muscle development needs.
- To support fine motor development, use wrist and finger strengthening activities. Multisensory activities and materials work well. Provide opportunities to practice self help skills such as buttons and zippers.

SPEECH INTELLIGIBILITY

Speech intelligibility refers to the ability to be understood when speaking orally. This can be difficult for students with Down syndrome because of low muscle tone, jaw movement difficulties, and motor planning difficulties.

To understand how your student with Down syndrome may feel, imagine trying to communicate your needs while your mouth is full.

- Upon evaluation, many students with Down syndrome exhibit great differences between receptive (understanding) and expressive (spoken language production) language abilities. For this reason, their intelligence is often underestimated.
- Recognize that situational factors such as an impatient listener, anxiety, perceived pressure, embarrassment, or lack of confidence can impact communication and classroom performance.
- Use simple questions (5Ws and H), and allow extra response time. If your student uses American Sign Language (ASL), learn basic signs and teach them to the class.
- Peer group acceptance may hinge on the ability to communicate intelligibly. Goals for the classroom should include teaching the student with Down syndrome to communicate as well as teaching peers how to engage in meaningful interactions.
- Work with your district's therapists to assist students with Down syndrome:
- A speech therapist can design a speech remediation component to the IEP;
- Occupational therapists can work on postural control required for speech;
- Audiologists measure a child's ability to hear; and
- Aides can provide one-to-one instruction for articulation skills.
- Students may exhibit an increase in stuttering when under stress. Attempt to increase their comfort level.

MEMORY

Most students with Down syndrome will have short term or working memory difficulties. This makes it harder for them to access, understand, and process information at the same speed as other students, but does not prevent them from learning the same information. Individual motivation is key.

- Present information in a clear, ordered manner. Explain the associations between information to build a system of knowledge.
- Allow more time to learn.
- Allow more practice to apply knowledge.

COMPACT STRUCTURE OF EAR, NOSE, AND THROAT

Students with Down syndrome typically have compact bone and soft tissue structure of the ear, nose, and throat. This increases their susceptibility to and the severity of upper

respiratory and sinus infections, and may also increase sensitivity to loud sounds or vibrations. A child with Down syndrome may cover his or her ears or avoid activities which create loud noises. Be aware of the activity noise levels in and around your classrooms. If appropriate, headphones can limit auditory distractions.

SLEEP APNEA

Recent studies indicate that as many as 45% of individuals with Down syndrome may suffer from sleep apnea. This is the term used when someone stops breathing for very short periods of time, usually 10 to 20 seconds during sleep. Sleep apnea can cause memory loss and intellectual impairment, and may make a student more tired and lethargic. Alternatively, it may result in hyperactivity (which is often inaccurately interpreted as an attention deficit disorder). If you recognize these issues in a student with Down syndrome, explore sleep patterns (including snoring) with parents. Medical interventions can improve their quality of life and school performance.

HEARING, VISION AND THYROID PROBLEMS

It is estimated that 65 to 80 percent of children with Down syndrome have conductive hearing loss and that 50 percent have vision problems. There is also a higher rate of hypothyroidism, which can cause sluggishness, weight gain, and mental impairment.

- Perform annual hearing and vision screening.
- Note that hearing loss may fluctuate when fluid is present or when a student is experiencing ear pain.

Recognize that a student may not be "ignoring" your instructions, but may not be able to hear you. Inform parents of your observations. When left untreated, these problems can greatly affect a student's ability to succeed academically and socially.

TIPS AND TACTICS TO IMPROVE THE LISTENING ENVIRONMENT:

- Place the student at the front of the class;
- Speak directly to the student and supplement with signs, gestures, or expressions;
- Use visual aids (e.g., write on the board); and
- Rephrase and repeat questions or instructions often.

TIPS AND TACTICS TO SUPPORT VISUAL SKILLS:

- Place the student at the front of the class;
- Use larger font; and
- Use visual aids (e.g., signs on floors or walls).

HEART CONDITIONS

Forty to forty-five percent of children with Down syndrome have congenital heart disease. Many of these children

will have to undergo cardiac surgery and can participate in classroom activities without restrictions. If a student has had or is scheduled to have surgery, ask the parents if it is appropriate to teach his or her classmates about the condition.

References

Bird, Gillian, et al. *Accessing the curriculum: Strategies for differentiation for pupils with Down syndrome.* (The Down Syndrome Educational Trust, UK. 2000).

Bird, Gillian and S. Buckley. "Meeting the Educational Needs of Pupils with Down Syndrome in Mainstream Secondary Schools." *Down Syndrome News and Update* 1, no. 4 (1999): pp. 159174. via The Down Syndrome Educational Trust, http://www.downsyndrome.org/practice/148/?page=1

Leshin, Len, M.D. FAAP. *Obstructive Sleep Apnea and Down Syndrome.* (1997) http://www.dshealth.com/apnea.htm.

Peoples, Susan J. *Understanding How Children with Down Syndrome and Other Developmental Delays Learn.* Fort Wayne: Special Offspring Publishing, 2003.

b. Modifying the Curriculum for Students with Down Syndrome

Individuals with Down syndrome have varying degrees of abilities, skills, behavior, and physical development. Their learning deficits result from different learning styles rather than learning impediments. As a general rule, students with Down syndrome need activities which are more highly structured and sequenced, small amounts of information presented at a time, and a good reward system. Teachers can use some of the tips and tactics below in their classrooms to maximize the classroom experience.

LEARNED HELPLESSNESS

It cannot be over-emphasised how important it is to maintain high expectations for the student and aim for the greatest possible level of independence in learning. If the student is always told what to do, or assisted in everything, they may come to rely on this. It then becomes difficult to get them to initiate learning or take responsibility for their learning. Unless directly told what to do, they do nothing; or they do not attempt tasks, knowing that someone else will do it for them. This 'learned helplessness' is often seen in people with Down syndrome (of all ages) who have been over-assisted, and provides a real barrier to ongoing learning both in school and in later life.

Learners with Down syndrome
A HANDBOOK FOR TEACHING PROFESSIONALS
from Down Syndrome Victoria

AREA	LEARNING STYLES	TIPS AND TACTICS
Classroom Information and Curriculum	- Students with Down Syndrome are visual learners.	- Use teaching methods that involve cues and objects. - Pair pictures with spoken words. - Present information visually (e.g. overhead projector, posters, pocket charts, chalkboard).
	- May suffer some degree of hearing loss and have fewer short term memory channels.	- Use simple directions. - Break down directions into small steps.
	- Are not proficient in auditory processing and auditory memory. - Have difficulty retaining directions or information that is only processed verbally.	- Allow adequate response time.
	- Need time to process new skills they have learned before moving on to others. - Have a slower rate of learning than peers.	- Assign fewer problems to a page. - Give students more freedom to choose their work activities. - Foster independence and self reliance by balancing developmental and chronological needs as higher academic expectations are set in the classroom. - When presenting independent work, try to divide it into small segments (e.g. fold test in half). - Allow extra time to complete tasks. - Reduce length of assignments.
Teacher Arrangement & Instructional Methods	- Work best with one-on-one or small group instruction.	- Avoid large group and whole class instruction as they are least effective.
	- Working with teaching assistants or aides can be effective.	- While aides can be effective, some parents caution that they can isolate a student and discourage interaction with peers. - Provide lesson plans to assistants in advance to give them more confidence with the lesson and allow them time to develop their own ideas for suitable practical materials and resources.
	- Computer assisted instruction can be effective because it is interactive, self paced, and nonthreatening.	- Be aware that some students may lack the fine motor coordination to use a keyboard and mouse effectively. - Assistive and/or adaptive equipment such as specialized key guards or alternative keyboards can be used.
	- Peer tutors are sometimes effective.	- Students may work harder to be independent and accepted by their peers.
	- Communication with parents is necessary for success.	- Use daily notebooks to communicate with parents.

AREA	LEARNING STYLES	TIPS AND TACTICS
Materials Used	- Concrete or "hands on" materials are most effective.	- Workbooks are not generally effective. - Paper and pencil tasks, the computer, and textbooks are sometimes effective in the upper grades. - Manipulatives are useful. - Use "hands on" materials in creative ways (e.g. throw a soft ball at a student if you want him or her to answer a question). - Assist students with exercise before writing (e.g. push palms together, push hard on desktop, squeeze and relax fists). - Have a variety of multilevel reading books in your class. - Homework is effective: (a) to inform parents about what child is doing in school; and (b) to provide extra practice with basic concepts.
Transitions		- Change of location and subject teachers can be refreshing for students with Down syndrome. - Breaks between classes can allow for valuable social interaction with peers, as well as exercise. - When students are ready or upon request, they should be allowed to change classes independently, meet aides at arranged classrooms, and spend lunch and break times with their peers. - If students need assistance, it is preferable to use peer support rather than adult staff support during these times.
Attention	- The building block of all learning is attention. - Researchers have developed a 2-stage theory of attention: Stage 1: ability to attend to the task; and Stage 2: ability to identify relevant stimulus to the problem. - Students with Down syndrome may have a hard time paying attention to tasks, but once Stage 1 is mastered, they are able to learn the task and learn well.	- Goal in early childhood is at least 15-20 minute attention span. Attention can be trained. - Minimize distractions. When choosing stimuli or objects, ensure that they have clear and obvious dimensions that vary on as few dimensions as possible (e.g., color, size, texture). - Use prompts, cues, and lighting to capture their attention. - Try using different colored or textured backgrounds for work. - Minimize or remove distractions (place fewer pictures on the wall or problems on a page). - Pay attention to seating. Avoid seating students with Down syndrome near a window, door, or high traffic area. - Give immediate feedback or praise to ensure that students associate rewards with their efforts.
Memory	- Individuals with Down syndrome have poor memory ability for three reasons: 1. They are at a disadvantage for adequate short term memory due to language delays; 2. They have a limited repertoire of memory strategies; and 3. They tend to be "inactive" learners when it comes to memory.	- Use labeling or verbal associations. - Break information down into small clusters and sequence ideas. - Make tasks interesting and meaningful for the student. - Teach rehearsal strategies. - Provide opportunities to practice in different contexts and use multisensory approaches (hands-on activities tend to work best). - Show patterns and teach memory tricks. - Repetition is key!

AREA	LEARNING STYLES	TIPS AND TACTICS
Concept Attainment	- Students with Down syndrome may function at a mental stage below their chronological age. - Once you figure out what mental stage a student is at, you can determine how to adapt your lessons to meet his needs and play to his strengths. - "Concept attainment" describes the difference between mental state and chronological age. A 1997 study identified 4 developmental stages for acquisition of cognitive skills. (1) Sensorimotor - The environment is experienced through sensory and motor experiences. The student learns to distinguish between himself and the world. (2) Preoperational - Concepts are assimilated through language and thought. The student can remember past experiences and develop future expectations. (3) Concrete operations - Objects are ordered and classified through logic. The student needs to manipulate objects to solve problems or learn cause and effect relationships. (4) Formal Operations - Abstract reasoning develops. The student can link concepts, mentally manipulate symbols, hypothesize, and predict consequences or events. - Mental age has been explained as IQ=Mental Age/ Chronological Age x 100.	- Figure out a student's mental stage rather than focusing on chronological age. - If a student functions in the concrete operation stage, use objects and other items to help with conceptual task, such as math (tokens, rods, etc.). These will help students solve problems and maintain interest. - Learning is sequential. Break down task into steps. - Students build on what they know. Before teaching new concepts, ensure that they have the requisite background knowledge. - Repetition is key!
Mediation Strategies and Paired Associates	- Distinguish between chronological age and mental stage.	- Introduce a mediator to break down concepts that are too abstract for your student to grasp. - Use materials that are familiar and meaningful.
	- "Serial learning" describes the concept of getting from concept A to conclusion C ("If I touch the stove, I'll get burned."). - "Paired associates" is the ability to link concepts, ideas and words. - "Mediation strategies" are prompts or cues (the "B") for the student. Using the example above, A to B would be "the stove is hot" and B to C would be "if I touch something hot, it burns my hand." - Students with Down syndrome typically need more assistance with abstract concepts, but can be taught to break down and combine concepts through use of mediation strategies.	- Break down relationships to basic concepts or categories (size, shape, color). - Sequence activities from simple to complex. - Increase response time. - Verbalize and repeat the "B" — the link between concepts. - Repetition is key!

AREA	LEARNING STYLES	TIPS AND TACTICS
Transfer of Learning (Generalization)	- "Transfer of Learning" refers to the ability to apply old knowledge or skills in a different situation or environment (e.g., can do math at school but not at the grocery store). - Teachers also report that students with Down syndrome seem to forget learned skills from one day to the next, as previous learning is often not transferred to future experiences.	- Teach and practice new concepts and skills in several different environments and utilize different materials and people. Point out similarities and/or differences. - Materials should be meaningful to the student. - Use verbal explanations as well as hands on activities. - Repetition is key!
Motivation	- Students with Down syndrome may need more encouragement, acceptance, and positive feedback than other students. - Be aware that by the time they get to your class, they have likely experienced multiple delays, negative responses from adults or other children, and frequent criticism or correction. - They may have developed coping mechanisms such as passive behavior, avoidance, or learned helplessness (giving up and waiting for someone else to answer for them). They may also depend on external cues ("external locus of control").	- Assign well-explained tasks which are suitable for the student's mental stage. - Materials should be meaningful and familiar. - Allow students to help develop rules or design of lessons. - Use positive language. Rather than say "That's wrong," say, "Try another way." - Encourage peer buddies and social rewards. - Reward independence. - Help students maintain motivation and develop an internally based reward system by gradually fading out your cues and rewards.

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c. Reading

Reading is important for all students. It provides students with means to obtain information and gain enjoyment, and it facilitates social relationships. (Downing, 2005). For many students with Down syndrome, reading is a strength. Research demonstrates that teaching reading to students with Down syndrome enhances and facilitates language development because they are typically visual learners. As their reading ability increases, so does articulation and vocabulary. Since reading is language made visual, it is the ideal means of helping a student with Down syndrome with expressive language, which is normally a deficit area for students with Down syndrome. (Kotlinski, & Kotlinski, 2002).

The ability to read and the praise it elicits from others correlates with higher self-esteem and independent performance. Reading is also beneficial for the development of functional skills required for personal development, community life, career, and recreation. Teachers should strive to incorporate effective reading instruction for both practical and functional skills into the reading curriculum. (DeutschSmith, 2006).

