Georgia Performance Standards: Providing Access to Students with the Most Significant Cognitive Disabilities

RESOURCE GUIDE

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Division of Exceptional Students

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All Georgia teachers who exemplify
the true meaning of "education for all students"
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I. Foreword

Rationale for aligning instruction and performance standards

Under The No Child Left Behind Act (NCLB) of 2001 and The Individuals with Disabilities Education Improvement Act (IDEIA) of 2004, states must ensure that all students have access to the general curriculum that encompasses challenging academic standards. States must also ensure that all students are assessed for their progress toward meeting the academic standards. In order to accomplish this, states must develop standards for the curriculum that includes all students and then must assess those students with statewide tests of achievement or develop an alternate assessment to assess that achievement.

Georgia has developed a standards based curriculum referred to as the Georgia Performance Standards (GPS). However, to meet the needs of all students, a procedure must be developed to provide access to and assessment of grade level content standards for students with the most significant cognitive disabilities in the areas of mathematics, reading/language arts, social studies and science.

Purpose of guide

Georgia Department of Education (GADOE), along with support from the Inclusive Large Scale and Standards Assessment Group (ILSSA), outlined an action plan in February, 2005 for aligning instruction to the performance standards and the Individualized Education Program (IEP) for students with the most significant cognitive disabilities. Through a series of day-long meetings held across the state, this process was reviewed. Utilizing feedback from the meetings, two teachers certified in teaching students with significant cognitive impairments were loaned to the GADOE from their respective school systems to refine the reference guide. The process for alignment is described in this guide and includes multiple examples to which teachers may refer. This guide includes student vignettes and examples of instructional activities.

Teachers and administrators using this guide should understand the reasons and processes for aligning instruction for students with significant cognitive disabilities to the GPS. This document will serve as a basis for professional learning. It is anticipated as we move through the process and gain experience in using the process to develop instruction, additional examples will be included to more fully illustrate its implementation.

Expected outcomes

Teachers and administrators using this guide should gain a better understanding of how to instruct students with significant cognitive disabilities using the GPS. In addition, guidance is provided on relating GPS and instruction of functional skills to the student's IEP.

II. Description of Georgia Performance Standards

The Georgia Performance Standards

The Georgia Performance Standards are the result of months of work by teacher teams, state and national experts, and consultants. The teams reviewed national standards from high-performing states such as Michigan, Texas, & North Carolina, and nations such as Japan, and consulted the guidelines of national groups such as the National Council of Teachers of Mathematics and the American Association for the Advancement of Science.

Performance standards go into much greater depth than the content standards used in the previous curriculum. The performance standard incorporates the content standard, which simply told the teacher what a student was expected to know (i.e., what concepts he or she is expected to master), but expands upon it by providing three additional items: suggested tasks, sample student work, and teacher commentary on that work.

Performance standards provide clear expectations for assessment, instruction, and student work. They define the level of work that demonstrates achievement of the standards, enabling a teacher to know "how good is good enough." The performance standards isolate and identify the skills needed to use the knowledge and skills to problem-solve, reason, communicate, and make connections with other information. Performance standards also tell the teacher how to assess the extent to which the student knows the material or can manipulate and apply the information.

Implementation of the Georgia Performance Standards for all students will follow the same roll-out and implementation timeline. This along with complete information about the GPS can be found at www.georgiastandards.org.

KEY TERMINOLOGY

Standards-Based Education

- The focus is on student learning.
- Expectations are the same for all students.
- Standards are expressed through essential questions and supporting skills and knowledge.
- Assessments are used to guide and modify instruction.
- The effectiveness of instruction is judged on whether or not students meet the standard.

Performance Standard: Performance standards identify what students should know, understand, and be able to do. They provide clear performance expectations for assessment, instruction, and student work. The Georgia Performance Standards (GPS) are a curriculum document. The GPS includes elements, sample student work, suggested tasks, and teacher commentary.

- Elements: Parts of the content standard that identify specific learning goals associated with the standard. They are the specific parts of a content standard that should be learned by all students in a specific grade or course.

- Tasks: Provide a sample performance that demonstrates to teachers what students should know and be able to do by the end of the course.

- Student Work: Student work samples are included in the GPS to specify what it takes to meet the standard and to enable both teachers and students to see what meeting the standard "looks like".

- Teacher Commentary: Enables students to see why they did or did not meet the standard and enables them to take ownership in their learning.

The Process of Backward Design

Big Ideas: Big ideas are often implied and sometimes stated goals or content standards. Big ideas refer to core concepts, principles, theories, and processes that should serve as the focal point of the curricula, instruction, and assessment.
- Themes
- Literary Works
- Genre

Enduring Understandings: Enduring understandings enable us to make vital and informative connections in our learning. An understanding is an inference, not a fact. An understanding is a generalization derived from inquiry.
- A full sentence declaration or generalization specifying what we want students to come to understand about Big Ideas.
- "Moral of the (Unit) story"
- Full sentence generalizations about the resultant learning
- "Big Picture" concepts

Essential Questions: Essential questions yield inquiry and argument, not straightforward facts that end the matter. Essential questions challenge our unexamined assumptions, the inevitable simplification of our earlier learning, and the arguments we may unthinkingly take for granted.
- Should be open-ended or topic related.
- Examine how (process) and why (cause and effect).
- Use language appropriate to students.
- Sequence so they lead naturally from one to another.
- Can be used as organizers for the unit, making the "content" answer the questions.
- Can be shared with other teachers.

Knowledge and Skills: Big ideas manifest themselves as key concepts underlying the skill, the purpose or intent of using the skill, strategies or tactics and the context of use. Knowledge and skills represent what we want students to know and to be able to do.

Knowledge (Declarative)	**Skills (Procedural)**
Facts	Skills
Concepts	Procedures
Generalizations	Processes
Rules	
Laws	
Principles	

Grade Level Content Standards: The Georgia Performance Standards for the grade in which the student would be enrolled, based on age if he/she were not a student with a disability.

III. Getting Started

There are two tools that are used to align instruction for students with significant cognitive disabilities to the Georgia Performance Standards: The Georgia Alignment Planning Tool and the Georgia Stepwise Process. They are described in the following sections.

Three student examples follow the Georgia Alignment Planning Tool and The Georgia Stepwise Process for providing instruction on grade level standards are located in Appendix A. The student examples include Carlos (13 year old middle school student) with a moderate intellectual disability, Tanner (10 year old elementary school student) with autism and a severe intellectual disability, and Claire (16 year old high school student) with a profound intellectual disability.

Georgia Alignment Planning Tool

The purpose of the Georgia Alignment Planning Tool is to walk teachers through the instructional process utilizing both the GPS and the student's Individualized Educational Program (IEP). In this section, teachers will find information on **how to align IEP objectives of students with significant cognitive disabilities to Georgia Performance Standards.**

- Step 1 – Understand the standards
- Step 2 – Develop the IEP
- Step 3 – Design instruction

Teachers must consider several factors to complete each step.

Step 1

- **Understand the standards**
  - Become familiar with grade level standards across strands and content areas.
    - Obtain a copy of the GPS from the school or district (this is also available on-line).
  - Unpack the standard in collaboration with general education teacher to determine the:
    - Big Ideas
    - Enduring Understandings
    - Essential Questions
    - Knowledge and Skills
  - Review the scope of the elements within each standard.

Step 2

- **Develop the IEP**
  - Determine the student's present level of performance.
    - Determine the student's strengths and weaknesses.
  - Identify standards that are appropriate for the student.
    - Identify the student's mode of communication.
    - Think about supports typically used by the student
  -

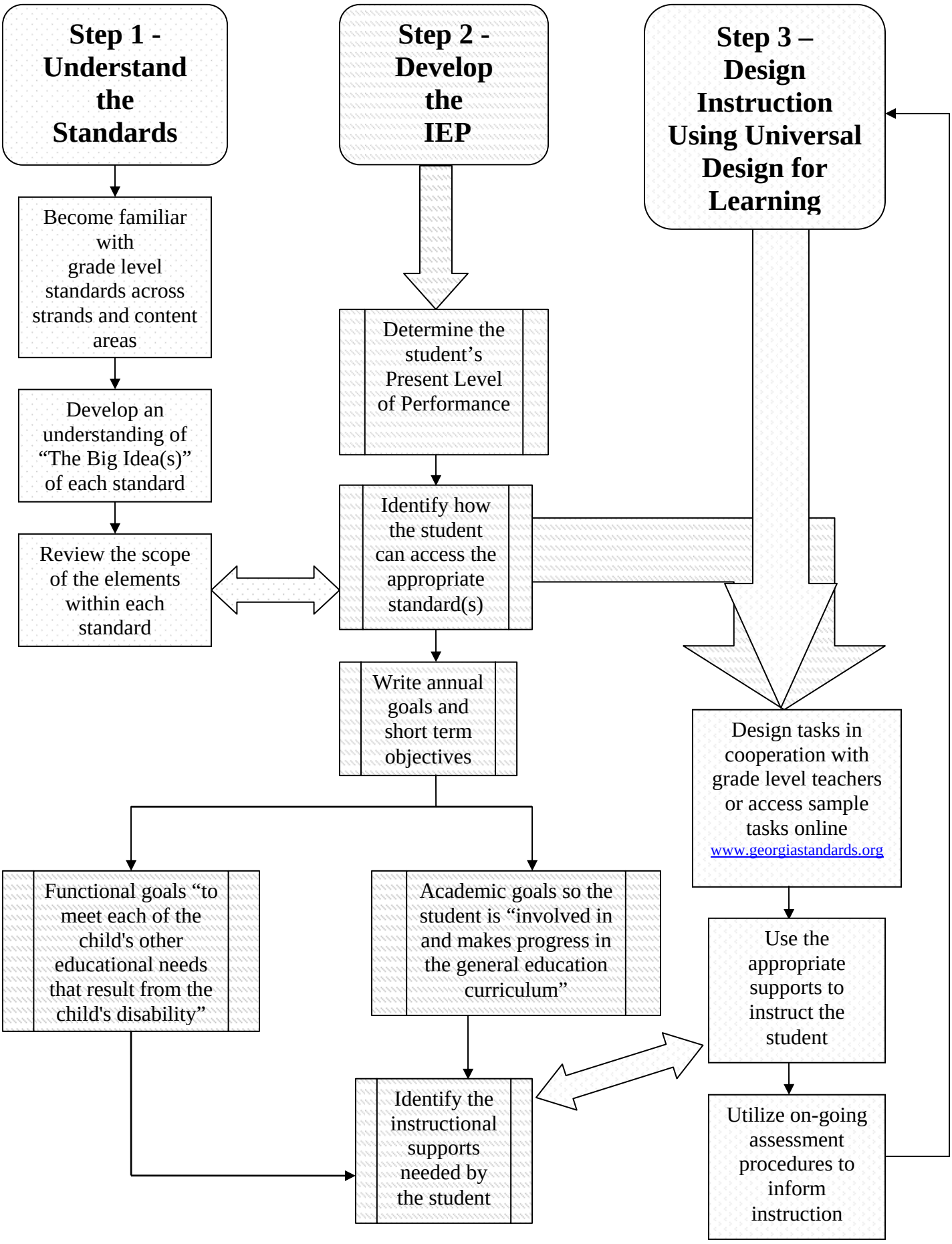
- Write annual goals and short term objectives, including both academic and functional skills.
  - Academic goals should enable the student to be "involved in and make progress in the general education curriculum."
  - Functional goals should "meet the child's other educational needs that result from the child's disability."
- Identify the instructional supports needed by the student.
  - Based on the student's present level of performance and mode of communication, determine what types of support are needed (people support, technological support, therapeutic support, etc.) for access and progress in the general curriculum.