READING READINESS

There are several skills that can prepare students for success in reading:

SKILL	STRATEGIES FOR CLASSROOM OR HOME
Attending Skills This refers to the ability to behave appropriately in a given situation (e.g., sitting at a desk or in a circle, looking at the teacher).	- Minimize distractions; - Teach and practice the required skills; and - Seat students with Down syndrome closer to the teacher.
Visual Discrimination "Discrimination" in this context refers to the ability to differentiate between objects based on a set of criteria (e.g., color, shape, size). Students must also be able to grasp the concepts of same and different.	- Simplify choices; - Use meaningful visual aids (e.g., photos of real objects that interest the student); and - Progressively make problems more difficult as the student is ready.
Memory Ability to recall sounds and words, and imitate them spontaneously or upon request. Students with Down syndrome tend to learn more slowly. They may forget previously learned skills.	- Expose a student to music and beat from an early age; - Encourage singing, clapping, and dancing; - Repeat finger plays, nursery rhymes and songs for retention and recollection of vocabulary; - Seek creative and active ways to build their vocabulary of meaningful words; - Use visual and sensory cues (e.g., pair actions with words, finger cuing and pacing); - Use tactile approaches (e.g., sandpaper words or draw in finger paints or sand); - Repeat instructions or break down into smaller steps; and - Review and practice learned skills.
Auditory Discrimination	- Teach good listening skills; - Use tactile and visual cues; and - Use spelling to reinforce auditory discrimination.

Likewise, a teacher's expectations, skill, methods, and flexibility contribute to a student's overall success with reading. It is important to recognize that opportunities for reading instruction in the general education classroom are unlimited. Reading instruction and activities can be incorporated into other subjects such as math, social studies, or science.

Classroom strategies:

- Use materials and activities that are age-appropriate (i.e., as students age, materials should reflect their growth and development) and which reflect the students' interests;
- Develop a planning matrix which identifies a student's reading opportunities during the school day;
- Incorporate visual and tactile cues;
- Give students opportunities for practice;
- Review "learned" concepts frequently to encourage retention; and
- Maintain high expectations for your students with Down syndrome.

EARLY READING AND LITERACY DEVELOPMENT

Language is the building block of any effective reading program. However, students with Down syndrome display significant delays in speech and language attainment relative to their nonverbal mental ability. (Rondal & Buckley, 2003). Hearing loss, auditory processing, and short term memory difficulties can affect speech and cause language delays. Therefore, it is difficult for students with Down syndrome to learn language from listening to verbal communication.

Reading allows students with Down syndrome to view language visually. Printed text provides students with Down syndrome a permanent transitory signal. As a result, students are allowed more time to process information, and more opportunities to learn. When introduced to reading as early as 2 to 3 years of age, children with Down syndrome show significantly advanced speech, language, literacy, and memory skills in childhood and teenage years. (Rondal & Buckley, 2003). Therefore, it is particularly important to start reading instruction to students with Down syndrome as early as preschool.

Early intervention strategies for the classroom and the home:

- Expose children to books and word games at an early age;
- Encourage parents to read to children regularly as part of the daily family routine;
- Teach children listening and attending skills. Some prerequisite skills include the ability to:
  - sit quietly and listen to a book,
  - point to pictures,
  - request a book or read independently,
  - hold a book right side up and read from left to right,
  - "finger track,"
  - predict what will happen next, and
  - paraphrase what the book is about.

TEACHING SIGHT WORDS (LOGOGRAPHIC READING)

Reading instruction for students with Down syndrome should typically begin with sight word or automatic recognition activities. Research shows that preschool students with Down syndrome are able to learn sight words at the same pace as preschool children without any disabilities. (Appleton, Buckley, & MacDonald, 2002). Students with Down syndrome can learn to sight read before becoming competent verbal communicators. Those with limited verbal ability are able to expand both their receptive and expressive language skills by learning to read. (Sue Buckley, 1996, 1997).

Sight word instruction involves teaching the association between a word and the thing or idea that the word represents (e.g., pairing the "apple" with a picture of an apple). Sight word instruction should be meaningful and useful to the student. Start with words and concepts that the student already understands. Gradually incorporate sight words into sentences and encourage students to repeat words and sentences.

Classroom strategies

- Over time, have student combine previously learned words to form short phrases of 2-3 words;
- Create books with students based on the sight words and sentences they are learning, and give them frequent opportunities to read the books. (Copeland & Calhoon, 2007);
- Play games using the sight words;

– Practice in natural settings is essential (i.e., Traditionally, sight word instruction occurs in a decontextualized way, such as through flashcards. However, students should be given ample opportunities to practice sight word recognition in natural settings. Label items in the classroom and review the words with the whole class on a daily basis.);
– Create sentence strips or Velcro cards and have students progress from copying a sentence structure to creating their own sentences in response to a photo or picture;
– Emphasize and provide practice with connecting words (e.g., "and," "or," "but"); and
– Use repetitive sentence patterns to help students match words to pictures, as well as sequence, predict and expand on their sight words (e.g., "I like..." and "May I have...").

METHODS FOR TEACHING SIGHT WORDS	
Pair Pictures and Words	- Pairing pictures with words is the most popular sight word instructional technique among educators. However, there is evidence that students may subsequently associate the spoken word with the picture rather than with the printed word. (Copeland & Calhoon, 2007). Through "stimulus fading," a picture is paired with a word on a flashcard. Over time the picture is gradually faded from the flashcard leaving only the word. - Once students can pair pictures, move on to matching words. Start with 2-4 words that are familiar to and meaningful for the student (e.g., family names). Make 2 sets of identical cards and have the student match the words. You can use pictures on the back of the cards at first and fade over time.
Match, Select and Name	- Step 1: Matching words together - Step 2: Selecting words upon request (e.g., "Give me 'Dog'.") - Step 3: Naming (e.g., hold up a card and ask, "What does this say?") - Start with 2-4 words that are to and meaningful for the student and gradually add words over time.
Copy, Cover, and Compare	- "Copy, cover, and compare" is another method used in the development of reading and writing skills. - A student is given a paper arranged in three sections. Section 1 contains the sight word. In section 2, the word is printed in dashes. The last section is left blank. After the student has stated the sight word, the student traces the sight word using the dashes in the section 2. As the student traces the sight word, they state the letters in the sight word as well as the sight word. Once the student has completed sections 1 and 2, the letters should be covered with another piece of paper. In section 3, the student must write the word from memory, again stating the sight word and the letters in the sight word. Finally, the cover is removed so teacher and students may compare work.

METHODS FOR TEACHING SIGHT WORDS	
Response Prompts	- "Response prompts" refers to any assistance a teacher gives a student that increases the likelihood that the student will respond correctly. (Copeland & Calhoon, 2007). - "Progressive time delay" is one method of response prompts. A student is given a cue to stimulate a response. The student is then given a prompt to solicit the correct answer. Gradually the prompt is delayed until, with practice, the student no longer needs a prompt to solicit the correct answer.

READING COMPREHENSION

As a student's sight word bank grows, it is important to introduce comprehension strategies. These will reinforce learning and ensure that the student understands the meaning behind the words he or she is reading.

Classroom Strategies:

- Take frequent breaks to determine the student's comprehension level (e.g., ask questions (5Ws); request a summary of the story; predict what will happen next; clarify any text you think the students may not understand.);
- Encourage students to ask questions when they do not understand; and
- For older students, use cue cards so that they can self check their level of comprehension (this will also reinforce their self help skills).

TEACHING PHONICS (ALPHABETIC READING)

Phonics is the relationship between letter and sound. Acquiring and applying basic phonic knowledge can be helpful to students when they encounter unfamiliar words. (Copeland & Calhoon, 2007). Phonics can be difficult for students with Down syndrome because they generally exhibit auditory memory deficits and many have trouble hearing and discriminating between sounds. Many students with Down syndrome exhibit increased phonological awareness when they reach the word reading skills of a typically-developing 7 to 8 year old, or once the student has a sight vocabulary of approximately 50 words.

There are two basic approaches to teaching phonics: implicit/analytic phonics and explicit/synthetic phonics. Implicit/analytic phonics focuses on analyzing letter and sound within familiar words. Students look at the whole word then analyze the sounds of each letter in the word. Explicit/synthetic phonics focuses on teaching isolated letter and sound relationships. Once the student has learned the letters and sounds, the student is taught to blend sounds in order to decode words.

Classroom Strategies:

- Provide opportunities for daily practice;
- Use visual cues (e.g., an alphabet line, finger cuing) and tactile cues to teach students to "feel" how sounds are made (e.g., popping lips);
- Encourage practice in a mirror; and
- Use sensory related cues (e.g., "What shape is my mouth making?" "What sound do you hear with your ears?").

Older students should be given daily opportunities to write. Reading and writing are interrelated. Writing allows a student to record his thoughts and read the written text several times. Participation in writing activities allows the students to develop a deeper understanding of literacy and the use of print. (Copeland, 2007). Writing does not necessarily mean that the student has to handwrite the words; he may use words, symbols, and pictures.

EVALUATE STUDENT PROGRESS

Evaluation of a student's progress is essential and should focus on areas of success and need for change. Standardized methods of assessment may not be effective for students with Down syndrome; thus, teachers should seek alternative assessment procedures, such as teacher-student conferences, observation of the student in the classroom, or review of past work. One type of alternative assessment procedure is to keep a portfolio of the student's progress and work during the school year.

Have high expectations for student development. Link a student's evaluation to core curriculum standards which have been accommodated to the student's abilities. Ensure that modifications are not so oversimplified that the original goals of the core curriculum standard(s) are lost.

Finally, make reading fun. The aim is to engage the student in intellectual stimuli that promote development of language, speech, communication, and literacy skills and provide a lifetime of enjoyment.

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d. Math

Math skills are essential for day-to-day independent living. Unfortunately, reform in mathematics education has been slow to address the needs of students with disabilities (Mastropieri & Scruggs, 2002). Traditionally, the mathematics curriculum for students with disabilities was developed using a functional curriculum approach which focuses on "life skills." (DeutschSmith, 2006). Students were taught mathematics through basic skills required for "personal maintenance and development, homemaking and community life, work and career, recreational activities, and travel within the community." For instance, mathematics instruction would include topics such as telling time, making change, money skills, and cooking measurements. However, many educators utilizing this approach tend to simplify the importance of the underlying math concept being taught. For instance, instead of a student learning how to use basic operations like addition, subtraction, multiplication and division, the lesson often turns into instruction on how to bake a cake.

Students with Down syndrome can learn mathematic concepts. In fact, learning mathematic concepts will motivate students with Down syndrome to apply these skills to different situations not demonstrated in the classroom; further, teachers must provide students opportunities to practice these skills in different settings to promote transfer of learning/ generalization.

It is important to recognize that deficits in learning math often reflect a lack of teaching rather than a lack of ability to master mathematic concepts.

MATHEMATIC ASSESSMENT

Standardized assessment tests do not always provide educators with information regarding specific skills students have or have not mastered, nor do they specify which techniques are most effective for the student. Educators must take the extra step to evaluate student performance by analyzing each student on an individual basis:

- Is the instructional format still optimal?
- Is the student mastering the skills at an appropriate rate?
- Is the student retaining previously mastered skills?
- Is the student applying mathematic concepts to other areas in the general curriculum?

Once the necessary information is gathered, an educator can develop an effective individual education plan for math instruction that addresses the student's needs. Plans should build on students' strengths, and develop strategies for them to overcome or compensate for areas of weakness.

DIFFICULTIES AND STRENGTHS IN MATHEMATICS FOR STUDENTS WITH DOWN SYNDROME

Students with Down syndrome can learn mathematics at any age. They are helped most by teaching methods which incorporate research-based methods for addressing their strengths (i.e., social understanding and interactions; visual processing and visual memory; use of gestures to

communicate) and weaknesses (i.e., motor skill delays, speech and language delays, auditory processing and working memory difficulties).

The difficulties and strengths listed on the next pages have been observed in many students with Down syndrome, though not in all. It is important to note that many of the students who displayed difficulties were able to overcome or compensate for them with proper instruction. (Martinez, 2002).

STRENGTHS	CLASSROOM STRATEGIES
Visual Processing Students with Down syndrome can better problem solve and follow procedure if you present the information visually.	- Teach students with Down syndrome to sketch out problems, and then write out the arithmetic for the solution afterwards. - Draw a graph/ chart/ picture. - Act problems out. - Make a step-by-step video. - Use number lines.
Practice Makes Perfect Practice leads to retention, and more practice (overlearning) leads to automatization. At this point, skills require less conscious effort and working memory is freed up for mental processing during tasks.	- Review and repetition are crucial to success. - Build on prior knowledge. Review learned concepts at the beginning of each math lesson. - Practicing concepts improves memory retrieval and amount of effort to complete task. - Practice skills in different contexts and with varied materials. - Use a planning matrix to determine other opportunities to teach mathematical concepts outside of "math class." - Practice should be fun, varied in content, and relevant to real life.
Accommodations	- Assign fewer problems. - Allow more time. - Minimize noise and distractions. - Use the student's real word interests and experiences. - Utilize hands on learning (e.g., manipulatives or common classroom items). - Use number lines to count number sequences. - Use classroom modeling (e.g., show student what the completed project will look like; make deliberate mistakes and then model problem solving strategies). - Encourage peer teaching.
Junior High and High School	- Teach real world, independent living skills (e.g., currency; banking and budgets; time; shopping; and cooking). - Work on memorization of important numbers (e.g., bank card passwords, phone numbers, and locker combinations). - Students with Down syndrome can be taught when and how to use technology (i.e., computers, calculators).
Manipulatives	- Aides can create manipulatives and encourage students to verbalize steps as they are working (this will help with math vocabulary and sequencing); - Examples of manipulatives include games (e.g., Candyland, Chutes and Ladders, Monopoly, dice, cards); felt boards; personalized books; numicon plates and materials; and sorting containers (e.g., boxes, jars, etc.). - Skills which can be taught with manipulatives include: (a) Sorting and classification (e.g., puzzles of increasing complexity; matching objects and pictures; sorting by color, shape, size, or function; sorting by opposites or exclusion; and (b) Sequencing and patterns (e.g., beads or stacking cups; sequencing cards that teach first, next, last; arrange pictures to tell a story or describe past events)

WEAKNESSES	CLASSROOM STRATEGIES
Memory Students with Down syndrome often have difficulty with short term memory/ span and organization, as well as long term memory. They may display difficulty with rote memorization of mathematical concepts (i.e., multiplication tables, math vocabulary, counting backward, sequencing steps of problem solving). In addition, they may display inconsistencies in their learned concepts (i.e., "forgetting" skills they displayed just the day before).	- Start each math lesson with a review of concepts covered in the previous lesson. Use direct teacher questioning to solicit response from students. When appropriate offer corrective feedback based on the student's performance. Practicing concepts improves memory retrieval and amount of effort to complete task. (Nye & Bird, 1996).
Information Processing Because of difficulties with processing and recalling information, timed drills can be difficult for students with Down syndrome.	- Assign fewer items and allow additional time. - Repeat group instructions. - Use visual aids. - Review concepts often. - Practice math vocabulary and steps. - When presenting new material, first clarify the goals and main objective. (Mastropieri & Scruggs, 2002).
Abstract Thinking Concrete learning is generally a strength for students with Down syndrome, but abstract thinking skills (e.g., subtraction, complex calculations, the decimal system, and the value of digits) are more difficult. Many students exhibit sequencing and problem solving difficulties.	- Use purposeful activities which move beyond imitation and copying. Teach students what numbers actually represent. - Provide varied opportunities to distinguish differences in size, shape and quantity. - Students with Down syndrome perform well when they are given a visual illustration of the mathematical procedure. Teach them to sketch out the problem first and then write the arithmetic solution on the sketch afterwards.
Fine Motor Skills Because of hypotonia (decreased muscle tone) and motor planning difficulties, printing numerals can be frustrating and fatiguing, and turn a math lesson (understanding and processing math concepts) into a handwriting lesson.	- Ensure that math instruction time is used to master math concepts. - Allow students with Down syndrome to circle correct answer or use stamps, number cards, or tiles. - Assign fewer items and allow additional time. - Use computers for older students.
Motivation There is no bigger detriment to motivation than repeated failures on tasks that are perceived as too difficult. Remember that even the brightest of typically-developing students will lose their motivation and stop trying if they are overcorrected.	- Focus on the process rather than the end result or grade (i.e., "Wow! You did 3 problems correctly! Let's go work on another one!" rather than "You failed."). - Apply mathematical concepts in various subject areas. - Repeat teaching concepts using different materials and methods. - Use teaching materials that reflect the students' interest.

WEAKNESSES	CLASSROOM STRATEGIES
Vocabulary - Students with Down syndrome must first acquire math vocabulary. - Teach the sequence of number words (matching, sorting activities, memorization, peer tutoring). - The number sequence may not be learned with comprehension at first, but will develop over time as the student performs more number activities. Though initially some students will always start the count string at "one," you can help them use the sequence more effectively by starting counts at other numbers. - Consider counting in sign language as a multisensory approach. - Do not assume that your student with Down syndrome understands the vocabulary for number work. You must develop vocabulary and related concepts when they are needed. Teach them to read the word at the same time the concept is learned. Related concepts can help them to develop greater understanding. - Use visual aids to teach math vocabulary/ concepts (i.e., pictures, objects, gestures). - Use a hierarchy for teaching math vocabulary. For example, using the chart (opposite), first teach the concept (e.g, size, weight) and then the vocabulary (big, small, heavy, more than).	The following is a list of vocabulary used in number work: - Size: width, height, length, big, small, little, fat, thin, long, short, thick, wide, narrow, biggest, smallest, longer, bigger, shorter than, longer than, as big as, order. Comparing size: volume, capacity: a lot, lots, a little, a bit, a small bit, empty, full, much, most, more than, less than, same. - Weight: heavy, not heavy, light, heaviest, lightest, heavier than, lighter than. - Units of measurement: grams, meters or pounds, inches , etc. - Number and algebra: number words, a lot, all, some, both, another, not any, many, same, more, less, every, enough, as many as, first, second, third, etc., last, add, subtract, take away, guess, estimate, two times, multiply, units, tens, hundreds, repeating pattern, odd, even. - Fractions: same, different, as big as, smaller than, larger than, whole, piece of, part, complete, half, halves, equal, unequal, quarters, one quarter, two quarter, one half. - Time: again, now, after, soon, today, before, later, yesterday, early, late, once, tomorrow, twice, quick, slow, first, next, last, days of the week, weeks in a month, months in a year, time telling terminology, o'clock, half past, quarter to, quarter past, etc. - Money: coin names. - Shapes: round, dot, spot, line, circle, rectangle, hexagon, pentagon, square, oval, triangle, diamond, 3D shapes sphere, cube, cylinder, cuboid, pyramid. Properties of shapes: curved, rolls, flat, corner, edge, straight, right angle, turning, flip, symmetry, clockwise, counterclockwise. - Spatial relationships: in, on, under, by, beside, behind, in front of, next to, over, through, inside, outside, out, to, off, above, below, round, up, down, front, back, left, right, forwards, backwards, top, bottom, middle, first, next, last. - Colors, material names, textures: wood, plastic, metal, etc. Rough, smooth, furry, etc. - Using and applying mathematics: results, outcome, check, explain, record, make, test, predict, prediction. - Handling data: sets, maps, diagrams, data collection, methods of recording data, for example, tables, lists, charts, graphs.

PRACTICAL ACTIVITIES TO DEVELOP THESE PRINCIPLES SHOULD BE DEVISED PROGRESSING ALONG THE FOLLOWING SEQUENCE* (REPRINTED WITH PERMISSION)
1. Sorting and matching like objects by color, size, and shape.
2. Write counting objects from 1-10.
3. Counting up to 10 objects in a row.
4. Associating numerals with the written words, spoken words, and appropriate amounts.
5. Selecting up to 5 objects from a set of 10.
6. Matching numerals 1-5,
7. Selecting numeral 1-5 on request.
8. Sequencing numeral 1-5 in correct order.
9. Sequencing amount 1-5 in correct order.
10. Identifying and selecting correct numeral on request.
11. Labeling amounts 1-5 with correct numeral.
12. Copying numerals 1-5 on request.
13. Repeating items (v)(xii) using numerals 1-10.
14. Counting left to right using 1:1 correspondence.
15. Organizing materials so they can be counted accurately.
16. One digit addition e.g. 3+4.
17. Counting objects to 20.
18. Subtracting one digit e.g. 4-2.
**Reprinted from UK Down Syndrome Education Consortium. "Education Support Pack." (Down's Syndrome Association: A Registered Charity, 2000). http://www.downs-syndrome.org.uk/pdfs/DSA_Special_Schools.pdf (accessed June to October 2007).*

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e. Communication

Effective communication has a tremendous impact on the development of students with Down syndrome. It affects their ability to become a contributing member of the classroom and the community. Students feel good when others value whom they are and what they have to say. Ability and fluency in oral communication "will to a large extent determine their opportunities and options in . . . society." (DeutschSmith, 2006). Unfortunately, for many individuals with Down syndrome, communication skills are difficult to acquire. The inability to communicate with others can have a devastating effect on an individual's social and personal skills.

Research indicates that the language comprehension skills in individuals with Down syndrome are almost always better than their language production; in other words, they understand messages conveyed to them, but cannot produce messages of equal complexity. Educators can help students with Down syndrome communicate by providing appropriate motivation, keeping expectations high, and letting students with Down syndrome realize that all communication is valuable. "Once this basic premise is in place, specific intervention and support can produce excellent results." (Downing, 1999).

ASSESSMENT AND PLANNING

Goals must be achievable, measurable, and meaningful. Prior to setting goals, however, you must first develop an understanding of the student's communication skills, including how successfully the student interacts in class, on the playground and in public. A teacher must first assess the communication skill of the student by matching language and speech of student to comprehension ability. Students with Down syndrome do not respond well to standardized tests, which fail to provide educators with practical information that can be used for intervention purposes. (Downing, 1999). General educators should observe student's responses to directions, commands, questions, and social interactions. Educators should also document situations where the student used specific forms of communication. In addition, the teacher can ask parents for examples of speech heard at home and instructions the student can understand or ask the student's aide to track speech and ability to follow instructions during the school day.

Consider the following questions in determining student's communication skills:

- What medium is the student using to communicate (oral speech, symbols, gestures, writing, etc.)?
- Does the student have opportunities to initiate communication with others?
- How do others respond to the student?
- Can the student maintain conversations with others?

TOTAL COMMUNICATION

"Total Communication" refers to the use of all means necessary to convey your meaning. This includes cuing, pacing, sign language, visual aids (written words), or augmentative communication devices to supplement speech. Most students will fade out the use of cues over time as they master sound and word production.

TOTAL COMMUNICATION METHOD	CLASSROOM TIPS
Finger Cuing	- "Finger cuing" is the term used when the teacher or therapist taps his or her own mouth when speaking. This alerts the student to watch the speaker's mouth as he or she models the sounds or words. - It is used primarily to evoke sounds or words. - Students will first use finger cues to talk and then fade out the technique as they gain confidence to use the speech spontaneously.
Finger Pacing	- "Finger pacing" refers to holding up one finger at a time to model the sequence of sounds, syllables or words. This alerts a student to articulate or slow down. - It is used primarily to teach sound and word sequencing. - Through repetition, a student will memorize correct sequences and gain confidence to use in conversation. - Students may use fingerpacing to help him or herself articulate multisyllable words or long sentences.
Gestures	- Some commonly understood gestures are waving, pointing, or the "okay" symbol. A student can pair these gestures with speech to help ensure they are understood.
Sign language	- Sign language builds receptive language and early communication in a visual way, and can be used as a transitional communication system until the child can communicate through speech. - Signs should be accompanied by the verbal word, so that in time when the student masters the oral words, the sign can be faded out.
Reading	- As discussed in the chapter on reading, students with Down syndrome are visual learners. Reading positively impacts language development, and is often a catalyst for increased intelligibility and sentence length. - Reading provides a visual cue to articulate, pace, and use longer sentences. - Reading can improve word retrieval, auditory memory and sequencing (by providing repetition necessary to memorize and recall word order and the grammatical structures that will lengthen their sentences in speech), rate of speech, and ability to follow instructions.

TOTAL COMMUNICATION METHOD	CLASSROOM TIPS
Music	- Music can be invaluable to speech production. Not only is it a powerful motivator for many students with Down syndrome, but it enhances a student's ability to focus on auditory stimuli (which is normally a weakness). - The intonation, beat and rhythm of music provide cues for retrieval, sequencing and memory. - When students repeatedly sing the songs they enjoy, they are practicing and enhancing their receptive and expressive vocabulary! - For younger students, use music during opening and closing circles and during daily routines ("clean up"). - Older students can use chants or cheers, or practice songs for seasonal performances. Classroom Strategies: - Sing slowly and enunciate or emphasize key words; - Pair words with actions or visual cues (pictures, stuffed animals); - Choose songs with meaningful vocabulary; - Encourage pacing by clapping or tapping to the beat; - Talk about the meaning of the song; - Use cues (mouth or omit key vocabulary words); - Use music creatively for transition times or to give instructions.

IN THE CLASSROOM

You can teach students with Down syndrome strategies to make communication less work and more fun. The goal of most parents is for their child with Down syndrome to be able to talk to and befriend classmates, ask for help, be a part of classroom discussions and activities, make presentations, and communicate his needs, feelings, and ideas.

The initial goal for your classroom should be to motivate the student with Down syndrome to talk spontaneously. This can be difficult at first, because they typically take longer to adjust to changes and learn routines. It is common for them to be reserved in group settings. If they do not feel confident about their speech, they may tend to "shut down."

Focus on effort rather than results. Praise and positive reinforcements are powerful tools for students with Down syndrome. You can tell when a student is demonstrating effort if her or she:

- initiates and maintains eye contact;
- willingly faces the speaker;
- watches the speaker's face intently;
- imitates the speaker's words/phrases spontaneously; and
- displays pride when praised by others (i.e., smiles, claps, etc.).

Students with Down syndrome will need more time, practice, consistency and reinforcement to learn communication skills.

Group acceptance is a big motivator for all students. Teachers can facilitate this relationship for students with Down syndrome by fostering tolerance and understanding in the classroom, as well as refusing to allow teasing or mimicking. Ensure that aides and assistants allow students with Down syndrome to converse with their classmates. Teachers can also provide public speaking opportunities, give the student "speaking" jobs, view the student with Down syndrome as capable, and provide ample opportunity for buddy activities.

Positive and specific reinforcement is key, since praise is more powerful when it is a reminder of what they have accomplished (e.g., "I like the way you _____" is more meaningful than "good talking."). Remember to make communication activities fun!

GOAL	CLASSROOM TECHNIQUES AND STRATEGIES
Ability to Initiate and Maintain Eye Contact	- model the behavior you want to see by getting down to student's level and initiating eye contact; - use prompts or cues (e.g., "Look at me," or "Chin up."); - use visual aids (e.g., hold object of conversation up to your own face); and - wait for student to cease other activity and give a visual cue (point to own eyes).
Ability to attend to speaker's face, and respond to visual or auditory cues	- model the behavior you want to see and teach class a "listening position" (e.g., hands on lap, chin up) or "listening technique (e.g., "Stop, look, listen" paired with visual gestures); - initiate eye contact with student and wait for eye contact in return; - use visual aids or strategies at transition times (e.g., flicker lights); - make accommodations (consider seating student near speaker); and - repeat instructions.
Ability to watch and imitate the actions and words of others	- model the behavior you want to see; - use classroom peer "Buddies" and remind students with Down syndrome to follow their Buddy's lead (e.g., "Look at your friend. What do you need to do?); - reinforce spontaneous imitations with praise; and - use action songs and finger plays. - encourage the student to ask you for clarification; - repeat; and - use cues. When using "job cards" or another visual aid, have the student self check his or her work (e.g., "Did you cover all the steps?). When giving directions, prompt student to repeat or paraphrase what you said.
Ability to acknowledge others and initiate social interaction (greeting and farewell routines)	- model the behavior you want to see by establishing the words and routines you will use in your daily greeting routine and use them consistently (e.g., Shake hands or give high five and say, "Hey! How are you today?"); - work with other school personnel to encourage a consistent appropriate greeting (e.g., if you teach your student to greet by giving a high five, you wouldn't want other staff to greet by hugging); and - teach students the names of their classmates (e.g., photo books of classmates).
Ability to take turns in conversation	- model the behavior you want to see and then teach turn taking behaviors in small groups (e.g. "My turn." "Wait for your turn." "Raise your hand.") - use cues (call on student to take turns); and - set and consistently enforce consequences for interrupting.
Vocabulary (increased vocabulary will enhance class participation)	- review theme words and give parents a set to reinforce at home; - use visual strategies (word banks, personal dictionaries, word webs); and - assign theme related reading.

GOAL	CLASSROOM TECHNIQUES AND STRATEGIES
Ability to recall learned vocabulary when cued	- Use prompts (i.e., "Tell/show me"; by sound / first part of word; or mouth the word with no sound); - Use visual cues or signs; - Use word associations (e.g., "It's not night, it's ____."); or - Rhyme (e.g., "Sounds like cat.").
Ability to speak clearly/intelligibility	- Remind student to speak slowly or augment speech with signs or gestures; - Ask student to repeat self; - Model slow, clear speech; and - Use pacing methods (e.g., finger or clapping).
Ability to lengthen sentences (grammar and length of utterance)	- Use pacing methods (e.g., say and clap "I want to eat."); - Use cues ("Tell me more/ in a sentence."); - Use prompts ("And then I _____."); - Practice and repeat; and - Provide visual aids (e.g., sentence patterns).
Ability to regulate loudness of voice and speak appropriately in different situations	- Model the behavior you want to see; - Teach concepts of quiet and loud ("inside" vs. "outside" voice) in a variety of different contexts (e.g., PE, recess, library); and - Use cues or prompts (e.g., hold finger to mouth, say "Shh," "I can't hear you." "Inside voice please.")
Ability to speak smoothly or fluently	- Model the behavior you want to see by allowing the student to finish speaking and maintaining attention and eye contact while student is speaking; and - Encourage turn taking and listening skills.
Ability to express emotions or feelings	- Model the behavior you want to see by using "feeling" words (e.g., "You look sad/ happy. Tell me about it.") - Cue students to use words rather than expressing their feelings through actions; - Problem solve (i.e., "What upset you?" "What can you do next time?"); and - Use visual aids such as a "feelings chart."
Ability to stay on topic during social conversations	- Use cues (e.g., "Answer the question."); - Use redirections (i.e., "We're on ___ now."); - Use visual cues to start conversations; and - Practice and repeat a bank of social questions and appropriate social responses (e.g., "How are you doing today?" "What are you doing this weekend?" "What music do you like?")