Step Three

- **Design Instruction**
  - Design instruction based on principles of Universal Design for Learning
  - Design tasks in coordination/cooperation with grade level teachers when possible.
    - Access sample tasks on the web www.georgiastandards.org.
    - Design grade appropriate tasks based on grade appropriate content.
  - Use the appropriate supports to instruct the student(s).
    - Consider the use of adaptations, modifications, and assistive technology as well as systematic instructional supports.
  - Utilize on-going assessment procedures to inform instruction.
    - Systematically monitor student progress.
    - Make changes to instruction as needed.

Georgia Alignment Planning Tool

(Aligning IEP Objectives with Georgia Performance Standards)



IV. Providing Instruction

While providing instruction on GPS and the respective grade level elements to students with significant cognitive disabilities is a new experience, the following process provides direction in doing so. Because grade level content may be unfamiliar to many teachers of students with significant cognitive disabilities, collaboration with general educators is an essential part of this process. Additionally, it must be remembered that the grade level content standards are not the only components of the instructional program for students with the most significant cognitive disabilities. Wehmeyer et al (2001) cautioned that when focusing on state general curricula, students continue to need instruction related to their life skills and transition needs. The following process was adapted for Georgia from a process described by Kearns, Burdge, & Kleinert (Innovations, in press) and The Stepwise Process to Access Grade Level Standards and Curriculum by Clayton, Burdge, Denham, and Kearns (National Alternate Assessment Center presentation materials for CCSSO, 2005).

The **Georgia Stepwise Process** is designed to assist the teacher in **planning an instructional unit that addresses the Georgia Performance Standards.** Most units take multiple days to teach, however, each daily lesson takes an hour or less. This leaves additional time during the day and week to work on needed functional skills. Step 4, Targeting Specific Objectives from the IEP and functional skills, discusses how to address the functional or useful skills that students with significant disabilities require.

Georgia Stepwise Process
Step 1 – Identify or link to the appropriate standard.
Step 2 – Define the outcome of instruction for all students.
Step 3 – Identify instructional activities.
Step 4 – Target specific objectives from the IEP and functional skills.

Step 1 – Identify or link to the appropriate standard. *(See examples in Appendix A)*

- Identify the standard and grade level elements to teach.
  - Choose the grade level standards and elements to teach according to the chronological age of the student (*not the developmental age – the process allows for adjustments to meet the developmental and functional needs of the student).*
  - It is essential to first select the standard and then plan instruction based on that learning. (*The intent of the grade level standard could be lost when using lesson plans which are designed to specifically address IEP goals and objectives).*
  - Refer to the resources section of this guide to learn how to select and better understand GPS and elements for the identified grade.

- Determine how the grade level elements support the standard – what is the "Big Idea?"

- Collaborate with a general education teacher to help:
  - Address a variety of standards throughout the school year.
  - Work in a variety of settings.
  - Embed IEP skills in standards driven instructional activities/units.

- Work on functional skills that occur in instructional activities/units.
- Provide learning with age appropriate materials and instruction.
- To the maximum extent appropriate, have students with significant cognitive disabilities work on content standards in the general education class so as to produce the following additional advantages:
    - Allows for meaningful, active participation in general education classes **(Is it relevant to the student's education, life, and future?)**
    - Provides opportunity to work with peers.
    - Offers opportunities to build friendships/relationships.

Experts in the field of moderate to severe disabilities emphasize that academic instructional goals should be selected from the general curriculum and activities. Of course, students with disabilities may have other more "functional" needs as well; IDEIA 2004 reinforces that these other functional needs of students must be addressed. However, functional skills should not be taught in an "alternative curriculum" (Jackson, Ryndak, & Billingsley. 2000), but rather in the context of the general education curriculum whenever possible.

Step 2 - Define the outcome of instruction for all students. *(See examples in Appendix A)*

- Identify the learning outcomes specific to the unit – what is it that the teacher wants all students to learn?
    - Refer to unit objectives for all students in order to maintain the focus on the desired outcomes of instruction.
    - Consult with the general education teacher to provide information about desired outcomes for an instructional unit that can then be adjusted and prioritized to meet the needs of the student.

  This step represents what the attainment of the standard will look like, not just a reiteration of the standard itself.

- Once the concepts, skills, and specific knowledge all students are meant to acquire are identified then the focus of direct instruction and progress monitoring for the student with a significant cognitive disability is determined.
    - Reduce the complexity of what is required for the student with disabilities to be able to demonstrate.
    - Reduce the quantity of skills/concepts to systematically teach the student.

- Record the supports typically used and those identified on the student's IEP (e.g., instructional, behavioral, and assistive technology). Decisions on specific assistive technology tools should be made once the learning environment and tasks are determined (Zabala, 1996).

Reducing complexity or quantity of work should not serve to limit the participation in the instructional activities (which open up opportunities to learn additional skills/concepts/ knowledge), but should serve to focus instruction and monitor progress on the selected skills/concepts.

Step 3 - Identify the instructional tasks. *(See examples in Appendix A)*

- Describe and analyze the instructional tasks and strategies developed to teach the grade level content standards to all students. This will help to ensure that all students have equitable and meaningful access to instruction and curriculum.

- Typical strategies used in classrooms include:
  - Direct instruction
  - Experiential learning
  - Independent learning
  - Indirect instruction
  - Interactive instruction

  (Strong, Silver, & Perini, 2001)

- Include classroom-based assessments as ongoing checks on student understanding of the concepts, skills, and/or knowledge in order to:
  - Inform teaching
  - Provide information on what the student has learned and to what level
  - Determine if additional/different instruction is needed

It is crucial to understand that the active participation of the student with disabilities in all of the instructional tasks should result in the achievement of the outcome(s) and grade level content standard(s) versus simply participating in or completing the tasks. Previously, when students were included in general curriculum tasks for social inclusion, the focus was often solely upon completing the tasks as a matter of belonging to the community of learners; therefore, the student might have been provided hand over hand assistance, a model to copy, or even a separate task to complete. These types of assistance did not move the student towards learning the content standard; rather the focus was on social inclusion as opposed to content knowledge acquisition.

- After instructional activities/tasks are identified, decide upon the supports that will assist the student in learning the determined outcomes including specialized support needed for a specific instructional task which could be:
  - Specifically listed in the IEP
  - From a general education teacher or peer
  - Both low- and high-tech assistive technology
  - Adaptations
  - Strategies
  - Tools (e.g., calculator)

- Consider creating a menu of support ideas to be utilized across instructional tasks such as:
  - When reading orally, the student could listen with the additional support of manipulating an object representative of the topic of text.
  - When the class is completing a worksheet, the student could match picture symbols to vocabulary words.

Pathways (Denham, 2004) *located in Appendix B is a resource which provides numerous ways to make learning accessible. It includes a section for reading, writing, and presenting. It is helpful when planning for access to the general curriculum and standards.*

Considering the rapidly developing world of assistive technology coupled with an individual's changing level of skills, it is important to continually evaluate the use of specific tools to determine if they are effective and the best way to support active participation, both to access information and demonstrate knowledge. In other words, a student should never be denied instruction on concepts because he/she is unable to access the information through traditional instructional formats such as reading the text without appropriate adaptations or because they were unable to demonstrate the learning through traditional means. Instead, the information needs to be presented in a way that is accessible and meaningful to the student (e.g., tactile objects, picture symbols or use of a text reader) so that the student has equitable opportunities to learn and demonstrate knowledge, as do all other students.

- To plan for supports, ask the following questions:
  - *Is the student actively participating in each part of the instructional task?* That may include reading, writing, speaking, listening, answering questions, etc. These tasks may be done in the context of different instructional formats, such as group or individual work. The focus is not upon *which* instructional tasks the student will participate in, but *how*.