SPEECH AND BEHAVIOR

Effective communication skills and socially appropriate behavior are interrelated. A student's IEP goals must address behavioral expectations with regard to listening and attention because these are crucial to speech development. Students with Down syndrome can learn behavior skills when they are clearly taught and consistently enforced. It is important for educators and parents to work together on communication and behavioral concerns, as these will negatively impact a student's learning or ability to interact socially with peers.

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f. Alternative / Augmentative Communication (AAC)

Overview of Alternative / Augmentative Communication

The following is from a PowerPoint presentation by Kati Skulski, M.S., CCC-SLP

Expressive/Receptive Gap: when receptive language skills are higher than expressive language skills; this typically warrants AAC intervention

Alternative/Augmentative Communication (AAC): a subset of AT; AAC involves the study of, and when necessary compensations put in place for individuals with severe speech and language disorders (ASHA, 2005)

AAC & AT Definitions

Assistive Technology (AT): any tool and /or system implemented to improve and/or maintain the capabilities of an individual with a disability

- Writing
- Reading
- Computer Access
- Communication
- Play

Alternative/Augmentative Communication (AAC): a subset of AT; AAC involves the study of, and when necessary compensations put in place for individuals with severe speech and language disorders (ASHA, 2005)

AAC System components (Buzolich, 2005)

- Symbols: visual, auditory, and/or tactile representations of concepts (language)
- Brail, PECS, gestures, etc
- Aid: a physical object or device used to transmit or receive messages (ASHA, 1991)
- communication book, board, computer, Speech Generating Device (SGD))

- Strategy: a way of implementing AAC for more effect communication; varies for every individual
- Play based, partner augmented input, trials, etc
- Technique: the method of message transmission; how the user accesses AAC to communicate
- Direct selection, gestures, scanning, signing, eye gaze etc.

When is AAC Needed?

-Speech/Language Impairments

-Speech and language disorders which may necessitate AAC may include but are not limited to (Buzolich, 2005)

- Dysarthria
- Apraxia (aka Dyspraxia, Developmental Apraxia of Speech)
- Aphonia
- Aphasia
- Aglosia
- Developmental Language Disorder
- Other Developmental Articulation Disorder
- Mixed Expressive/Receptive Language Disorder

-Expressive/Receptive Gap: when receptive language skills are higher than expressive language skills; this typically warrants AAC intervention

-Frustration due to the inability to effectively communicate

-Guarded Verbal Speech Prognosis:

- Limited progress with speech therapy
- Physical limitations for speech production

When is AAC needed:

- Moderate-Severe expressive speech/language disorder(s)
- Expressive/Receptive Gap
- Guarded verbal speech prognosis
- Frustration

AAC Systems

- No Tech/Unaided
- Low Tech
- Light Tech
- High Tech

AAC Systems: No Tech/Unaided: Systems an individual uses with no additional tools or technology

- Motor Behaviors
- Lean, kick, turn head
- Gestures
- Wave, point, head nod
- Sign Language
- Vocalizations
- Groan, cry, laugh
- Verbalizations
- Proxemics
- Approach, walk away, crawl towards
- Eye Gaze
- Facial Expressions
- Smile, frown, furrow

AAC Systems: Low Tech: Communication aides which do not run from a power source

- PECS
- Communication board
- Eye gaze board
- Live Voice Scanning

AAC Systems: Light Tech: Communication system which are typically battery operated and have a static (non-changing) display

- Big Mac
- Step by Step
- Tech Talk
- Go Talks

AAC Systems: High Tech: Systems typically requiring an electronic power source and have a dynamic display (changing)

- DynaVox Vmax
- PRC Vantage
- PRC ECO
- iPad with ProLoQuo2Go and other software
- Chat PC Silk (Saltillo)

It is ideal for an AAC user to have a system/aide from each level for various environments and in the event of 'breakage'

AAC User Profiles

- Emergent Level
- Entry Level
- Intermediate User
- Advanced User

AAC Users: Entry (Buzolich, 2005)

• Technology: Little to no exposure

• Language: No knowledge of symbolic representations; Absent receptive-expressive gap

• Access: Not yet determined

• Development: Less than 12 months

AAC Users: Emergent (Buzolich, 2005)

• Technology: Some exposure

• Communication: Observed communicative intensions and behaviors

• Language: Symbolic representations at the 1-word level; No receptive-expressive gap; Response to input (auditory, tactile, visual)

• Access: Accesses a switch; Identify a symbol from a field of 4; Aud/Scanning from a field of 3

• Development: At least 12 months

AAC Users: Intermediate (Buzolich, 2005)

• Technology: Regular exposure

• Communication: Observed reciprocal communication skills; Utilizes aided and unaided systems across various environments and partners

• Language: Uses symbolic representations (phrase and word based); Receptive-expressive gap of more than 1 year; Emerging novel language generation

• Access: Identified; May present with significant motor impairments

AAC Users: Advanced (Buzolich, 2005)

- User profiles are determined in the AAC Evaluation
- Device selection is determined based on the user profile
- Treatment plan is based on user profile

AAC and Down Syndrome

Effects of Early Intervention for Children with Down Syndrome

by Janice Light & Kathryn Drager:

- Use of AAC did not inhibit speech production
- Intervention is an art and science
- Increased social interactions

http://aacrerc.psu.edu/_userfiles/file/Light%20ASHA%202010%20%20AAC%20and%20children%20with%20Down%20Syndrome.pdf

Using Augmentative Communication with Infants and Young Children with Down Syndrome

by P. Foreman P and G. Crews. *Down Syndrome Research and Practice.* 1998;5(1);16-25.

- Completed by a SLP with AAC training
- Discusses the importance of trialing and providing access to a multitude of AAC systems to facilitate successful communication in infants and young children with DS.
- Limit communicative failures

www.down-syndrome.org/reports/71/

AAC Myths

http://aac.unl.edu/yaack/b2.html

Myths/Fears	Facts	Solutions
AAC should be introduced only after giving up all hope of natural speech	No one can determine how someone's speech will develop Children with serve communication deficits who only receive speech therapy may not obtain a way to communicate . A child who is not able to communication effectively is at great risk for cognitive, social, emotional, and behavioral problems *(Berry, 1987; Silverman, 1980)*	Speech therapy can take place in conjunction with AAC. The therapy team should periodically reevaluate the individuals communicative ability in various environments, activities, and routines. *(Beukelman & Mirenda, 1992)*
The introduction of AAC reduces motivation to work on speech *(Buekelman & Mirenda, 1992; Silverman, 1980; VanTatehhove, 1987)*	The introduction of AAC correlates with the improvement of natural speech—-even in situations in which no speech therapy has been given *(Berry, 1997; Daniels, 1994; Romski & Sevcik, 1993; Konstantareas, 1984; Silverman, 1980)* Studies have shown that typically developing children with access to sign and speech during infancy appear to begin to communicate (initially with signs) and develop spoken language at a much younger age than would otherwise have been expected *(Holmes & Holmes, 1980)*	Little research has been conducted to determine if certain types of AAC are more likely to facilitate the development of speech. However, a simultaneous communication approach, in which speech is utilized by the adult alongside AAC, seems likely to assist in speech comprehension and production *(Beukelman & Mirenda, 1992)*
Whenever present, even though very limited, speech should always be the primary means of communication (*Silverman, 1980)*	Children who are unable to communicate adequately are at risk for behavior problems, learned helplessness, academic difficulties, and social failure Children who use AAC have shown improvements in behavior, attention, independence, self-confidence, class participation, academic progress and social interaction *(Abrahamsen, Romski & Sevcik, 1989; Silverman, 1980; VanTatehhove, 1987*	The therapeutic team should assess what communication means is most effective with various partners in all environments, activities, and routines. If speech is understood with some partners, that should be the primary means of communication while AAC is used with those who have limited understanding of the users speech.
A young child is not ready for AAC.*(Buekelman & Mirenda, 1992; Silverman, 1980; VanTatehhove, 1987)*	There are no known cognitive or other prerequisites that are necessary for a child to use AAC. *(Kangas & Lloyd, 1988)* Even infants are known to engage in purposeful, communicative behavior well before the development of language. These early exchanges are very important in that they form the basis for later formal, symbolic communication *(Reichle, York, & Sigafoos, 1991)*	AAC programs must be individualized, age-appropriate, and developmentally appropriate. For young children this often means play-based interventions that focus on the development of communication-related skills, intentional communication, or basic functional communication, such as requesting and rejecting *(Buekelman & Mirenda, 1992)*

AAC Myths cont.

http://aac.unl.edu/yaack/b2.html

Myths/Fears	Facts	Solutions
A child with severe cognitive deficits cannot learn to use an AAC system *(Kangas & Lloyd, 1988)*	Children with severe cognitive deficits are capable of learning and benefiting from AAC *(Buekelman & Mirenda, 1992; Romski & Sevcik, 1989; Silverman, 1980; Kangas & Lloyd, 1988)* It is impossible to accurately predict a child's abiltiy to learn AAC *Buekelman & Mirenda, 1992; Bodine & Bukelman, 1991)*	AAC interventions must be individualized to take into account the strengths and abilities, and to meet the needs of the child for whom it is being designed. This may mean starting out teaching intentional communication skills and basic communicative functions, and using nonsymbolic and/or self-developed, idiosyncratic means of communicating *(Buekelman & Mirenda, 1992; Reichle, 1997)* All individuals, including children with severe cognitive impairments, have the right to be given opportunities to communicate by learning communication skills that are effective almost immediately, offer some control over the environment, and are age-appropriate (*Buekelman & Mirenda, 1992; Reichle, York, & Sigafoos, 1991; Silverman 1980)*
AAC makes a child look abnormal *(Silverman, 1980)*	Acceptance of an AAC-user by peers increases significantly with full inclusion and active participation in regular school-related activities. Among young children, acceptance appears not to be related to the type of AAC (e.g. voice output communication device versus sign language versus communication board) (*Beck & Denis, 1996; Blockberger, Armstrong, O'Connor, & Freeman, 1993)* In the long run, a child is at greater risk of being judged non-typical when he or she does not have the ability to adequately express him- or herself. Teachers and parents often judge a child with communication impairments as socially and cognitively less capable than their peers. This results in lowered academic expectations and, frequently, decreased academic achievement *(Rice, 1993).* AAC may help in reducing the discrepancy, both real and imagined, between the child's actual and perceived cognitive and social capabilities.	AAC users should be educated in regular classrooms alongside their peers to minimize attitudinal barriers. In addition, teachers, students and other significant persons who are to be involved with the child must be informed of the nature of the communication disability, and any discrepancies between the child's language and cognitive abilities. (It is important, however, to keep such information-dispensing sessions separate from typical school activities in which students participate since the latter are opportunities to de-emphasize differences between the AAC user and his or her peers.) In addition, keeping the child's AAC vocabulary up to date, age-appropriate and relevant to the child's own interests go a long way towards facilitating acceptance by peers and others.

4

SENSORY PROCESSING

a. Sensory Processing

Sensory processing, also called sensory integration, refers to the normal neurological process of organizing and interpreting information from the environment. (Wheble and Hong, 2006).

In our every day lives, we obtain and process information through the senses, which include sight (vision), smell (olfactory), taste (gustatory), touch (tactile), and hearing (auditory), as well as movement (vestibular) and body position (proprioception).

The tactile, vestibular, and proprioceptive senses are the lesser known of the senses; however, these senses are the most important for daily functioning. They can affect academics, attention, balance, bilateral coordination, body awareness, emotional and gravitational security, coordination, fine and gross motor skills, hand preference, self comforting, self esteem, social skills, speech, and tactile discrimination. Challenges in this area can lead to behavioral problems as well.

Educators should be aware of sensory processing disorder when examining and reacting to the classroom behavior of a student with Down syndrome.

THE TACTILE SYSTEM	THE VESTIBULAR SYSTEM	THE PROPRIOCEPTION SYSTEM
Protective Touch: The tactile system helps us discriminate between threatening and nonthreatening touch sensations. Furthermore, the tactile system provides information about objects (e.g. texture, shape, and size).	Coordination: The vestibular system helps us coordinate the movement of our eyes, head, and body (Wheble and Hong, 2006). In addition, the vestibular system controls our body's relation to gravity.	Motor Skills: "The proprioception system consists of components of muscles, joints and tendons that provide us with a subconscious awareness of our body; for example, it enables us to sit properly in a chair and to step off a curb smoothly." (Wheble and Hong, 2006).
Characteristics of a child with a hypo or a hyperreactive tactile system: - Withdraws from being touched. - Dislikes certain textures. - Prefers to wear loose clothing. - Complains about or resists efforts at washing hair, brushing teeth, or washing face. - Often is unable to determine where something is touching their body. (Rosinia, 2006)	Characteristics of a child with a hypo or a hyperreactive vestibular system: - Displays spinning and rocking behavior. - Frequently falls and trips. - Exhibits poor eye control and concentration. - Shows increased emotional sensitivity. (Rosinia, 2006)	Characteristics of a child with a hypo or a hyperactive proproception system: - Is often clumsy. - May display handflapping. - May hold objects tightly or loosely. - Hugs tightly. - Walks very heavily. - Seeks deep pressure by wearing heavy cloths or placing heavy object upon themselves.

b. Characteristics of Sensory Processing Disorder (SPD)

Sensory Processing Disorder (SPD), also referred to as Sensory Integration Disorder or Dysfunction, occurs when an individual's brain inefficiently processes sensory messages from the environment. Individuals with SPD have difficulty responding to sensory experiences. A child may have a sensory input that is either unusually high or lower. Children can fluctuate between the two extremes. Children with SPD usually display symptoms with frequency (e.g. several times per day), intensity (e.g. degree of reaction or avoidance), and duration (e.g. period of symptoms).

CHARACTERISTICS OF CHILDREN WITH SPD*	
OVERLY SENSITIVE	**UNDER SENSITIVE**
Touch: Child avoids contact with people and objects. Reacts negatively and emotionally to touch. Is picky about personal hygiene, particularly concerning clothes. Intentionally avoids certain textures and temperatures.	- Touch: Child is unaware of being touched or bumped. For instance, child may be unaware of messiness on face from food or runny nose.
Movement: Child avoids movement. May avoid activities which are not earthbound such as running, climbing, swinging, etc.	- Movement: Child is in constant movement. The child craves fast and spinning movements. For instance, child may flap arms.
Body Position: Child is insecure with body movement.	- Body Position: The child is frequently clumsy, has a lack of coordination.
Sights: Child lacks control of eye movement. May have difficulty concentrating on objects. Also, child may overreact to light.	- Sights: Child often misses important visual cues like facial expression and gestures, or signposts and written directions.
Sounds: Child prefers silence, often complains about heavy noise.	- Sounds: Child has a poor attention span and auditory comprehension.
Smells: Child has highly acute sense of smell.	- Smells: Child may not be aware of offending or pleasant smells.
Tastes: Child is a picky or messy eater.	- Tastes: Child may not be able to taste foods. For instance, child may prefer spicy or sweet foods.