  - *What is needed to engage the student in the instruction?* This may not require anything additional to what all students are receiving, but may be something as simple as having the student hold a picture or picture symbol related to the concept while listening. The engagement should be matched to the particular learning style of the student and facilitate the acquisition of the content.

  - *Does the student have a means to demonstrate the knowledge, skills, and concepts acquired?* Again, preferential learning styles should play a role here, and multiple intelligences (Gardner, 1993) should also be considered. Even though the student may be learning more complex and sophisticated ways to communicate knowledge, it may be preferable to rely on a more established means of communication so that the demonstration of new knowledge is not compounded by a "new" communication mode as well.

Step 4 - Target specific objectives from the Individualized Education Program (IEP). *(See examples in Appendix A)*

- Determine which instructional tasks provide opportunities to learn and practice the student's IEP objectives.

- IEP objectives that are academic can be easily practiced across numerous instructional tasks and curricular areas such as objectives to:
    - Increase vocabulary or comprehension within the instructional unit based on a novel can then be worked on again in the context of an additional book.
    - Measurement can be worked on in math class or science class while completing an experiment.

- IEP objectives that are functional but not aligned with grade level standards can also be embedded into instruction on standards and grade level elements while remaining under typical IEP domain areas in the IEP:
    - Communication skills (e.g., attending, asking for assistance, responding to name, etc.)
    - Motor skills (e.g., activating a switch to communicate answers, handling manipulatives and objects related to content, etc.)
    - Social skills (e.g., making eye contact, staying on task, etc.)

Consider communication, motor, and social skills. These skills have sometimes been taught in relative isolation, as goals in and of themselves. What has been missing from instruction is context – what does a student need to communicate, what does she need to be able to do, and what social skills does he need. By looking at these skills in the context of curriculum-based instruction - what does the student need to communicate during social studies, what does she need to be able to do physically during math, and how does he need to interact with others in language arts, these skills can be seen as giving additional access to curriculum. These skills can be addressed while also providing instruction on the content standards.

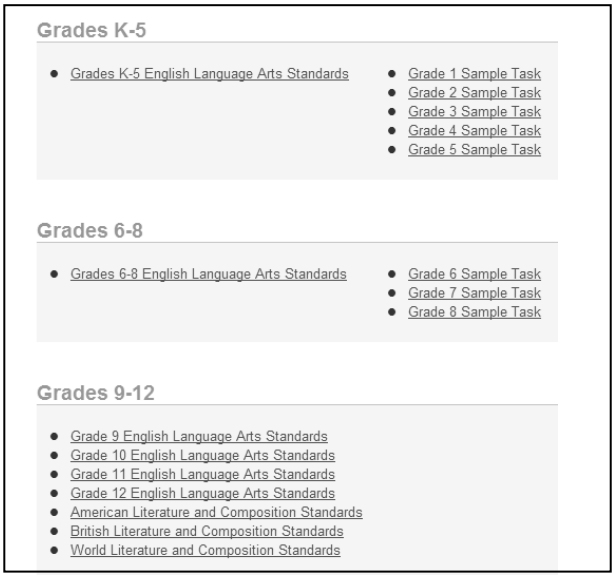
- By embedding these IEP objectives within the context of general education activities (the same ones as specified in Step 3), the teacher gives students access to the curriculum as required by IDEIA 2004 and NCLB, while still providing essential instruction on those critical skills which then:
    - Allows for a seamless transition from basic skills to the acquisition of content area knowledge.
    - Has curriculum as the basis for instruction and all students will be receiving the same content.
    - Allows students to become more effective communicators and to demonstrate what they know about the curriculum.

- Even though much of the instruction of students may be focusing on functional skills, it is important for teachers to instruct and assess students' performance on the content knowledge as well.

V. Resources for Access to Grade Level GPS

Georgia Department of Education (DOE) Website:

www.georgiastandards.org



ENGLISH/LANGUAGE ARTS (ELA):

Grades 4-8 GPS **English Language Arts (ELA)** have **Unit Organizers** that can be used and adapted to promote access to Grade Level GPS. These Unit Organizers are available on-line at www.georgiastandards.org then click on: **English Lang. Arts**, then **ELA Framework**. Scroll down to select the **Unit Organizer** of choice.

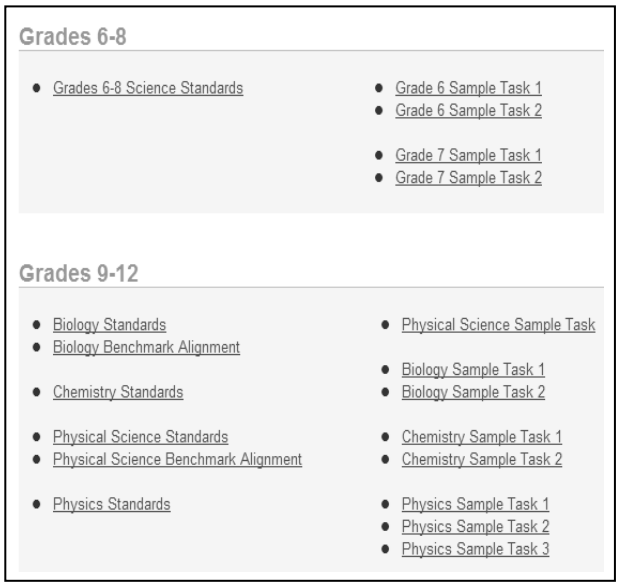
MATHEMATICS:

Grade 6 GPS **Mathematics** has **Unit Organizers** that can be used and adapted to promote access to Grade Level GPS. These Unit Organizers are available on-line at www.georgiastandards.org then click on: **Mathematics Framework**. Scroll down to select the **Math Unit** of choice.

(Unit Organizers will be developed for other grade levels as the GPS for those grades are rolled-out.)

SCIENCE:

Grades K-8, High School **Physical Science** and High School **Biology** have **Benchmarks Alignment** and **Sample Tasks** that can be used and adapted to promote access to Grade Level GPS. The Benchmarks Alignments are available on-line at www.georgiastandards.org then click on: **Science**. Scroll down to select the **Benchmarks Alignment** of choice; Benchmarks are very helpful in describing curriculum content. **Sample Tasks** are included within each grade level Science GPS.



SOCIAL STUDIES:

Currently all grade levels of GPS **Social Studies** are available on the website but will not roll out until School Years 07-08 and 08-09. Comparisons between Social Studies GPS and the currently used QCC are available on-line at www.georgiastandards.org then click on: **Social Studies Standards**.

Georgia Department of Education (GDOE) Resources:

Georgia Project for Assistive Technology (GPAT)

http://gpat.org

526 Forest Parkway, Suite H, Forest Park, GA 30297
(404) 362-2024; Fax: (404) 608-2559
Kim Hartsell, Project Director

Georgia Project for Assistive Technology (GPAT) provides a range of assistive technology professional development and technical support services. Initially funded in 1991, **GPAT** is equipped to provide assistance to schools in meeting the requirement to determine the need for assistive technology for students with disabilities. In addition, **GPAT** houses an array of assistive technology devices available for check out by local systems and provides updated information to systems about use of assistive technology in instruction.

GPAT has developed many resources to assist educators in providing assistive technology services to students with disabilities. ***Supporting Participation in Typical Classroom Activities*** provides numerous examples of typical classroom tasks and the accommodations, modifications, and assistive technology solutions to provide access to the general curriculum for students with disabilities. To access ***Supporting Participation…,*** open the **GPAT** website, then click on **Resources / Implementation & Integration / Documents.**

Curriculum and Instructional Services

1754 Twin Towers East, Atlanta, Georgia 30334
(404) 656-4059

Division of Exceptional Students

1870 Twin Towers East, Atlanta, Georgia 30334
(404) 656-3963; Fax: (404) 651-6457

Georgia Learning Resources System (GLRS) *(See following page for the 17 GLRS Locations)*

1870 Twin Towers East, Atlanta 30334-5044
(404) 657-9971
Lynne Williams, Consultant-GLRS/State Improvement Grant

The **Georgia Learning Resources System (GLRS)** is a network of 17 centers throughout Georgia that provide training and resources to educators and parents of students with disabilities. The **GLRS** provides ongoing, effective, professional learning to assist local school systems in meeting the federal requirements of the *Individuals with Disabilities Education Act (IDEA)* and *No Child Left Behind (NCLB)*, and to assist teachers and administrators in implementing effective instructional strategies.

The **GLRS** have positively impacted student achievement in the areas of supporting struggling readers; decreasing inappropriate student behaviors and increasing student participation in learning; assisting with access to the general education curriculum for all students.

Support for parents of students with disabilities is also a charge of the **GLRS**, through "Child Find" activities and coordination with the Georgia Parent Mentor Program.

http://www.glrs.org

The home website of the Georgia Learning Resources System (GLRS)

http://www.glrs.org/resources.htm

A list of internet sites useful for persons working with students with disabilities

http://www.glrs.org/Alternative%20Strategies%20Manual.pdf

Alternative Strategies Manual for the Problem Learner is a 124 page guide collected by the GLRS that includes teaching strategies and interventions for students experiencing reading, writing, problem solving, organizational, speech, and/or behavioral difficulties.