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c. SPD and the General Education Classroom

Children with SPD usually have difficulty at first in adapting to the general education classroom. However, there are several strategies a teacher can utilize to include a student with SPD in the general education classroom.

Assessment is crucial for managing sensory problems in the classroom. Standardized assessment can be used, but authentic assessment, which requires students to perform real-world tasks, is more effective. Teachers must first identify a real-world task and then identify or set the standards for correct performance of task. Next, break down the task into subtasks. Once teacher has identified criteria, a rubric can be created. A Rubric Directory can be found at http://www.tcet.unt.edu/START/assess/rubrics.htm.

EXAMPLE OF AUTHENTIC ASSESSMENT FOR SENSORY PROCESSING:

SENSORY PROCESSING: PROPER HAND WASHING TECHNIQUE

Teachers Name: _____

Student Name: _____

CATEGORY	EXCELLENT	GOOD	POOR
Used Soap			
Rubbed Hands Together			
Duration of Rubbing Hands			
Water Use			
Paper Towel Use			

USUAL THERAPEUTIC INTERVENTION

- Identify child's sensory processing problems (registration, modulation, emotional, and behavioral responses);
- Develop a sensory processing team (parents, caregivers, educational staff, school therapist, etc.);
- Develop a sensory diet, a schedule of daily activities that promote sensory integration and provide useful feedback;
- Use activities that calm or alert the system (see chart on the following page);
- Utilize environmental modifications, such as light boxes, head phones, trampolines, etc.; and
- Frequently assess students progress.

MANAGING SENSORY PROBLEMS

It is beyond the scope of this manual to describe the whole management process for children with sensory processing disorder. If you suspect that your student may have sensory process difficulties, please consult the student's parents and your school's therapists.

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"GENERAL ACTIVITIES TO CALM & ALERT"		
SENSORY SYSTEM	**TO CALM**	**TO ALERT**
Tactile	- Deep pressure touch - Swaddling - Rhythmic patting/stroking (massage) - Hugs (holding firmly) - Taking a bath	- Light touch (especially face, palms, and stomach) - Touch that involves movement - Taking a shower
Vestibular	- Rhythmic movement - Slow rocking - Maintaining head or body position - Sustained movement	- Non-rhythmic movement - Jiggle, bounce, or jump - Upright positioning
Proprioceptive	- Resistive activities - Rhythmic motor activities	- Resistive activities - Changeable motor activities
Visual	- Muted, soft, or natural colors - Room dividers - Steady consistent input	- Bright colors and lights - Moving objects towards face - Focused lighting on objects - Moving objects at irregular speeds.
Auditory	- White noises - Low-key humming - Monotone speaking or singing - Use of slow rhythms	- Vary intensity, pitch, or beat - Loud music
Gustatory/Oral	- Sucking - Use of mild flavors - Consistent temperature and texture of food and liquids - Sustained blowing activities	- Citrus, salty, or sour flavors - Cold liquids - Frozen treats - Vary temperature and texture of food - Chew before or during focused tasks

**Rosinia, J. M. "Looking at Children with New Eyes: Sensory Processing and The Theory of Sensory Integration." Kid Links Unlimited, Inc. http://www.nads.org/docs/conf_handouts/Rosinia.pdf (last accessed on October 06, 2007).*

5

DUAL DIAGNOSIS

For many, the perceived typical personality profile of Down syndrome (i.e., that of an individual who is affectionate and outgoing) seems to go against the typical personality profile associated with Autism (also known as Autism Spectrum Disorder). While people with Down syndrome have been traditionally described as friendly, affectionate, and extroverted, not all individuals with Down syndrome possess these personality characteristics. Some have significant difficulties in the triad of impairments associated with Autism. All children and adults with Autism have difficulties in three areas known as the triad of impairments. These areas are social interaction, social communication, and social imagination. There is no one behaviour or sign that indicates a child has Autism but all have difficulties in each of these three areas.

What type of difficulties does a child or adult with Autism display?

All children and adults with Autism have difficulties in three areas known as the triad of impairments. These three areas are outlined below with descriptions of common difficulties in each area:

1. Social Communication

Children and adults with Autism have difficulties with both verbal and non-verbal communication. All will have delayed speech and some will not develop purposeful speech. For those who do develop speech they may have difficulty understanding the 'give and take' nature of conversations, perhaps repeating what the other person has said (called echolalia), or talking excessively about one topic. They can find it difficult to use or understand facial expressions, tone of voice and understand jokes.

2. Social Interaction

Children with Autism have great difficulty understanding people's emotions and feelings and expressing their own feelings. They may not seek comfort from other children or adults and prefer to spend time alone rather than seeking the company of peers. Some may appear interested in other children or adults but approach them in inappropriate or odd ways, not understanding concepts such as personal space, appropriate eye contact, or how to interact in social situations. These difficulties with social interaction can impact on the child and adults ability to form friendships and to mix with other people.

3. Social Imagination

Children and adults with Autism may have difficulty understanding people's thoughts, feelings, and actions. They may have difficulty understanding what will happen next, understanding the concept of danger, coping with change, or coping in new and unfamiliar situations. Children with Autism have difficulty engaging in play activities, often not playing with toys in an inappropriate manner or showing no interest in toys. These children may have a very limited range of interests, often watching television programmes or films repetitively and they may also engage in repetitive stereotyped body movements such as hand flapping, finger flicking, spinning, or rocking. Routines and sameness provide them with security as they find it difficult to cope with changes to their routines or changes in their environment. They may create 'rituals' where they insist things are done in the same way each time and develop obsessions or a narrow range of interests and attachments to objects, and be very upset when they are not allowed to carry around favourite objects.

Other common characteristics of children and adults with Autism
As well as the three main areas of difficulty, children and adults with Autism may have other difficulties. Many children and adults with Autism may experience some form of sensory sensitivity. Their senses may be either intensified (Hyper-sensitive) or under sensitive (Hypo-sensitive). For example, a child may find certain sounds very loud or distracting or may stand too close to others or may have a distorted sense of smell. Children and adults with Autism may have difficulties with fine and/or gross motor coordination appearing clumsy when engaging in physical activities. Children and adults with Autism are usually better visual than verbal learners and may respond well to pictures, photographs but have greater difficulty understanding speech. They may be quite able in one or two areas (e.g., memory skills) but have greater difficulty in other areas. Some children with Autism display many symptoms of Attention Deficit Hyperactivity Disorder (ADHD) excessively running and climbing, and finding it difficult to focus on learning tasks.

Why diagnose Autism in children and adults with Down syndrome?

A failure to recognize or diagnose Autism in children and adults with Down syndrome may result in inappropriate educational, vocational, adult, or residential placement and unnecessary emotional hardship and lack of understanding of their needs for their parents and people who support them. Failure to diagnose may prevent parents from accessing supports and interventions available to families with children who have Autism. Appropriate provision for children with both Down syndrome and Autism is likely to differ somewhat from that of individuals with Down syndrome who do not have Autism, and this may have implications for educational and adult services.
Earlier identification of Autism in people with Down syndrome may ensure provision of appropriate advice and education. Having access to services for those with Autism and to professionals experienced in the management of Autism, is likely to be of significant benefit to those affected by both Down syndrome and Autism.

How is Autism diagnosed in children with Down syndrome?

Autism is diagnosed in Down syndrome in the same manner as it is diagnosed in other children and adults who do not have Down syndrome. Autism is diagnosed on the basis of behaviour. Blood tests and brain scans cannot reveal if an individual has Autism. Diagnosis should involve observations of the child or adult, parental/caregiver interview, assessment of an individual's intellectual ability, and medical screening. Autism should be diagnosed by a team of professionals from two or more disciplines (e.g., psychiatrist, psychologist, speech and language therapist, pediatrician, occupational therapist, social worker). In order for a child or adult to receive a diagnosis, a professional or team of professionals must decide that a child meets standard criteria set out in two international classification systems, both of which are based on the triad of impairments. These are:

- DSM-IV (Diagnostic and Statistical Manual –Fourth Edition)
- ICD-10 (International Classification of Diseases –Tenth Edition)

How common is Autism in Down syndrome?

A number of studies that have attempted to ascertain the prevalence of Autism in the Down syndrome population and estimates from the larger studies have varied from a high of 15% to a low of 7%. Until a study involving a large number of individuals is carried out using appropriate instruments and diagnostic methods the exact prevalence rate will be difficult to ascertain. However, a rate of 1 in 10 or 10% seems a reasonable estimate of the number of individuals of Down syndrome who also have Autism.

Interventions for children and adults with Autism and Down syndrome

There are very little published research studies on what approaches are most suitable for children and adults who have both Autism and Down syndrome. However, anecdotal evidence and clinical experience suggest that the children with both Down syndrome and Autism are likely to benefit from educational and therapeutic approaches that are recommended for children with Autism alone. These interventions include:

• Behavioural Approaches: (e.g., Applied Behaviour Analysis (ABA)). The aim is to teach specific behaviours that will improve the quality of life of children with Autism by reinforcing (rewarding) desirable behaviour and reducing undesirable behaviour.

• Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH): The aim is to improve skills by providing a structured environment and structured education. The environment is modified to accommodate the strengths of children with Autism (e.g., visual processing, need for structure) and to limit the impact of deficits related to Autism.

• Picture Exchange Communication System (PECS): PECS is an augmentative or alternative communication system that can be used with children with Autism and other communication deficits. PECS is a reward-based system that teaches the child to initiate communication and become a functional communicator. PECS can be used with children and adults who have no speech or limited speech, and it can be used in conjunction with other communication systems. There are six stages in the PECS training, starting with learning to exchange a single symbol to make a request, and moving on to forming sentences, answering questions and making comments. The training uses prompts and rewards in a manner similar to behavioural approaches.

• Interactive approaches: The aim of interactive approaches is to develop the social and communication skills of children with Autism and to help children with Autism to take the initiative to communicate and interact with others. An approach in this mould is FloortimeTM. FloortimeTM is a specific technique to both follow the child's natural emotional interests (lead) and at the same time challenge the child towards greater and greater mastery of the social, emotional and intellectual capacities. With young children these playful interactions may occur on the "floor", but go on to include conversations and interactions in other places.

• Sensory Integration Therapy: Children and adults with Autism may display a range of sensory processing difficulties. Our sensory systems tell us about our body position, how we move, what we touch, taste, hear, see and smell. The goal of Sensory Integration Therapy (SIT) is to help the development of the nervous system's ability to process sensory input in a more normal way. A widely used concept of SIT is the sensory diet. A sensory diet is a programme of sensory exercises designed to meet the needs of each child's nervous system.

It is important to note that just as each child and adult with Down syndrome is unique, children and adults with have both Down syndrome and Autism also have unique educational and developmental needs, and approaches that work with one child may not work with another child. Many approaches that work for children and adults who have Down syndrome without Autism may also be suitable for children and adults with both conditions. However, if a child or adult has both Down syndrome and Autism it is likely that a knowledge of approaches that work for children and adults with Autism will be particularly helpful.

Red flags for Autism in Individuals with Down syndrome:

- Significant challenging behaviour
- Lack of pretend/imaginative play
- Marked motor stereotypes (e.g., rocks, flaps, odd noises)
- Repetitive and non-communicative language in those with speech (e.g., echolalia).
- Marked impairment in social interactions
- Unusual sensory behaviours (e.g., smelling people, objects)
- Mainstream or special school not adequately meeting children's needs
- Parental concerns that child is different from typical child with Down syndrome
- Poor eye-contact and limited non-verbal gestures
- Little interest in other children or adults and/or aggression towards peers
- Repetitive actions and rituals (e.g., lining up toys)
- Special or restricted interests/obsessions (e.g., watching videos/DVDs repeatedly)
- Attachment to objects (e.g., always has particular object in hand)
- Marked Distress at changes in routine or environment

6

FACILITATING FRIENDSHIPS *and* SOCIAL LEARNING

a. Promoting Social Inclusion (reprinted with permission)*

TIPS FOR PROMOTING SOCIAL INCLUSION:

- To promote social inclusion, make sure the child with Down syndrome has learned how to behave appropriately in social situations. They need to understand about rules and routines and be able to cooperate with their peers.
- In group work they must be able to participate and respond appropriately, without dominating or becoming totally passive. They need to learn how to share and take turns. Outside, they need to understand the rules of playground games and what is involved in being a team member.

IN THE CLASSROOM, SUCCESSFUL INCLUSION IS PROMOTED BY ENSURING THAT THE CHILD:

- Knows the major routines of the day. A visual timetable can help here.
- Has learned the class rules.
- Can participate appropriately in a small group.
- Will respond to requests and instructions from the class teacher.
- Can tidy their work and line up appropriately.
- Cares for others in the group and is aware of their feelings.

Learning appropriate social and self-help skills is a high priority for most young children with Down syndrome. However, many will need extra help and support.

Key skills should be identified and then taught in small steps. Structured approaches, such as backward chaining — where the child is taught initially to do just the last part of the task and then works backwards one step at a time — can be particularly useful.

Picture or photo prompt cards can be helpful, as they show the child what it looks like to complete the task. Similarly, peers can be used as role models to demonstrate successful task completion.

Before starting on a toilet training program, make sure the child is developmentally ready. Can they retain urine for at least an hour? Do they tell people when they are wet or soiled? If not they may not be ready.

When teaching dressing skills, make sure they are taught at the appropriate point in the day e.g. coming in from play or changing for P.E. Give the child extra time so they don't feel rushed. If they are really slow, use a timer and give smiley faces for finishing before the bell rings.

Encourage lunchtime staff to help the child eat independently but not to cut everything up or feed them unnecessarily. If they take a packed lunch, talk to the parents about making sure that it is easy to unwrap. If they need extra time, let them go into lunch a bit early, but don't encourage them to push to the front of an existing queue.

* Reprinted from UK Down Syndrome Education Consortium. "Education Support Pack." (Down's Syndrome Association: A Registered Charity, 2000). http://www.downssyndrome.org.uk/pdfs/DSA_Special_Schools.pdf (accessed June to October 2007). Chapter 5. Facilitating Friendships & Social Learning

b. Classroom Strategies

Social inclusion is a primary goal for most students with Down syndrome who are entering public school. In order to make progress in cognitive areas, it is crucial for them to interact with others in a socially acceptable way and to respond appropriately to their environment. Classmates can be role models for appropriate social behavior and are a powerful motivator for learning.

Students with disabilities exhibit deficits in age-appropriate social skills. (Mastropieri & Scruggs, 2002). Children of elementary school age with developmental delays find it difficult to establish and maintain reciprocal friendships (e.g., many play alone rather than engage in group play). They are also less likely to initiate interactions with other children. However, research findings show that students can develop real friendships with early intervention. Developing social skills at a young age is critical. As students get older, the opportunities to form friendships with typically-developing classmates diminish.