Georgia Learning Resource System Information

Coastal GLRS
Savannah
1-800-827-5239
Systems Served: Bryan, Camden, Chatham, Effingham, Glynn, Liberty, Long, McIntosh

East Georgia GLRS
Augusta
1-800-282-7552
Systems Served: Burke, Columbia, Emanuel, Glascock, Jefferson, Jenkins, Lincoln, McDuffie, Richmond, Taliaferro, Warren, Wilkes

East Central GLRS
Dublin
1-478-275-3666
Systems Served: Baldwin, Bleckley, Dodge, Hancock, Jasper, Johnson, Laurens, Montgomery, Pulaski, Putnam, Telfair, Treutlen, Washington, Wheeler, Wilcox and Wilkinson Counties; Dublin City

Metro East GLRS
Atlanta
1-678-676-2400
Systems Served: DeKalb, Fulton, Gwinnett and Rockdale Counties; Buford and Decatur Cities

Metro South GLRS
Griffin
1-770-412-4082
Systems Served: Butts, Fayette, Henry, Lamar, Newton, Pike, Griffin-Spalding, Thomaston-Upson

Metro West GLRS
Atlanta
1-770-432-2404
Systems Served: Clayton, Cobb, and Douglas Counties; Atlanta and Marietta Cities

Middle Georgia GLRS
Fort Valley
1-478-825-3132
Systems Served: Bibb, Crawford, Houston, Jones, Monroe, Peach, Twiggs

North Georgia GLRS
Cleveland
1-706-865-2043
Systems Served: Banks, Dawson, Forsyth, Franklin, Habersham, Hall, Hart, Lumpkin, Rabun, Stephens, Towns, Union, and White Counties; Gainesville City

North Central GLRS
Ellijay
1-706-276-1111
Systems Served: Cherokee, Fannin, Gilmer, Murray, Pickens, and Whitfield Counties; Dalton City

Northeast GLRS
Winterville
1-706-742-8292
Systems Served: Barrow, Clarke, Elbert, Greene, Jackson, Madison, Morgan, Oconee, Oglethorpe, Walton Counties; Commerce, Jefferson and Social Circle Cities

Northwest GLRS
Rome
1-706-295-6189
Systems Served: Bartow, Catoosa, Chattooga, Dade, Floyd, Gordon, Haralson, Paulding, Polk and Walker Counties; Bremen, Calhoun, Cartersville, Chickamauga, Rome and Trion Cities

South Georgia GLRS
Lenox
1-229-546-4367
Systems Served: Ben Hill, Berrien, Brooks, Cook, Echols, Irwin, Lanier, Lowndes, Tift and Turner Counties; Valdosta City

South Central GLRS
Waycross
1-912-338-5998
Systems Served: Atkinson, Bacon, Brantley, Charlton, Clinch, Coffee, Pierce, Ware

Southeast GLRS
Claxton
1-912-739-1551
Systems Served: Appling, Bulloch, Candler, Evans, Jeff Davis, Screven, Tattnall, Toombs and Wayne Counties; Vidalia City

Southwest GLRS
Albany
1-229-432-9151
Systems Served: Baker, Calhoun, Colquitt, Decatur, Dougherty, Early, Grady, Lee, Miller, Mitchell, Seminole, Terrell, Thomas and Worth Counties; Pelham and Thomasville Cities

West Georgia GLRS
Columbus
1-706-748-2140
Systems Served: Chattahoochee, Clay, Crisp, Dooly, Harris, Macon, Marion, Muscogee, Quitman, Randolph, Schley, Stewart, Sumter, Talbot, Taylor, Webster

West Central GLRS
Grantville
1-770-583-2528
Systems Served: Carroll, Coweta, Heard, Harris, Meriwether, Troup Counties; Carrollton City

Access to the GPS Resources

(Date in parentheses indicates date resource was added to the Resource Guide)

Access Across Curricular Areas:

Academy Curriculum Exchange *(10/3/05)*
http://ofcn.org/cyber.serv/academy/ace/
Contains volumes of activities in Language Arts, Math, Science, and Social Studies from Grades K-12

Brain POP *(2/9/06)*
http://www.brainpop.com/
Short videos across curricular areas and grade levels; Videos are directly correlated to grade level standards across the states, including Georgia. There is a 14 day free trial that allows for access to all areas of the curriculum.

Captioned Media Program *(2/28/06)*
http://www.cfv.org/
Gives access to free captioned materials for use with students, parents, educators of students who are deaf/hard of hearing.

Dorling Kindersley DK Readers ***(DK Publishing)*** *(10/3/05)*
Series of books (Levels 1: easiest to read – Level 4: has the most print) across all curricular areas with high interest, low readability

DLTK Crafts for Kids Educational Activities for Children *(2/3/06)*
http://www.dltk-teach.com/
Elementary age activities that can be downloaded for free, including stories, colors, numbers, shapes, time, and more

Enchanted Learning *(2/3/06)*
http://www.enchantedlearning.com/Home.html
Has multitudes of activities across curriculum areas with great graphics. Can access good number of materials without membership; $20 annual membership gives access to all activities and materials

Federal Resources for Educational Excellence *(2/3/06)*
http://www.ed.gov/free/index.html
Has resources for all academic and curricular areas; contains detailed lesson plans that can be adapted for use with all students.

IntelliShare Classroom Activity Exchange *(10/3/05)*
http://intellitools.com
This website allows for downloads of pre-made computer activities across all academic areas and grades. The activities can be utilized with and without the Intellikeys keyboard, to allow access by a typical computer mouse, trackball, joystick, and/or switches.

KIDS Discover Magazine *(Publisher: Kids Discover, New York)* *(10/3/05)*
http://www.kidsdiscover.com/teachFR.htm
Monthly publication with each issue dedicated to a specific topic, including science, social studies, math, and more. Very clear graphics/photographs and concise captions/descriptions. Website gives links to state standards and teaching activities. Appropriate for Elementary through High School grades. No advertisements!

Learn NC (University of North Carolina) *(2/3/06)*
http://www.learnnc.org/
Activities and lesson plans across curriculum areas and grade levels including great graphics/pictures

Learning Page *(2/9/06)*
http://www.learningpage.com/free_pages/gallery.html
Worksheets that can easily be adapted to other formats; Activities include alphabet, calendar, money, senses, time, measurement, and numbers; Membership is free

Lessons 4 All *(2/3/06)*
http://www.lessons4all.org/
Teacher made and teacher tested unit-based activities, including teacher tips and free, downloadable materials. Other materials are also available for purchase.

Nebo School District, Utah *(2/3/06)*
http://www.nebo.edu/misc/learning_resources/ppt/
Volumes of useable PowerPoint activities across curricular areas and grade levels - This is a must see!

Priory Woods School, Great Britain *(2/3/06)*
http://www.priorywoods.middlesbrough.sch.uk/resources.htm
http://www.priorywoods.middlesbrough.sch.uk/resources/videos.htm
A variety of Switch/Touch Screen videos with popular music, allows activation of these short programs through the single touch of a switch/touch screen. Also includes directions on creating your own switch videos using Macromedia Flash, Photo Story 3 (free software), and Switch-it Maker 2.

SEN Teacher *(2/3/06)*
http://www.senteacher.org
A variety of free printable activities across the curriculum, including math nets for constructing 3-D shapes, reading cubes, and other resources

Sites for Teachers *(1/29/06)*
http://www.sitesforteachers.com
A link to many, many websites with educational materials to download and use for teaching across curricular areas

Songs for Teaching: Using Music to Promote Learning *(10/3/05)*
http://www.songsforteaching.com/
This website offers songs and musical activities for all grade levels across all academic areas.

Spark Notes *(2/3/06)*
http://www.sparknotes.com/
Across curriculum explanations, examples, and study guides for math, literature, science and social studies; free to read on-line, there is a cost to download information

Start-to-Finish Core Content Books & CD -Roms *(Publisher: Don Johnston, Inc.)* *(10/3/05)*
Series of across curriculum high interest, low readability text that include paperback book, audiotape version of the story, and story on CD-Rom with comprehension assessment included; two sets: 2nd & 3rd grade / 4th & 5th grade readability

Tech Learning *(2/3/06)*
http://www.techlearning.com/teacher/
Details ways to access curriculum using technology; gives suggestions and links

Tin Snips *(1/29/06)*

http://tinsnips.org

Many pre-made classroom activities including calendars, schedules, time & money, social skills, ABC's

3-D Paper Craft *(2/9/06)*

http://cp.c-ij.com/english/3D-papercraft/index.html

Dozens of 3-D materials to print and assemble, including volcanoes, globes, cities, animals, and more

Augmentative and Alternative Communication (AAC):

AAC Interventions *(10/3/05)*

http://www.aacintervention.com/

Offers ***Activity Ideas*** and ***Creating Literature-Based Communication Boards*** to use in the classroom; has list of books with repeated lines.

Boardmaker Activities

http://groups.yahoo.com/group/boardmaker/

This is a Yahoo group whose purpose is to share Boardmaker activities and materials

Do 2 Learn *(1/29/06)*

http://do2learn.com

Includes many free activities to download and use: colors, feelings, math grids, songs and games. Also offers products for purchase

Georgia Project for Assistive Technology (GPAT) *(10/3/05)*

http://gpat.org

Speaking of Speech *(10/3/05)*

http://www.speakingofspeech.com/

Materials Exchange 1 & 2 have many pre-made language arts and communication activities, including adapted stories and poetry. Extensive lists of idioms, including picture symbols of correct and literal meanings are included in ***Materials Exchange 2***. Activities include ***Boardmaker*** picture symbols.

English/Language Arts:

ABC Teach *(1/29/06)*

http://abcteach.com

Free printable worksheets, poetry forms (acrostics, etc.), word wall vocabulary, shape books, etc. For full access to all activities, membership is required.

Cliffs Notes *(2/3/06)*

http://www.cliffsnotes.com/

Study guide format for all genres of literature; includes summaries, character analyses, and other helpful tips that can be very useful in adapting literature

Giggle Poetry *(10/3/05)*

http://www.gigglepoetry.com

Poetry Class includes many genres of poetry (e.g., Haiku, Clerihew, Found Poems, Sound Poems, Limericks). Descriptions of the structures and examples of each are also given.