Friendships benefit both "typically-developing" students and students with Down syndrome (Falvey, 2005). Students with Down syndrome: avoid loneliness; gain support in developing social, communicative, and cognitive skills; increase self-esteem with sense of belonging; and develop a support network within their school community. Typically-developing students "seem to have more positive attitudes and a better understanding of the challenges that peers with disabilities face." (DeutschSmith, 2006).

Keep in mind that too much one-on-one support from an aide or teacher can impair the student's ability to benefit from his peer group models, to learn to work cooperatively, and to develop social relationships with his classmates.

ASSESSING SOCIAL SKILLS

Social skills are a collection of behaviors in an individual's repertoire that enable him or her to interact successfully in the environment. (Mastropieri & Scruggs, 2002). It is important to assess the social skills of all students in the classroom.

The following assessment procedures are good methods to assess students' social skills: (a) sociometric measures, (b) teacher ratings, (c) roleplay tests, and (d) naturalistic or direct observation. Sociometric Measures assess the degree of social acceptance among students. Peer nomination (e.g., polling students to determine who they like the most or least) can help educators identify students that are not being socially accepted in the classroom. Teacher ratings provide information about strengths and weaknesses in social skills (e.g., a daily checklist of "how well" or "how frequently" a student displays appropriate social skills) (Mastropieri & Scruggs, 2002). Roleplaying can be used to assess a student's ability to perform specific social skills. Naturalistic or direct observations are performed in the students' natural settings to determine which social skills are appropriate for a specific student.

SOCIAL SKILLS INSTRUCTION

It is important to note that students with Down syndrome must be directly taught socially appropriate behaviors (e.g., no hugging, turn-taking, sharing, classroom rules). Social skills instruction should start at an early age and be geared toward teaching students with Down syndrome how to participate appropriately in major routines of the day (e.g., circle time, lining up).

SOCIAL SKILLS INSTRUCTION	
Daily Review	- Practice learned social skills at the start of each new lesson (e.g., if the previous lesson emphasized eye contact, the next lesson would begin with a review of appropriate eye contact.) (Mastropieri & Scruggs, 2002). - Daily review is beneficial, because it provides educators with opportunities to assess students' retention.
Presentation of Material	- Clearly outline goals and objectives. - Provide students with a step-by-step overview of the lesson. - Use varied examples in different contexts.
Guided Practice	- Model, demonstrate, and question students first and then allow time to practice exercises; - Guide students through the exercise, and provide immediate corrective feedback when appropriate; and - Group activities are perfect activities to utilize when developing guided practice activities for social skills.
Independent Practice	- Create worksheets displaying scenarios with appropriate and inappropriate behavior. Students would be required to circle/match the scenario with the behavior.
Weekly/Monthly Review	- Provide weekly and monthly reviews of previously taught social skills. - As inappropriate and appropriate social behaviors occur throughout the day, emphasize and reinforce previously learned social skills. (Mastropieri & Scruggs, 2002).
Formative Evaluation	- At the end of the lesson, assess students' mastery of the social skills learned. - This can be conducted as a class activity.

STRATEGIES FOR FACILITATING FRIENDSHIPS

The following techniques are strategies which facilitate student friendships and social networks:

FOSTERING INTERDEPENDENCE

Traditionally, the curriculum for students with Down syndrome has focused on direct or independent teaching. However, interdependence is essential for students with disabilities. "Interdependence is when two or more people learn and agree to function as a group relying on each other to get through the day and accomplish what is necessary and desired by the group." (Falvey, 2005). Designing curriculum to include interdependence teaches students responsibility and trust.

Classroom Strategy:

- Arrange seats in clusters and give each member a daily assignment that is necessary for the group to accomplish its daily task.
- For example, one student must sharpen all pencils and another student must collect and turn in all homework assignment of students in his or her cluster.

ALTERNATIVE AND AUGMENTATIVE COMMUNICATION

Students must be able to communicate with their classmates, and must have opportunities to make choices and decisions. Students with Down syndrome often cannot communicate effectively because of a speech or language impairment. These devices allow students to use an alternative source to spoken language.

Classroom Strategies:

- Create communication boards with photos.
- Utilize technology.
- Work with speech therapist and IEP team to determine whether a student needs an augmentative communication device.

SOCIAL STORIES

"Social Stories are short, explicit descriptions of appropriate social behaviors in the form of a story." (Falvey, 2005). Social stories are a great strategy for teaching students social skills, because social stories place the social skill in a real scenario the student can relate to.

Classroom Strategies:

- Incorporate social stories into the class day (e.g., students can read them independently or on audiotape; teachers can read aloud).
- For social stories to be effective, the stories must be individualized and meaningful (i.e., they should incorporate the specific needs of the student for whom the story is written.).
- Use social stories to teach social skills such as how to ask for help or deal with emotions.

PEER COLLABORATIONS

Another effective strategy for facilitating friendships and social networks is peer collaborations. Peer collaborations utilize students as instructors, advocates, and decision makers in the classroom. (Falvey, 2005). For this strategy to work, educators are required to provide students with active planning, support, and facilitation. The results of successful peer collaborations can be both social and academic.

Classroom Strategies:

- Use peer tutors. Peer tutors use more age-appropriate vocabulary and examples, are more directive than adults, and are more familiar with potential frustrations.
- Have peers assist students with Down syndrome in making transitions between activities or classrooms.
- Peer collaborations build friendships and caring classrooms. The more opportunities students with disabilities have to interact and socialize with other students, the greater the possibility for friendships to occur.
- Remember that the goal of peer collaborations is for students to develop their own social networks. This is accomplished by providing students numerous opportunities to work together teaching and making decisions.
- Help students see that individuals with disabilities have similar strengths and interests.
- Facilitate student communication outside the classroom in other school settings.
- Encourage students to join extracurricular activities. This not only fosters social networks, but provides students with ample opportunities to practice social skills in different settings.

COOPERATIVE LEARNING GROUPS

In this strategy, "students work in small mixed-ability groups for reading and content subjects, and they help each other learn and understand information." (DeutschSmith, 2006). Students engaged in cooperative learning demonstrate higher levels of reasoning, generate new ideas and solutions, and transfer learned skills appropriately to different situations. (Falvey, 2005). In addition, cooperative learning enhances the "social and emotional well-being of the student by promoting positive interpersonal relationships." Id.

Classroom strategies:

- Rewards can be given based on a teams' results.
- Be sure to make tasks manageable for students with Down syndrome and be aware of the potential positive and negative outcomes of group dynamics. If a group "fails" because of a student with Down syndrome, his classmates could become resentful.

CIRCLES OF FRIENDS

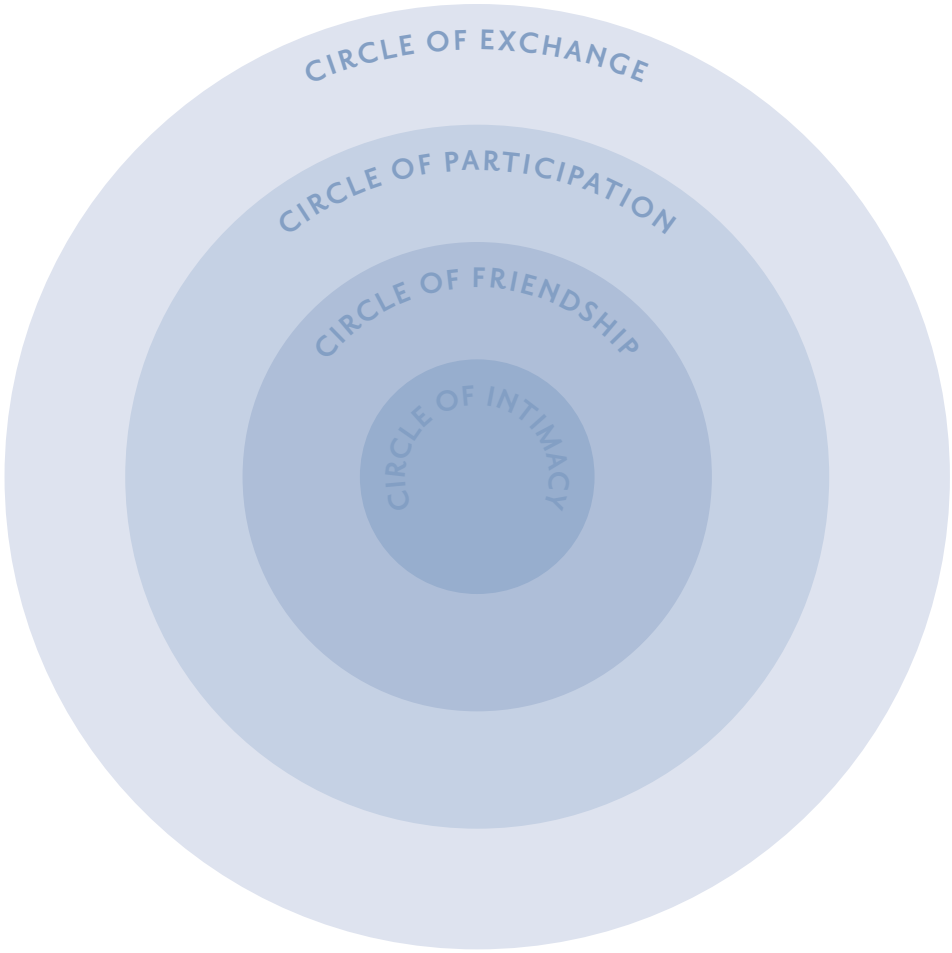
Circles of friends is an exercise designed to bring peers together by creating a network of support and friendship for a particular student. (Falvey, 2005). Students are asked to consider their own circle of friends and family, and then reflect on the circles of other students in their class.

Circles serve as a visual representation of people in a student's life, and can be useful in identifying voids in a student's social network. For students, circles can teach them about the value of relationships and the impact the people can have in their lives.

The picture of the student's life is represented by four concentric circles with the student placed in the center circle. In the surrounding circles, the student is asked to place people according to the nature and closeness of their relationship to the student.

The circles are arranged starting with the inner circle and moving out, ending with the outermost circle.

Each circle has a different meaning: (1) circle of intimacy, (2) circle of friendship, (3) circle of participation, and (3) circle of exchange. (Falvey, 2005).



Circle of Intimacy	The student is asked to place themselves into the circle of intimacy. In the circle the students are instructed to write the names of family and friends who are the closest to the student (e.g., mother, father, brother, sister, grandparent).
Circle of Friendship	In the second circle, students are instructed to write the names of best friends and people that they send a lot of time with and/or care about. (e.g., neighbors, aunt, family friend, cousins).
Circle of Participation	In the third circle, students are instructed to write the names of people they see frequently as a result of participation in school, organizations, clubs, or other activities (e.g., teammates, classmates).
Circle of Exchange	In the fourth circle, students are instructed to write the names of people who are paid to provide service for the student (e.g., teachers, therapists, counselors, social workers)

Classroom strategies:

- Use circles to identify voids in a student's social network.
- Fill voids by creating a "circle of support" around the student.
- Once a circle of support is created, the group should meet on a regular basis to identify ways to spend time with the student and introduce her to new people.
- Remember that bringing people together to form friendships takes time, commitment, and effort.
- Provide support and encourage attendance at lunch time or after school clubs.

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c. Buddy Program

Friendships play an important role in achieving success in school, the workplace, and the community. Since many students easily make friends, it is easy to overlook this important aspect of development for children with Down syndrome.

There are many reasons to start a Best Buddies or similar Buddy program at your school:

Loneliness and isolation

Children with disabilities frequently can experience isolation and loneliness.

Benefits for typically-developing students

Research shows that interaction with children who have disabilities has positive impacts on typically-developing students.

Social skills are essential to holding a job

To be hired for and be successful at a job, individuals must be able to interact effectively with other people as well as perform job tasks. Social and interpersonal skills are crucial to workplace success.

Fostering appreciation of diversity

By pairing "typically-developing" students with others who have a disability, Buddy programs can meet these immediate needs and have long-term effects by changing people's attitudes towards individuals with disabilities.

d. Best Buddies of California

Best Buddies® is a nonprofit 501(c)(3) organization dedicated to establishing a global volunteer movement that creates opportunities for one-to-one friendships, integrated employment and leadership development for people with intellectual and developmental disabilities (IDD).

Founded in 1989 by Anthony Kennedy Shriver, Best Buddies is a vibrant, international organization that has grown from one original chapter to almost 1,500 middle school, high school, and college chapters worldwide.

Best Buddies programs engage participants in each of the 50 United States, and in 50 countries around the world. Best Buddies' seven formal programs – Best Buddies Middle Schools, High Schools, Colleges, Citizens, e-Buddies, Jobs and Ambassadors – positively impact nearly 700,000 individuals with and without disabilities worldwide.

Best Buddies volunteers annually contribute, at no cost to their communities, support services that equate to more than $164 million USD. As a result of their involvement with Best Buddies, people with IDD secure rewarding jobs, live on their own, become inspirational leaders, and make lifelong friendships.

Although Best Buddies has advanced tremendously in its short existence, many areas of the country and many regions of the world still lack programs to help people with IDD become part of mainstream society. With that in mind, Best Buddies is systematically implementing its 2020 Initiative, which will witness the organization's continued significant growth, both domestically and overseas.

Contact Information:

Best Buddies San Francisco Bay Area

901 Mission St., Suite 80-B, San Francisco, CA 94103
(415) 371-1169 - Phone, (415) 371-1129 - Fax
Program Manager, School Friendship -
Katelyn Bollenbacher
Employment Consultant - Margaret Michels

Best Buddies Programs

89% of all revenue goes directly to Best Buddies programs for people with intellectual and developmental disabilities, while only 11% is spent on administration and fundraising.

When people with intellectual disabilities are unable to attain or maintain a job, it is most often due to an absence of social skills rather than an inadequacy to perform the work required. Best Buddies introduces socialization opportunities and job coaching, providing the necessary tools for people with intellectual disabilities to become more independent and, consequently, more included in the community.

Best Buddies Citizens

Best Buddies Citizens matches people with intellectual disabilities in one-to-one friendships with individuals in the corporate and civic communities. Friends and family are the foundation that help human beings become successful. Without love, support, and friends, our lives would be empty - a life people with intellectual disabilities have been forced to live throughout history. Since 1993, volunteers are changing lives by simply sharing their time with a new friend.

Best Buddies Colleges

Best Buddies Colleges pairs people with intellectual disabilities in one-to-one friendships with college students. In the past, individuals with intellectual disabilities have not had the opportunity to have friends outside of their own environment. By becoming a College Buddy, volunteers offer a Peer Buddy the chance to explore a new way of life. College chapters have grown from one single chapter at Georgetown to active chapters on more than 425 campuses worldwide.

Best Buddies High Schools

Since 1993, Best Buddies High Schools has paired students with intellectual disabilities in one-to-one friendships with high school students. By introducing Best Buddies into public and private high schools, participants are crossing the invisible line that too often separates those with disabilities from those without. Today, Best Buddies boasts more than 900 high school chapters worldwide.