Poetry Theater turns many poems into performance pieces -- especially useful for AAC users.

News-2-You *(1/29/06)*

http://www.news-2-you.com

News-2-You is a On-line newspaper for students with special needs and beginner readers. Each weekly edition includes 3 levels of editions, covering current events, recipes, jokes, and activity pages. Communication boards are also included weekly with vocabulary corresponding to the week's news. Available by subscription but allows for download of one copy for trial purposes.

PBS Kids *(2/3/06))*

http://pbskids.org/lions/hen/

Based upon the PBS "Between the Lions" TV series, this website has many stories, songs, and printable stories to watch and/or download

Pink Monkey *(2/3/06)*

http://pinkmonkey.com

Study guide format for all genres of literature; includes summaries, character analyses, and other helpful tips that can be very useful in adapting literature

Priory Woods School *(2/3/06)*

http://www.priorywoods.middlesbrough.sch.uk/resources/books.htm

Eight talking story books from Great Britain including recipes that could be used when studying British culture. Has wonderful PowerPoint template for creating your own talking books.

Speaking of Speech *(10/3/05)*

http://www.speakingofspeech.com/

Materials Exchange 1 & 2 have many pre-made language arts and communication activities, including adapted stories and poetry. Extensive lists of idioms, including picture symbols of correct and literal meanings are included in ***Materials Exchange 2***. Activities include ***Boardmaker*** picture symbols.

Starfall.Com *(1/29/06)*

http://www.starfall.com

This website offers a variety of fun, educational phonics, reading, and writing activities for students Grade K-2nd. The interactive calendar computer activity is appropriate for older grades as well. The Starfall website is offered as a free public service.

Start-to-Finish and **Literacy Starters** Books & CD-Roms *(Don Johnston, Inc.)* *(10/3/05)*

Series of high interest, low readability books that include paperback book, audiotape version of the story, and story on CD-Rom with comprehension assessment included. Start-to-Finish readers have two readability levels: 2nd & 3rd grade / 4th & 5th grade; Literacy Starters for non-readers or beginning readers.

Story Line Online *(2/3/06)*

http://www.storylineonline.net/

Popular stories read by Screen Actors Guild Foundation actors/actresses, using speech, pictures, and text. Related activities also included.

Teen Ink *(10/3/05)*

http://teenink.com/Poetry

Sponsored by the non-profit Young Authors Foundation, Inc., this website offers poetry and short stories written by teens. All genres of poetry are available through the Poetry website.

Wishbone Series of Literature *(Publishers: Scholastic, Big Red Chair, Harper)* *(10/3/05)*

http://www.readingwell.com/z-wishbone.html

Series of high interest, low readability books featuring Wishbone the Dog, that includes a variety of genres of literature; classic literature is broken into short chapters including character, scene, and plot information

Mathematics:

Math Forum *(1/29/06)*

http://mathforum.org

The Teacher Exchange has lesson plans for math, grades Pre-K – High School. Some lesson plans have pictures or links to find additional plans or information.

Money Instructor *(2/3/06)*

http://www.moneyinstructor.com/teachers.asp

Lesson plans and worksheets for teaching money skills, personal finance, and life skills related to money.

National Library of Virtual Manipulatives *(1/29/06)*

http://nlvm.usu.edu

Computer aided manipulatives in every area of math; manipulatives come with projects that can be done using the computer. Developed by Utah State University

Songs for Learning *(1/29/06)*

http://www.songsforlearning.com/

This website offers songs for learning across the K – High School math curriculum.

The Math Worksheet Site *(2/9/06)*

http://themathworksheetsite.com/

An on-line math worksheet generator that allows you to input specifics then math worksheets are created within those parameters; can also subscribe for additional materials

Science:

Amazing Space *(2/3/06)*
http://amazing-space.stsci.edu/
Lots of teaching materials and resources related to space and the planets

Botany for Kids (Grades K – High School) *(2/3/06)*
http://www.nbii.gov/disciplines/botany/science.html
Links to many websites and activities dealing with the "wild world of plants"

Eyes on the Sky, Feet on the Ground *(2/3/06)*
http://hea-www.harvard.edu/ECT/the_book/index.html
Hands on astronomy activities, including many planet related activities for students, include detailed instructions and illustrations

Global Warming Kids Site *(2/3/06)*
http://www.epa.gov/globalwarming/kids/version2.html
Multimedia displays on global warming, water cycle, carbon cycle

Hands-on Activities for Teaching Biology to High School/Middle School Students *(10/3/05)*
http://serendip.brynmawr.edu/sci_edu/waldron/
Many activities for teaching biology concepts to Middle/High School students that can be adapted for use with students with significant cognitive impairments.

Hands-On Museum (Ann Arbor, Michigan) *(2/9/06)*
http://www.aahom.org/index.htm
Teacher resources section has many hands-on science experiments and website links

Lesson Plans Page.com *(1/29/06)*
http://www.lessonplanspage.com/SciExperiments.htm
Many science lesson plans and experiments for elementary through high school grades.

Marian Koshland Science Museum - Putting DNA to Work *(2/3/06)*
http://www.koshlandscience.org/exhibitdna/index.jsp
Many activities related to DNA

NBII Children's Butterfly Site *(2/3/06)*
http://mpin.nbii.org/insects/kidsbutterfly/
Everything you want to know about butterflies: life cycle, photographs, coloring pages, links to other websites/resources

Science Explorer *(2/9/06)*
http://www.exploratorium.edu/science_explorer/
Lots of hands-on experiments using everyday household materials

Tech Learning *(2/3/06)*
http://www.techlearning.com/showArticle.jhtml?articleID=177100334
Website with links to "20 Sensational Science Sites"

Try Science *(2/9/06)*
http://www.tryscience.org/home.html
Marvelous science website that includes experiments, field trips, adventures, and tons of links to other science resources

Universal Design for Learning Information:

ERIC Clearinghouse on Disabilities and Gifted Education
http://ericec.org/digests/e586.html
Curriculum Access and Universal Design for Learning
Describes Universal Design for Learning (UDL) and gives website information regarding UDL

http://ericec.org/faq/assist-x.html
Selected Internet Resources for Assistive Technology
Council for Exceptional Children (CEC) sponsored website that lists and provides links to selected internet resources for assistive technology

JSET, Journal of Special Education Technology
http://jset.unlv.edu/15.1/asseds/rose.html
In-depth article on Universal Design for Learning in education

PATINS Project
http://www.patinsproject.com/universal_design_for_learning_project.htm
Describes Universal Design for Learning; lists and describes 22 UDL Pilot sites

The Trace Research & Development Center
http://trace.wisc.edu/world/gen_ud.html
General Concepts, Universal Design Principles and Guidelines

Alignment to the General Education Curriculum:

Courtade-Little, Ginevra and Diane Browder. ***Aligning IEPs to Academic Standards For Students with Moderate and Severe Disabilities***. Verona, WI: Attainment Company, Inc. 2005.
Gives explanation and examples of how to align IEPs to academic standards.

Differentiated Instruction

While there is much research on differentiated learning and instruction of students with multiple learning styles, the basic premise is for teachers to consider student readiness, interest, and learning profiles (Tomlinson, ERIC digest) when deciding how to instruct a particular lesson. Four areas of differentiation should be considered; (a) content, (b) process, (c) products, and (d) learning environments.

Content

- How will all students have access to the information being presented in each task?
- What information does each student need to learn from the task?
  - Providing materials in multiple means of presentation
  - Providing mechanisms for students to access information, including Assistive Technology

Process

- How the student participates in the tasks in order to make sense of the materials
  - Providing tasks that incorporate the same important understandings and skills, but each student has different levels of support, challenge, or complexity to complete the tasks
  - Providing manipulatives
  - Providing extended time; Decreasing number of problems

Products

- Projects that require the students to rehearse, apply and extend what they have learned
  - Providing options for how to express the required learning – picture symbols, tactile objects, technology, writing, collage, puppet show, PowerPoint presentation
  - Providing opportunities which allow students to create their own project as long as it meets required components
  - Providing opportunities which allow students to work in cooperative groups or alone

Learning Environment

- How does the classroom look and work?
  - Providing places in the room to work quietly and without distraction, as well as places that invite student collaboration
  - Providing materials which connect to a variety of cultures and student experiences
  - Providing clear guidelines for independent work that matches individual needs
  - Providing routines which allow students to get help when teachers are busy with other students and cannot help them immediately
  - Providing students with an understanding that some learners need to move around to learn, while others do better sitting quietly (Tomlinson, 1995, 1999; Winebrenner, 1992, 1996)

Universal Design for Learning

In the education field, today more than ever, teachers are challenged by the diversity of student needs. CAST has developed the theory of Universal Design for Learning, based on the universal design movement in architecture, to address this challenge. Features such as curb cuts are universally designed to give access to users with a variety of needs. CAST applies this theory to education through the Universal Design for Learning (UDL), so that a wide variety of supports are in place to facilitate learning for all students.

Universal Design for Learning calls for...

- *Multiple means of representation* to give learners various ways of acquiring information and knowledge,
- *Multiple means of expression* to provide learners alternatives for demonstrating what they know,
- *Multiple means of engagement* to tap into learners' interests, offer appropriate challenges, and increase motivation.

The Center for Applied Special Technology (CAST) website (http://www.cast.org/research/udl/index.html) has many resources to help teachers apply the theory of UDL to instruction. Among the links are the following:

Teaching Every Student	"The Teaching Every Student (TES) section of the CAST Web site supports educators in learning about and practicing Universal Design for Learning (UDL)." CAST http://www.cast.org/teachingeverystudent/
Information and Ideas	This section of Teaching Every Student supports recognition learning by offering publications, presentations, and resources related to UDL. CAST http://www.cast.org/teachingeverystudent/ideas/
UDL Toolkits	"The CAST UDL Toolkits help educators to understand and apply UDL principles in classrooms and/or to train others in UDL. Using the UDL framework, the toolkits support varied learning styles, needs, and preferences for teachers and students. Interactive activities, tutorials and tools are provided online; similar versions can be downloaded or printed. Specific curriculum resources, tools, and materials may be copied and used in classrooms." CAST http://www.cast.org/teachingeverystudent/toolkits/
Tools and Activities	"This section of Teaching Every Student supports strategic learning by offering tutorials, tools, templates, and activities to help you put UDL into practice." CAST http://www.cast.org/teachingeverystudent/tools/

Recommended Resources

Hayes Jacobs, Heidi. *Mapping the Big Pictures: Integrating Curriculum and Assessment K-12.* Alexandria, VA: Association for Supervision and Curriculum Development. 1997

Marzano, Robert J. *What Works in Schools: Translating Research into Action.* Alexandria, VA: Association for Supervision and Curriculum Development. 2003.

Robert J. Marzano, Debra Pickering, and Jay McTighe. *Assessing Student Outcomes: Performance Assessment Using the Dimensions of Learning Model.* Alexandria, VA: Association for Supervision and Curriculum Development. 1993.

Marzano, Robert J, Debra J. Pickering, and Jane E. Pollock. *Classroom Instruction That Works: Research-Based Strategies for Increasing Student Achievement.* Alexandria, VA: Association for Supervision and Curriculum Development. 2001.

Marzano, Robert J, Jana Marzano, & Debra Pickering. *Classroom Management That Works: Research-Based Strategies for Every Teacher.* Alexandria, VA: Association for Supervision and Curriculum Development. 2003.

Strong, Richard W., Harvey F. Silver, and Matthew J. Perini. *Teaching What Matters Most: Standards and Strategies for Raising Student Achievement.* Alexandria, VA: Association for Supervision and Curriculum Development. 2001.

Tomlinson, Carol Ann. *How to Differentiate Instruction in Mixed-Ability Classrooms, 2nd edition.* Alexandria, VA: Association for Supervision and Curriculum Development. 2001.

Wiggins, Grant and Jay McTighe. *Understanding by Design.* Alexandria, VA: Association for Supervision and Curriculum Development. 1998.

Wiggins, Grant and Jay McTighe. *Understanding by Design Study Guide.* Alexandria, VA: Association for Supervision and Curriculum Development. 2000.

Note: Copies of these books should be available at each school.

Appendix A

Student Examples Using the Stepwise Process

CARLOS

Student Description

Carlos is a 13 year old middle school student with a moderate intellectual disability; he meets visual impairments eligibility and wears glasses. He is nonverbal and utilizes vocalizations, gestures, and AAC devices to communicate. Carlos uses a wheelchair which he can self propel for very short distances, and has functional use of one hand. Carlos fatigues easily and requires frequent breaks.

Present Level of Performance

For communication, Carlos utilizes direct selection to access several augmentative communication devices with a variety of picture symbol overlays and up to 15 symbols per page. Carlos is beginning to combine 3 – 4 picture symbols to create sentences, with verbal prompting. . He can identify common objects and many photographs and picture symbols. Carlos enjoys using the computer and requires a trackball for computer access. He has mastered one digit addition in math utilizing a talking calculator.

IEP Objectives

Carlos' objectives include:

- Self-propel wheelchair for moderate distances
- Increase sentence length using picture symbols with printed words
- Follow pictorial directions/task analysis involving 5 or more steps
- Addition of two digit numbers
- Increase initiation of communication using augmentative communication devices
- Self-advocate for use of technology when needed
- Write responses to response item questions for inclusion in his portfolio using assistive technology

A typical instructional activity that Carlos participates in is making a purchase at the local grocery store. He uses picture symbols to select his items, wheels himself from the end of the aisle to the cash register, and counts out the dollars needed to make the purchase. Following is how Carlos participates in a middle school math instructional unit that is geared to teach a math standard and grade level elements.

Middle School Math Sample

1. IDENTIFY THE STANDARD(S) THE INSTRUCTIONAL UNIT WILL ADDRESS.		
What is/are the standard(s)?	**What are the grade level elements?**	**What is/are the Big Idea(s) of the standard(s)?**
M6M3. Students will determine the volume of fundamental solid figures (right rectangular prisms, cylinders, pyramids and cones).	**a. Determine the formula for finding the volume of fundamental solid figures.** **b. Compute the volumes of fundamental solid figures, using appropriate units of measure.** **c. Estimate the volumes of simple geometric solids.** **d. Solve application problems involving the volume of fundamental solid figures.**	• **Mathematical formulas and models can be used to find the volume of solid figures**

2. DEFINE THE EXPECTED RESULTS OF INSTRUCTION FROM THE INSTRUCTIONAL UNIT.		
What is every (general education) student expected to learn by the end of the instructional unit?	**What will be the focus of direct instruction and monitoring for the student with significant cognitive disabilities?**	**What supports have been identified on the student's IEP?**
Explain the three-dimensionality of volume •**Apply volume formula for rectangular prisms** •**Understand that the relationship between the volume of two similar rectangular prisms and the scale factor is cubic**	• **Count manipulatives to measure length, width, and height** • **Compute the volume** • **Compare sizes of rectangular prisms (boxes)**	• **Manipulative/objects** • **Communication devices** • **Assistive Technology (talking calculator, number stamps)**

3. IDENTIFY THE INSTRUCTIONAL TASKS.		
What are the instructional tasks planned for all students?	**How can the student actively participate in the instructional tasks?**	**Which specific supports would help the student access the tasks?**
• Students will calculate volume when given the formula and dimensions. • Students will note how the volume of Prism A, the volume of Prism B, and their ratio change and record on the provided chart. • Given a rectangular prism (box), students will use cm grid paper to make at least 3 nets to form the box. Students will test each paper net by cutting it out and wrapping it around the box. Students then will write descriptions for their nets.	• Use one centimeter cubes to fill the box rather than the grid paper - Pick up and place cubes into box until filled the length - Count the cubes - Enter number into calculator - Select a number stamp that matches the length measurement - Stamp the number in the correct spot on the adapted worksheet - Repeat steps for width - Repeat steps for height • Enter the numbers from the worksheet one at a time on the talking calculator, following printed formula to compute the volume	• One centimeter cubes • Boxes of various sizes • Talking calculator • Number stamps • Adapted worksheet

4. TARGET SPECIFIC OBJECTIVES FROM THE IEP TO ADDRESS DURING THE UNIT.		
Which instructional tasks provide the opportunity to work on objectives?	**Which standards based IEP objectives can be taught and practiced within the instructional tasks?**	**What other IEP objectives can be taught and practiced within the instructional tasks?**
• Create nets to figure volume • Calculate volume using formula	• Addition of two digit numbers • Write responses to response item questions using assistive technology.	• Initiate communication • Self-advocate for use of technology

Various Methods to Access the Standard

- ❖ Student can count the cubes when placed into the box for length, width, and height, then enter numbers into calculator, utilizing worksheet for the formula to determine correct area. Student completes worksheet using writing utensil or number stamps/stickers.

- ➢ Student can count the cubes as being placed into the container, by using a printed number line and using 1-1 correspondence between the numbers and the cubes. Students then matches correct numbers to worksheet, utilizing pre-printed or tactile numbers, AAC device with multiple choices.

- ✓ Student will pick up a cube and place it into the container, then activate a single switch AAC device with multiple messages to count the number of cubes as they are placed into the container. Student then is given a choice of 2-3 numbers to identify how many cubes were placed into the container.

Figure 1

Cubes & container for computing volume of solid figure

Sample of Carlos' Work

Container	Length x	Width =	Area of Base x	Height =	Volume
 Food Keeper	5 5 V	6 6 M	30 30 M M	2 2 ✓	60 cc 60 M cc ✓
 Watch Box	4 4 V	2 2 V	8 8 M	3 3 ✓	24 24 V ✓ cc
 Candy Box	8 8 M	4 4 ✓	32 32 V M	2 2 ✓	64 64 M ✓ cc

Counted cubes as placed in container - counted how many for length, then width, the height. Matched the numbers to number stamp with modeling or verbal prompting. Used talking calculator to compute area & Volume with verbal prompting. V = verbal M = modeling

Figure 2

Tanner

Student Description

Tanner is a 10 year old elementary school student with a severe intellectual disability and autism. He is nonverbal but vocalizes and uses gestures. He exhibits problematic behaviors including using objects in inappropriate ways (i.e., flipping paper), throwing materials, disruptive vocalizations, and occasionally hitting.

Present Level of Performance

Tanner uses the Picture Exchange Communication System (PECS) to communicate. He requires a systematic schedule and a written behavior plan to support him. He also requires picture symbols to access reading material. He can match like items and attend to tasks for short periods of time but requires much prompting to complete a task.

IEP Objectives

Tanner's objectives include:
- Initiate Communication
- Identify picture symbols
- Complete assigned tasks (5 min. and under)
- Match pictures to concepts
- Count and creating groups of objects up to 15
- Maintain appropriate behavior (e.g., no screaming, hitting, or leaving without permission)

A typical instructional activity that Tanner participates in is functional reading. He practices on a computer program that teaches functional/daily living signs. It requires him to identify signs/picture symbols and match them to concepts. He also works on completing a required section before playing the dinosaur game he prefers. Following is an instructional unit geared to teach science standards and grade level elements.