Best Buddies Jobs

Best Buddies Jobs continues the integration of people with intellectual disabilities into the community through supported employment. The program helps individuals attain and maintain jobs of their own choosing by providing ongoing support and training, enabling people with intellectual disabilities to earn an income, pay taxes, and work in an environment alongside others in the community. Since its inception, Best Buddies Jobs has placed more than 500 individuals in integrated employment positions.

Best Buddies Middle Schools

In today's middle schools, students with intellectual disabilities often enter the same building and walk the same hallways as their peers, but they are left out of social activities. Started in 2001, Best Buddies Middle Schools is already active on 145 middle school campuses pairing students with intellectual disabilities in one-to-one friendships.

e-Buddies®

e-Buddies® is an e-mail pen pal program for people with an intellectual disability of all ages (10 years old and up) and peer volunteers from across the United States and around the globe. e-Buddies is a fun and safe way to make a new friend in a secure online setting, and is available to anyone who has an e-mail address. e-Buddies can also be a great teaching tool for a special education classroom that can help teach social skills, as well as literacy and computer skills. Joining e-Buddies is quick and easy. Simply visit www.ebuddies.org to read more and to complete the online application.

Best Buddies Ambassadors

Best Buddies Ambassadors educates and empowers people with IDD to be leaders and public speakers in their schools, communities, and workplace. Best Buddies Ambassadors is the next step in the Disability Rights Movement- teaching people with IDD the skills needed to successfully self-advocate. Best Buddies Ambassadors prepares people with IDD to become active agents of change.

GUIDELINES FOR GENERAL EDUCATION BUDDIES

1. Must be selected by a committee which may include general education and special education teacher sponsors, counselors, and possibly parents of special education students.
2. Must have a teacher recommendation.
3. Must be passing all classes.
4. Must be willing to commit to four club sponsored group activities, monthly group meeting, weekly individual activity, and make weekly contact by telephone or written correspondence.
5. Must complete Buddy Training Program.
6. Must have parent consent.

GUIDELINES FOR SPECIAL EDUCATION BUDDIES

1. Must have at least one special education class.
2. Must be willing to actively participate in peer relationship.
3. Must have a teacher recommendation.
4. Must have parent consent.

TRAINING FOR GENERAL EDUCATION STUDENTS

Training is a requirement for all general education Buddies before participating in any activities of the Buddy Program. Training will be supported by the counselor, special education teacher sponsor and the general education teacher sponsor of the Buddy Club program at the school.

Training will include:

1. General information about any disabilities and behavior issues that Buddies may encounter in the Buddy program. Medical issues may also be addressed if needed.
2. Confidentiality issues will be explained
3. Use of person-first language and how to communicate in a positive and effective way with special education Buddy that takes care to not patronize.
4. General education Buddies will be informed that they will be given the opportunity during the year to give feedback on their experiences with their Buddy and receive support. It may be in the form of a journal or completing a short survey to be turned in to sponsors or through a periodic group discussion with sponsors. Buddies will be made to feel comfortable in sharing with peers and teacher sponsors any concerns, feelings, or celebrations that they may have with their Buddy.
5. Program expectations and required level of commitment will be explained to all Buddies. Dates for the monthly or quarterly group activities will be given prior to training. Community service hours and certificate will be given at end of year event.

TRAINING FOR SPECIAL EDUCATION STUDENTS

Training will include:

1. Teachers and counselor will prepare students for the program by briefing each student on the entire program. This includes explaining what the Buddy Club is, what it will look like for the student to be involved, how often the student will meet with their Buddy, what is expected of the student, the schedule of events for the program, etc.

2. Answer questions from students and provide support as needed.
3. Discussion of appropriate behavior and expectations of Buddies.
4. A Buddy Club Certificate will be given to each student at end of year event.

OUTLINE OF BUDDY CLUB PROGRAM DEVELOPMENT

1. Identify program sponsors to lead the Buddy Club program.
2. Decide on the dates of the monthly or quarterly group social events for the school year and decide on time of day the Buddies can meet once a week.
3. Candidates for program may come from teacher referrals or directly from interested students or from parent requests.
4. Advertise Buddy Club program to school body or sponsors will form a Selection Committee to select ideal candidates for program.
5. Selection committee may interview candidates about knowledge of disabilities and to understand their interest in the program. The committee should consist of program sponsors, counselors and at least one parent of a child in special education. Committee will create a short list of questions that will be designed to determine student's interest level and knowledge of disabilities in general. Selection committee will interview student candidates and select program participants.
6. Interested students will be given a Buddy Club commitment and expectation document that outlines all components of the program. They will be asked to sign the document prior to be selected as a candidate for the program.
7. Buddy Training Program is scheduled and implemented.
8. Have first social event where Buddies can meet each other with sponsors present.
9. Have short monthly meetings for each student group lead by a sponsor to discuss their experiences and to provide support as necessary. This can be done prior to a monthly group activity.
10. Plan and coordinate group social events.

FINANCIAL SUPPORT

The program will operate like a school club. Fundraisers are an activity that may be considered to raise funds for activities and may be able to be incorporated into current opportunities for fundraising in the school schedule.

7

INCLUSION *in* EXTRACURRICULAR ACTIVITIES

There are several adaptations which can be made to assist students with Down syndrome to participate in extracurricular activities such as team sports.

a. Strategies

- Explain the rules of the game in clear, understandable language.
- Teach turn-taking.
- Partner students with Down syndrome and typically-developing Buddies to work toward an objective or have Buddies assist students with Down syndrome to transition from prior classes or activities.
- Use visual cues (e.g., gestures, markings on floor, etc.).
- Be aware of noise levels and gravitational insecurities.
- Plan teams for students of all abilities!

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Students with Disabilities and Extracurricular Activities

One of the most important aspects of school is non-academic extracurricular activities. Students who participate in extracurricular activities, such as sports, chess, music, student government, yearbook clubs, and other special interest clubs, develop talent, skill, and teamwork. By participating in extracurricular activities, students have an opportunity to make friends they would not otherwise have made during the regular school day.

The importance of extracurricular activities cannot be overemphasized, particularly for students with disabilities who are mainstreamed because it provides an opportunity for them to learn new skills, improve their talents and self-esteem, and develop relationships with their peers. In addition, when students with disabilities participate in extracurricular activities, other "nondisabled" students will look past one's "disability" and focus more on one's talents and skills.

Therefore, it is important that parents understand that students with disabilities have the right to participate in extracurricular activities at school.

The federal law known as Section 504 of the Rehabilitation Act requires that public schools provide students with disabilities equal opportunities to participate in extracurricular activities as their non-disabled peers. For those who enjoy reading regulations may refer to 34 CFR Section 104.37.

Many schools must also comply with another applicable federal law that prohibits discrimination on the basis of disability: The Americans with Disabilities Act. Like Section 504, the regulations that public entities (which include schools) must adhere to under the Americans with Disabilities Act are stringent.
Children with disabilities may also be protected by another federal law known as The Individuals with Disabilities in Education Improvement Act. This is a very important law that affords children with disabilities the right to a "free and appropriate education." A "free and appropriate education" may include gym classes, including physical and occupational therapy, as well as any extracurricular activities that may be available to the general student population.

Under these federal laws, schools must not discriminate against students on the basis of disability and may be required to implement necessary modifications or provide accommodations in order for students with disabilities to participate in extracurricular activities.

Here are a few concrete examples:

1. A student with diabetes who tries out for the cheerleading team may not be excluded because she may need to give herself insulin.
2. A student with autism or Asperger's Sydrome may not be excluded from participating in Tae Kwon Do classes because he or she is non-verbal.
3. A deaf or hard-of-hearing student may be provided a sign language interpreter to help facilitate communication at a student government club meeting.
4. A student who is blind may be permitted to touch the chess pieces on the board or have someone verbally explain where a piece has been moved to.
5. A school would be required to provide wheelchair accessible mode of transportation for a disabled student who wishes to participate at an off-site, school-sponsored music training program.
6. A student with mobility issues who wants to play golf but cannot walk long distances may ride in a golf cart.
7. A student who is allergic to nuts may join a baseball team and ask the school to implement a policy prohibiting all team players from bringing, eating, or spitting out sunflower seed shells, pumpkin seeds, and peanuts.

Additional examples of modifications and accommodations are provided in this wonderful article titled, "'I Know I Can Do It': Sports are for Disabled People Too."

Over the years, there have been many interesting cases involving students with disabilities who were denied from participating in extracurricular activities. A summary of some of these cases may be found here and there.

The purpose of this article was to inform parents that extracurricular activities play an important role in every child's life. Children with disabilities who participate in extracurricular activities develop skills and talents and friendships. Children with disabilities have the right not to be discriminated against on the basis of disability. Moreover, schools may not deny children with disabilities the opportunity to participate in extracurricular activities.

If your child has a disability and is interested in participating in an extracurricular activity, but has not been able to do so, your child may be a victim of disability discrimination. It is important that you advocate on behalf of your child and speak with the school to find out why your child has not been afforded an opportunity to participate in an extracurricular activity of his or her choosing. If you are unable to make headway with the school, you may wish to consult with a child advocate or a special education attorney for assistance.

According to a 1998 study by Emory University and the University of Georgia and published on the Web site of the American Association of Adapted Sports Programs , children who participate in sports improve in strength, coordination, and flexibility. In addition, parents and teachers report the children are less likely to be depressed and often show improvement in behavior, academics, and social interaction. The study also indicated that many parents noted a decrease in secondary health complications when their children became less sedentary.

To read the full article go to www.cureourchildren.org/sports.htm

b. Special Olympics

NORTHERN CALIFORNIA SPECIAL OLYMPICS

MISSION: Special Olympics Northern California provides athletic opportunities to children and adults with intellectual disabilities, instilling the confidence they need to succeed in life.

CORE VALUES:

Sportsmanship — A commitment to fairness, ethics, respect, and fellowship in competition and in life. "Let me win, but if I cannot win, let me be brave in the attempt."

Volunteerism — A commitment to celebrating and appreciating volunteers, who do good for the benefit of others without seeking personal reward or remuneration.

Acceptance — A commitment to openly embrace and welcome all others without regard to ability, race, creed, nationality, religion, age, gender or sexual orientation.

HISTORY: The concept for Special Olympics was born in the early 1960s, when Eunice Kennedy Shriver started a day camp for people with intellectual disabilities at her home in Rockville, Maryland. Her vision quickly gained recognition and momentum, and in 1968 the first International Special Olympics Games were held at Soldier Field, Chicago, bringing together over 1,000 athletes with intellectual disabilities from 26 states and Canada.

Since then, Mrs. Shriver's vision has grown into one of the largest and most successful sports and volunteer organizations in the world. There are Special Olympics chapters in every state of America and in more than 150 countries

worldwide, serving more than three-million Special Olympics athletes.

Special Olympics Northern California opened its doors in 1995. What started originally as a small grass-roots organization has since become a powerful voice for athletes with intellectual disabilities, encompassing Northern California from the Oregon border to Monterey and Tulare counties.

The Schools Partnership Program is a unique education program in K-12 public schools. This program is about more than sports, it is a valuable education program that unifies disabled and non-disabled students, via Project Unify, bringing acceptance and respect to their campuses.

Currently the program includes:

- 4,200 special education student-athletes
- 200 + Schools
- 3,500 Non-Disabled Peers supporting their fellow students
- 24 weeks of sports training & competition

Special Olympics Northern California provides a grant to the public school district or county to offset the cost of the program. The Schools Partnership Program is completely free to all participants. Equipment, uniforms, training guides and curriculum — we provide it all! Learn more about our current school partnerships.

- Contra Costa County Schools Partnership Program
- Fresno County Schools Partnership Program
- San Francisco County Schools Partnership Program
- San Mateo County Schools Partnership Program

The program takes place during the school day with training and fitness integrated into the classroom. Student athletes train and compete in three seasonal sports; soccer, basketball and track & field. For many, this is their first opportunity to compete, be part of a team or to be cheered on by the family and friends.

But it is not only the special education student-athletes who benefit from the School Partnership Program. The lives of the non-disabled students are also impacted. Through their interaction with the student-athletes, the non-disabled students learn respect and acceptance of people with intellectual disabilities and to dispel negative attitudes and stereotypes. There is no question that the life lessons gained for both the special education student-athletes and the non-disabled students goes far beyond the playing field of sports and are ones that are ingrained in them for the rest of their lives.

If you would like to support to the Schools Partnership Program, please visit the Support our Schools page through the link provided below.

In addition to the Schools Partnership program, Special Olympics Northern California has several school based programs who have a rich history of hosting Special Olympics sports training and competitions. Every year these program provide amazing competition opportunities, serving hundreds of athletes in their local communities. These programs have a positive impact on the entire student population and they are entirely voluntary!

Special Olympics Young Athlete Program

Another component of the Schools Partnership Program is the Special Olympics Young Athletes Program. This program is geared for children between the ages of 2 and 7 as a means to introduce them to the world of sport.

FOR MORE INFORMATION ABOUT THE SCHOOLS PARTNERSHIP PROGRAM VISIT THE WEBSITE AT WWW.SONC.ORG

CONTACT INFORMATION:

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Fax Accounting Dept. (925)944-0390
Fax EB Sports (925)944-8778
EMAIL info@sonc.org
PRESIDENT/CEO: Rick Collett
President & CEO
(925) 944-8801 ext. 206
rick@sonc.org

REQUIREMENTS

To participate in Special Olympics, a person must be at least eight years old. Children at the age of six may begin a training program, but are not able to compete until the age of eight. A person must also be identified by an agency or professional as having one of the following:

- Intellectual Disability, or
- Closely related development disability, which means having functional limitations in both general learning and in adaptive skills such as recreation, work, independent living, self direction, or self care.

8

POSITIVE BEHAVIOR SUPPORTS

In terms of behavior and personality, individuals with Down syndrome vary just as widely as their peers. Most are sociable and well-behaved.

Students with additional needs in the area of behavior rarely fall outside the range of behavior exhibited by his or her peers, and the school's behavior guidelines will be applicable to all students. If a student with Down syndrome routinely engages in really difficult behavior, it is important to examine the underlying reasons, because often some aspect of school life does not meet his or her needs. Research-based knowledge into the ranges and types of behavior difficulties exhibited by students with Down syndrome can be informative, particularly if paired with proven behavior intervention plans. This includes using information from assessments, partnerships with parents, quality of relationships with these students, achievement in the curriculum, and differentiated instruction.

Research has shown that "inappropriate" behavior can serve an important function for an individual with a disability. Behavior, whether or not it is socially acceptable, frequently serves to communicate wants, needs, or preferences. This is especially true for individuals who may not have an effective system of verbal communication.

BRIEF INSIGHT TO BETTER CLASSROOM BEHAVIOR

In the 1996 NDSS Study, parents and educators provided the following tips on managing classroom behavior: Generally, the most effective technique for behavior management is praise.

The following methods are sometimes effective for behavior management in students with Down syndrome:

- material rewards
- time out
- peer pressure
- loss of privileges
- contact with parents

The following methods are generally NOT effective for behavior management in students with Down syndrome:

- ignoring the behavior
- reprimands
- punishment

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a. Causes of Inappropriate Behavior (reprinted with permission)

The most common form of inappropriate behavior in all children, including those with Down syndrome, is behavior designed to gain attention. Children with Down syndrome may be particularly attention seeking because:

- They enjoy being the center of attention and dislike being ignored.
- They are used to having as adult by their side all the time and resent her working with other children.
- They are used to getting special treatment and object if it is withdrawn.
- They have been successful in using attention seeking behavior in the past to get their own way or avoid work.

Sometimes the child with Down syndrome will misbehave because they are angry or frustrated.

- They may try to do the same as others, but find they can't cope without help.
- They may presume that the work they are being given is too difficult or uninteresting.
- They may get annoyed when other people don't take the time to understand what they are trying to say.

Sometimes children with Down syndrome may appear to misbehave when they are, in reality, just confused or uncertain about what they are supposed to do.

- They may have failed to understand instructions given to the whole class.
- They may have forgotten what they have been told.
- They may be finding it hard to learn new rules and routines and still do things in the old way.
- They may be confused by different adults giving conflicting messages.

Children with Down syndrome are often subjected to a high level of structure and supervision. As a result they may feel the need to exert some control over their lives.

- They may refuse to cooperate with their teachers or assistant as a matter of principle.
- They may be difficult if they feel they are given no opportunities to choose their own activities.

– They may feel under pressure and need a break.
– They may resent being regularly withdrawn from class and separated from their friends.

Finally, the child's immaturity may lead to behaviors more appropriate of a younger child.

– They may not have the concentration or memory skills of their peers.
– They may have immature play and social skills.
– Immature behavior may have been ignored or reinforced in the past.
– They may have been over supported and had little opportunity to mix freely with their peers.

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b. Options for Behavior Management

The management of behavior in students follows the progression from "external locus of control" to "internal locus of control." These are fancy phrases to describe the process of moving from adults being responsible for controlling behavior (in young students), to the student becoming more and more responsible for controlling her own behavior. It is a progression that all individuals go through. Thus, when a child or student is not behaving, ask yourself "where is the location of control…is it in the person or in the external source?" The goal of behavior management must be to transition from external control to internal control. This is a learned activity, and therefore, it can be taught.

THE BEST FORM OF BEHAVIOR MANAGEMENT IS PREVENTION.

Adults who work with children begin very early on to know when trouble is a-brewing. That adult has 3 options available to cut'em-off-at-the-pass:

1. modify the child,
2. modify the environment, or
3. modify the interaction.

Each of these 3 options have strengths when it comes to behavior management, but one of the main strengths is that prevention keeps the behavior from ever being a problem.

SUPPOSE YOU MESSED UP ON PREVENTING A BEHAVIOR FROM ESCALATING, WHAT THEN?

The second best method of behavior management is REDIRECTION. Redirection is simply walking over to the child and directing the child to another activity. This can be done with a hug, a smile, and a reassurance that there is something better to do. No words are used. It is not necessary to get into a great explanation about what is not acceptable to you — just physically redirect the child to a better place. Redirection requires warmth and genuineness, so it is probable that you need to be known to the child. Never underestimate the power of a hug.

MOVING ON FROM PREVENTION AND NONVERBAL REDIRECTION, THE NEXT BEHAVIOR MANAGEMENT TECHNIQUE IN THE LIST OF OPTIONS IS TO SAY "NO" OR BETTER "NOT" AND GIVE THE CHILD SOME WAY TO FIND A BETTER ACTIVITY.

This involves the first use of speech and language with the child. However, it does not mean you stand across the room or sit on the couch and shout "NO!" It means you go over to

the child, get on the child's level (bend down, squat down, or sit on the same level as the child) and get the child's attention in a very quiet way. Make sure the child is looking at you and then tell the child, "No we don't do that; let's do this..." You may offer the child an option, not a series of options or undirected choices of doing something else. When children are offered a choice, it needs to be from two options and not more than that. Let the child be in control and choose from the two options. It is wise on the adults' part to stack the deck by having choices that are known to be favorites of the child. Play to win.

THE SOURCE OF PERSONAL POWER IS THE FEELING THAT YOU HAVE A CHOICE.

Often when children are not doing what is requested or expected, it is because they do not feel that empowered to participate in what is happening. Acting out or defying is an illustrated example of a person who feels powerless. You must be smarter than the problem. Take the child to a safe place where there are no distractions and talk to the child in a low voice about making good choices. The key to this, for most children, is to ask if the behavior exhibited "makes a friend." Every person wants friends. Powerless people do not feel that they have friends; therefore, use the moment as a teachable moment to talk about making friends. "What would make a friend? Would it be sharing, would it be waiting your turn, would it be respecting the other person?" Find out what the child thinks makes a friend of another.

IT IS A RULE OF HUMAN BEHAVIOR THAT BEING AWARE OF THE BEHAVIOR CHANGES THE BEHAVIOR.

This is called "reactivity," meaning that when a student is asked to keep a record of good behavior, that behavior increases. Keeping a written record, therefore, is a very powerful management approach. Remember "behavior that is rewarded will be repeated" and reactivity rewards the behavior that you want. The teacher may start (external locus of control) by keeping a chart of good behavior on the student's desk (taped to keep it in place) and periodically go by and note good behavior. This may also be reinforced with verbal praise "I really like it when you...stay in your seat, listen to the lecturer, pay attention to directions..." paired with a mark on the chart. Then the teacher should gradually fade out the marking and get the student to practice reactivity.

USE CHARTS TO STAY ON TASK.

It is possible to use the top of a desk for a chart to be applied that gives the schedule for the day or hour or however long the teacher selects (shorter is better). Pointing to the task or moving a marker along the chart to keep on task is another way to enhance internal control of behavior.

SELF-REWARD IS THE MOST POWERFUL BEHAVIOR MANAGEMENT APPROACH WE HAVE.

Having the student say " good boy" when complying to a request is another way to increase internal locus of control. Counting the "good boy" comments again gives positive reward for behaviors. Find out what the individual likes, wants, desires, and have the person give himself a reward for compliance.

Remember, rewards move along a continuum of tangible, to intangible, to self-reward. The person knows the rule and gives the rule to self is the ultimate behavior management that we are after.

By Ed Hammer, B.A., M.S., M.Ed., LPC, LMFT, Ph.D

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Wolpert, Gloria. "The Educational Challenges Inclusion Study." National Down Syndrome Society. http://www.ndss.org/index.php?option=com_content&task=view&id=1955&Itemid=208 (accessed June 27, 2007).

b. Additional Reading

DSCBA does not necessarily endorse all or part of the programs listed in this resource section. These are listed for your personal information and further research. Many of these books are available in the DSCBA Lending Library. Members and professionals in the Bay Area may borrow these books for up to three weeks free of charge. Contact DSCBA at (925) 362-8660 for more information.

Inclusion and Modification of the Curriculum

Bunch, Gary. *The Basics: Supporting Learners with Intellectual Challenge in Regular Classrooms: A Resource for Teachers.* Toronto: Inclusion Press, 2006.

A resource for teachers, the fundamental premise of this book is that good teaching is good teaching for all students. This book attempts to reduce teacher's anxieties and addresses making adjustments to what you already know in order to effectively instruct all students. http://www.inclusion.com

Bunch, Gary. *Inclusion: How To Essential Classroom Strategies.* Toronto: Canada. Inclusion Press, 1999.

Inclusion: How To is a handbook for every school teacher. In straight forward language, Dr. Bunch outlines proven strategies that work in real classrooms. Without pretension, the book references known research that gives authority to these strategies.

Gould, Patti and J. Sullivan. *The Inclusive Early Childhood Classroom: Easy Ways to Adapt Learning Centers for All Children.* Beltsville: Gryphon House, 1999.

Tien, Barbara and C. Hall. *Effective Teaching Strategies for Successful Inclusion: A Focus on Down Syndrome.* Calgary: PREP, 1999.

This book focuses on methods to teach students with Down syndrome to maximize their inclusion. Electronic version available at http://www.prepprog.org.

Vandercook, Terri et al. *Lessions for Inclusion.* Toronto: Canada. Inclusion Press. 1994.

Assists teachers of elementary and middle school children to develop a classroom community in which all children feel good about themselves and work together as valued members. Specific lessons are provided. http://www.inclusion.com.

Math

Horstmeier, DeAnna. *Teaching Math to People with Down Syndrome and Other Hands-On Learners.* Bethesda: Woodbine House, 2004.

A guide to teaching meaningful math skills by capitalizing on visual learning styles. Covers introductory math skills, but may also help older students who struggle with math concepts.

Reading

Oelwein, Patricia. *Teaching Reading to Children with Down Syndrome: A Guide for Parents and Teachers.* Bethesda: Woodbine House, 1995.

This step-by-step guide to reading allows parents to work with their child at home and helps them coordinate reading lessons with teachers.

Motor Skills

Bruni, Maryanne. *Fine Motor Skills in Children with Down Syndrome: A Guide for Parents and Professionals*, Second Edition. Bethesda: Woodbine House, 2006.

A practical guide to understanding and developing fine motor skills in children with Down syndrome.

Winders, Patricia C. *Gross Motor Skills in Children with Down Syndrome: A Guide for Parents and Professionals*. Bethesda: Woodbine House, 1997.

Provides parents and professionals with essential information about motor development.

Sensory Integration

Kranowitz, Carol Stock. *The Out of Sync Child Has Fun: Activities for Kids with Sensory Integration Dysfunction.* New York: Pedigree Books, 2003.

Kranowitz, Carol Stock. The Out of Sync Child: Recognizing and Coping with Sensory Processing Disorder. Revised Ed. New York: Pedigree Books, 2006.

Provide a description of sensory integration dysfunction and includes dozens of activities with information on appropriate developmental age, equipment needed, how to prepare, what the child can do and what the benefits are. www.outofsyncchild.com.

Communication

Kumin, Libby. *Early Communication Skills for Children with Down Syndrome.* Bethesda: Woodbine House, 2003.

Focuses on speech and language development from birth through the stage of making three-word phrases. Covers problem areas and treatment. 8008437323. www.woodbinehouse.com

Kumin, Libby. *Classroom Language Skills for Children with Down Syndrome.* Bethesda: Woodbine House, 2001.

Covers the language needs of children in school, from kindergarten to adolescence, and how to address those needs in the IEP as well as adapting school work. www.woodbinehouse.com

Kumin, Libby. *What Did You Say?: A Guide to Speech Intelligibility in People with Down Syndrome* (DVD). Blueberry Shoes Productions. *www.blueberryshoes.com*

MacDonald, James D. *Communicating Partners: 30 Years of Building Responsive Relationships with Late-Talking Children.* London: Jessica Kingsley Publishers, 2004.

Practical strategies that families can use to help their children develop positive, engaging, and fun connections with others. www.jkp.com

Miller, Jon F., Mark Leddy and Lewis A. Leavitt. *Improving the Communication of People with Down Syndrome.* Baltimore: Brookes Publishing. 1999.

Provides a framework for assessing and treating speech, language, and communication problems in children and adults with Down syndrome. www.brookespublishing.com.

Schwartz, Sue. *The New Language of Toys: Teaching Communication Skills to Children with Special Needs.* 3rd ed. Bethesda, MD: Woodbine House, 2004.

Ideas to help stimulate language development in children with special needs through play. www.woodbinehouse.com

Sche erhorn, Will. *Discovery: Pathways to Better Speech for Children with Down Syndrome.* (2005) (DVD)

An overview of language development in children with Down syndrome, age two and up. Blueberry Shoes Productions. www.blueberryshoes.com

Facilitating Friendships

Newton, Colin and D. Wilson. *Creating Circles of Friends: A peer support and inclusion workbook.* Nottingham: Inclusive Solutions, 2003.

A practical guide to creating circles of friends written by educational psychologists. Contains background, stories, and reproducible handouts for use in school and other settings. www.inclusivesolutions.com

Perske, Robert. *Circles of Friends: People with Disabilities and Their Friends Enrich the Lives of One Another.* Nashville: Abingdon Press, 1988.

A collection of inspiring stories. www.abingdonpress.com

Person-Centered Planning

O'Brien, John and J. Pearpoint. *Person-Centered Planning with MAPS and PATH: A Workbook for Facilitators.* Nottingham: Inclusive Solutions, 2004.

A workbook to assist facilitators in their learning and implementing of PATH and MAPS processes. http://www.inclusion.com

c. Websites

Local and National Organizations

The following national organizations will provide accurate and current information about Down syndrome.

Down Syndrome Connection of the Bay Area
(925) 362-8660
www.dsconnection.org

National Down Syndrome Congress
(800) 232-6372
www.ndsccenter.org

National Down Syndrome Society
(800) 221-4602
www.ndss.org

National Association for Down Syndrome
(630) 325-9112
www.nads.org

Down Syndrome Education USA
(949) 757 1877
www.dseusa.org/en/us/

Research Down Syndrome
(877) 863-2121
www.researchds.org

Education Research and Resources

Teachers Helping Teachers. http://www.pacificnet.net./~mandel/SpecialEducation.html

Down Syndrome Information Network. http://information.downsed.org/

Universal Design For Learning. http://www.cast.org/

Enhancing access to general education curriculum. http://www.k8accesscenter.org/index.php

"Inclusion Solutions" newsletter for educators. http://www.kcdsg.org/EducationalResources.php

Inclusion

Including Pupils with DS. Secondary Education. www.he.net/~altonweb/cs/downsyndrome/index.htm?page=secondaryeducation.html

PREP Centre for Inclusion relating to DS. http://www.prepprog.org/whoweare.html

Speech

Article on interventions for school-aged children. http://www.denison.edu/collaborations/dsq/kumin.html

Reading and Literacy

The Learning Program (free downloadable early literacy materials). http://www.dsfoc.org/learning_program.htm

Special Offspring (reading, handwriting, spelling, phonics). http://www.specialoffspring.com/home.aspx?page=home

Love and Learning (early childhood). www.loveandlearning.com

Literacy Can Build Language Skills. http://www.he.net/~altonweb/cs/downsyndrome/index.htm?page=ulm.html

Reading before Talking. http://www.he.net/~altonweb/cs/downsyndrome/index.htm?page=ulm.html

Teaching Reading to Teach Talking. http://www.he.net/~altonweb/cs/downsyndrome/index.htm?page=ulm.html

Teaching Reading to Children with Little or No Language. http://www.he.net/~altonweb/cs/downsyndrome/index.htm?page=ulm.html

Math

The Learning Program (free downloadable math materials). http://www.dsfoc.org/learning_program.htm

Teenagers with DS Study Algebra in High School. http://www.he.net/~altonweb/cs/downsyndrome/index.htm?page=ulm.html

Developing Number and Math Skills. http://www.he.net/~altonweb/cs/downsyndrome/index.htm?page=ulm.html

Mathematics & Down Syndrome Abstracts. http://www.he.net/~altonweb/cs/downsyndrome/index.htm?page=ulm.html

Health Issues

Down Syndrome: Health Issues. http://www.dshealth.com/

Toilet Training in Down syndrome. http://www.einsteinsyndrome.com/development/potty_training_description.htm