Elementary School Science Sample

1. IDENTIFY THE STANDARD(S) THE INSTRUCTIONAL UNIT WILL ADDRESS.		
What is/are the standard(s)?	**What are the grade level elements?**	**What is/are the Big Idea(s) of the standard?**
S5E1. Students will identify surface features of the Earth caused by constructive and destructive processes.	**Identify surface features caused by constructive processes.** **• Deposition (Deltas, sand dunes, etc.)** **• Earthquakes** **• Volcanoes** **b. Identify and find examples of surface features caused by destructive processes.** **• Erosion (water: rivers and oceans, wind)** **• Weathering** **• Earthquake** **• Volcano** **c. Relate the role of technology and human intervention in the control of constructive and destructive processes.** **• Seismological studies** **• Flood control, (dams, levees, storm drain management)**	**•The surface of the Earth changes, both building up and tearing down.**

2. DEFINE THE EXPECTED RESULTS OF INSTRUCTION FROM THE INSTRUCTIONAL UNIT.		
What is every (general education) student expected to learn by the end of the instructional unit?	**What will be the focus of direct instruction and monitoring for the student with significant cognitive disabilities?**	**What supports have been identified on the student's IEP?**
• **Identify that constructive processes and destructive processes cause some of the earth's surface features (i.e., mountains, valleys, etc.).** • **Identify these types of surface features found in Georgia.**	• **Identify 2 constructive and destructive forces.** • **Identify one type of surface feature or landform in Georgia and how it was formed.**	• **Picture Communication Exchange System (PECS)** • **Picture symbols** • **Picture Schedule** • **Behavior plan**
3. IDENTIFY THE INSTRUCTIONAL TASKS.		
What are the instructional tasks planned for all students?	**How can the student actively participate in the instructional tasks?**	**Which specific supports would help the student access the tasks?**
• **Read the chapter in the science book about volcanoes and discuss constructive and destructive forces.** • **Draw a before and after picture and label an example of a constructive force and a destructive force showing the effects of the forces.** • **Produce or obtain a brochure about some of the landforms (surface features) of Georgia that are examples of a constructive force. Explain why these are called constructive forces according to how the constructive force changed the surface of the earth.**	• **Utilize the computer to listen to Literacy Starter Book: Volcanoes.** • **Use picture symbols to add to the class discussion.** • **Complete sentences in a folder activity by attaching the end of each sentence to the correct side of the chart (i.e., constructive and destructive).** • **Pick out and paste pictures of Georgia landforms onto the brochure and type the text on a computer following a model or choose pre-written text to paste as text.**	• **Literacy Starter Book on CD-Rom: Volcanoes** *(Don Johnston, Inc.)* • **Picture symbols of volcanoes, earthquakes, sand dunes, river, rain** • **Folder with hook and loop tape with picture symbols grouped into beginning and ending of sentences about constructive and destructive forces (e.g., volcanoes make mountains, volcanoes can tear down mountains).** • **Pictures of landforms in Georgia, those found in other parts of the country, and pictures of things other than landforms.**

4. TARGET SPECIFIC OBJECTIVES FROM THE IEP TO ADDRESS DURING THE UNIT.

Which instructional tasks provide the opportunity to work on objectives?	Which standards based IEP objectives can be taught and practiced within the instructional tasks?	What other IEP objectives can be taught and practiced within the instructional tasks?
• Read the chapter science about volcanoes and discuss constructive and destructive forces. • Draw a before and after picture and label an example of a constructive force and a destructive force showing the effects of the forces. • Produce or obtain a brochure about some of the landforms (surface features) of Georgia that are examples of a constructive force. • Make a model of destructive processes to explain the cause and effect of these forces and to demonstrate how these processes break down the earth.	• Identify picture symbols when participating in classroom discussions. • Match pictures to concepts when completing the folder activity as well as identifying picture symbols. • Match pictures to concepts when completing brochure.	• Complete assigned tasks in activities. • Maintain appropriate behavior during activities.

Sample of completed folder activity for Science activity

Various Methods to Access The Standard

- ❖ Student will identify constructive/destructive forces of nature using picture symbols and/or words to complete sentences related to the processes.

- ➢ Student will identify forces of nature by using picture symbols and matching constructive/destructive forces to a model to complete sentences related to the processes.

- ✓ Student will choose between picture/tactile symbols of build up (constructive) and knock down (destructive) to correctly identify forces of nature. Teacher will use real materials (e.g., fan for wind, sand) to demonstrate the process. Student can utilize 2 switch AAC device with build up/knock down symbols to indicate choice.

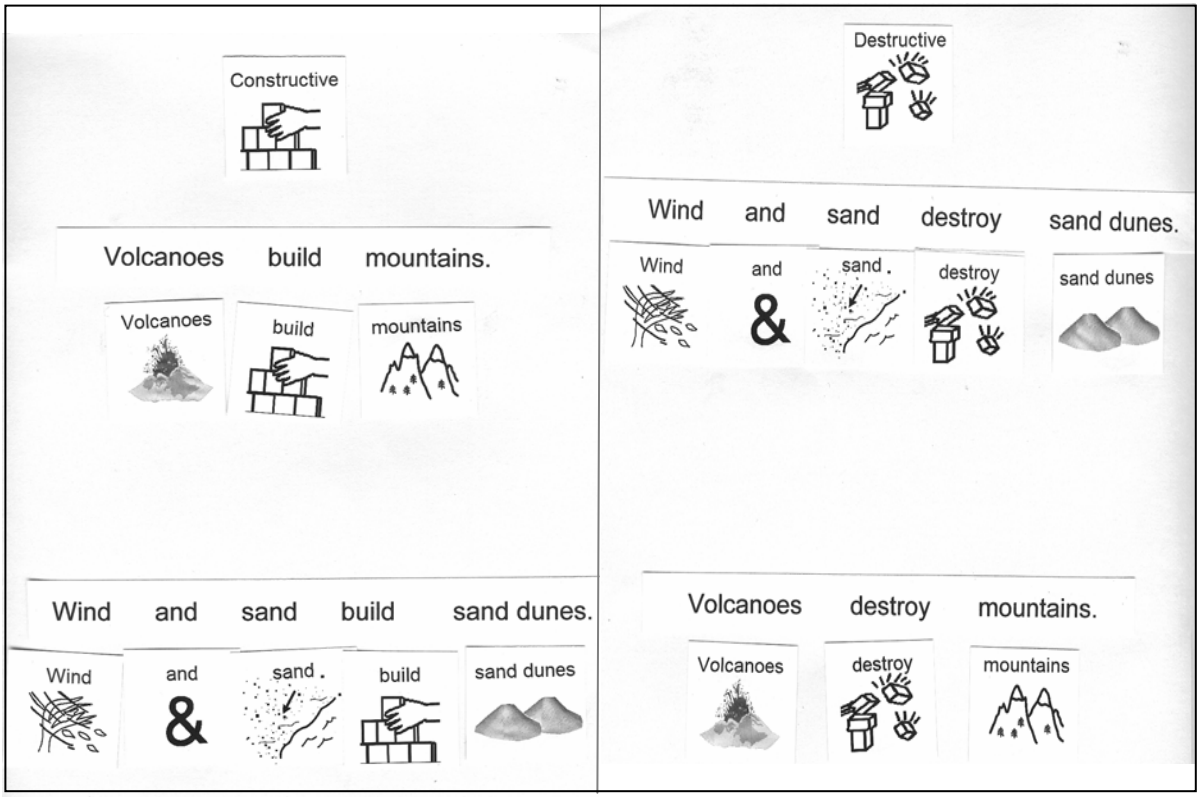


Figure 3

1. IDENTIFY THE STANDARD(S) THE INSTRUCTIONAL UNIT WILL ADDRESS.		
What is/are the standard(s)?	**What are the grade level elements?**	**What is/are the Big Idea(s) of the standard?**
ELA6R1 The student demonstrates comprehension and shows evidence of a warranted and responsible explanation of a variety of literary and informational texts. The texts are of the quality and complexity utilized by 5th Grade students.	**For literary texts, the student identifies the characteristics of various genres and produces evidence of reading that:** **c. Identifies and analyzes the similarities and differences between a narrative text and its film or play version.**	• **The student demonstrates comprehension.** • **The student identifies different genres.**

2. DEFINE THE EXPECTED RESULTS OF INSTRUCTION FROM THE INSTRUCTIONAL UNIT.		
What is every (general education) student expected to learn by the end of the instructional unit?	**What will be the focus of direct instruction and monitoring for the student with significant cognitive disabilities?**	**What supports have been identified on the student's IEP?**
• **Characteristics of narrative text and film version** • **Compare and contrast both genres**	• **Identify book and film** • **Express preference and give reason**	• **AAC Device/Communication System** • **Picture symbols** • **Picture schedule** • **Behavior plan**

3. IDENTIFY THE INSTRUCTIONAL TASKS.		
What are the instructional tasks planned for all students?	**How can the student actively participate in the instructional tasks?**	**Which specific supports would help the student access the tasks?**
• **Read one of the *Harry Potter* books together in class.** • **List main characters and settings from the book as well as what they think characters/settings look like**	• **Listen as book is read, utilizing photos of the main characters to follow along** • **Given choices, decide what the main characters' hair, eyes, and clothes might look like.**	• **Pictures of main characters from the book.** • **Graphic Word Processing software with voice output**

3. IDENTIFY THE INSTRUCTIONAL TASKS. (continued)		
What are the instructional tasks planned for all students?	**How can the student actively participate in the instructional tasks?**	**Which specific supports would help the student access the tasks?**
• **Watch one of the *Harry Potter* movies.** • **List main characters and settings from the movie and what each character/setting looked like.** • **Write a short movie review comparing and contrasting the book and movie.**	• **Watch one of the *Harry Potter* movies.** • **Given choices describe what the main characters' hair, eyes, and clothes looked like.** • **Use picture symbols to tell what student liked about the book and movie.** • **Use picture symbols to write a book and movie review.**	• **Photos of main characters downloaded from the internet or from calendars, advertisements, etc.** • **Graphic Word Processing software with voice output** • **Watch the movie and read the story at the same time, chapter by chapter, to be able to make immediate comparisons between the two genres.**

4. TARGET SPECIFIC OBJECTIVES FROM THE IEP TO ADDRESS DURING THE UNIT.		
Which instructional tasks provide the opportunity to work on objectives?	**Which standards based IEP objectives can be taught and practiced within the instructional tasks?**	**What other IEP objectives can be taught and practiced within the instructional tasks?**
1. Read *Harry Potter* together in class. **2. List main characters and settings from the book and describe what each character/setting looks like.** **3. Watch the movie, *Harry Potter*.** **4. List main characters and settings from the movie and describe main characters/settings.** **5. Write a short movie review comparing and contrasting the book and movie.**	• **Identify picture symbols and match pictures to concepts.** • **Initiate communication**	• **Maintain appropriate behavior.** • **Complete assigned task.**

Sample of writing in English Language Arts using point & click graphic word processor

Various Methods to Access The Standard

- ❖ Student will review the movie and book by writing sentences to describe each, using print or picture symbols through writing or computer program.

- ➢ Student will review the movie and book by choosing picture symbols on a movie/book report sheet to describe the movie/book. Students can mark on the sheet with writing utensil, Bingo marker, hand-held stamper, or stickers.

- ✓ Student will review movie and book by indicating how they feel about specific characters/plots of the movie/book: happy/sad funny/scary, utilizing a choice of picture/tactile symbols mounted on a voice output AAC device.

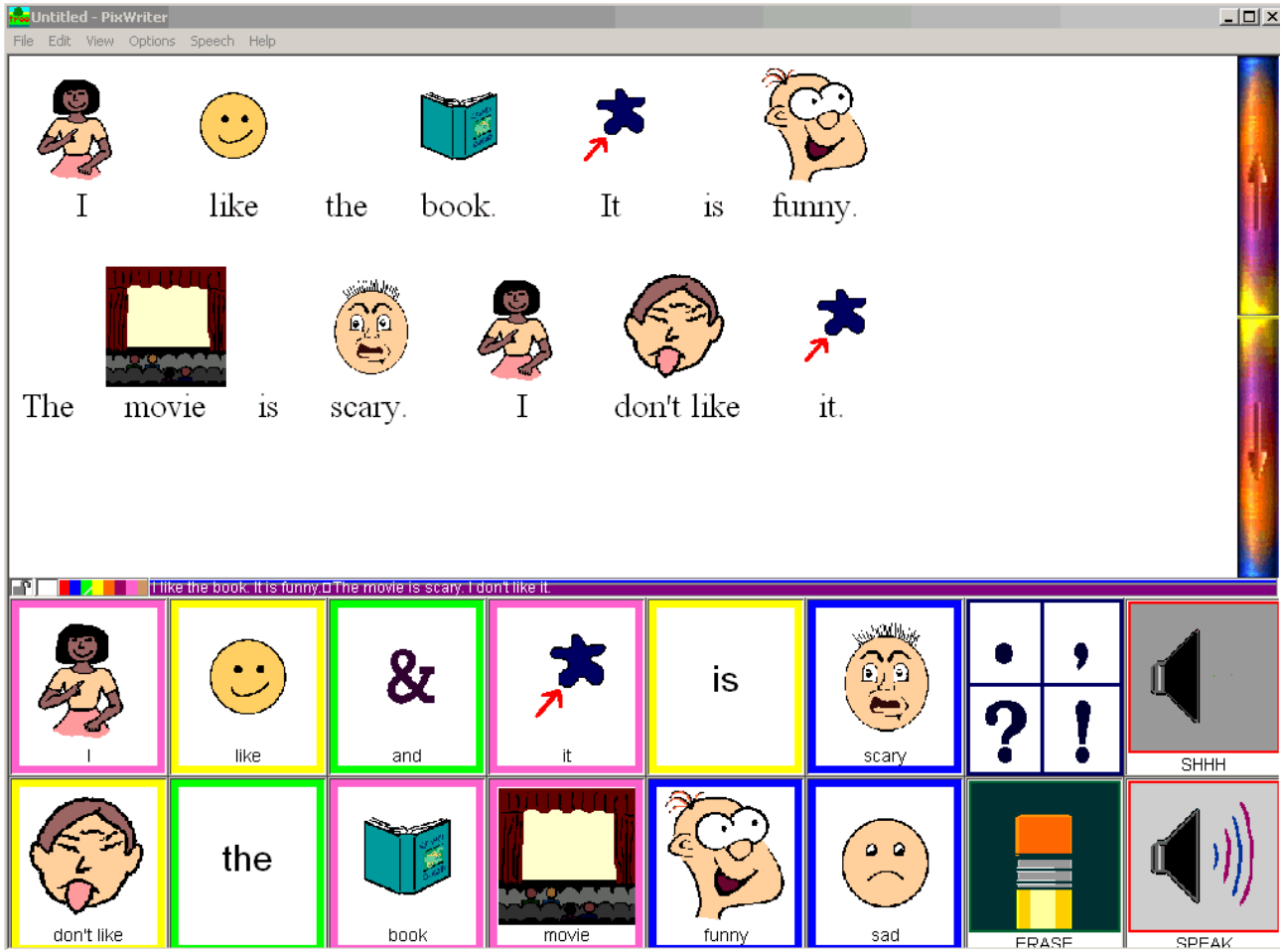


Figure 4

Figure 8 – Sample of Tanner's work for English Language Arts

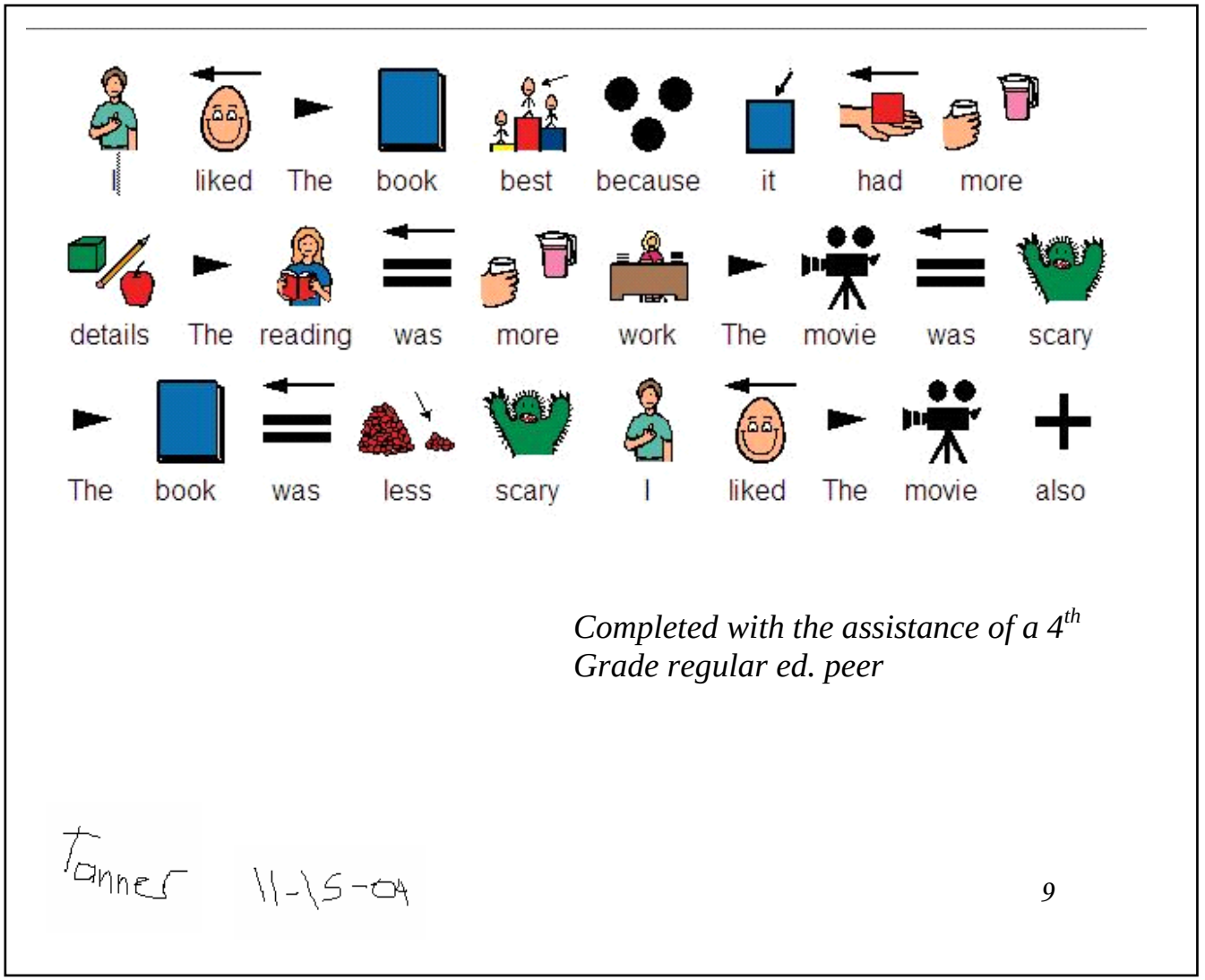


Figure 5

CLAIRE

Student Description

Claire is a 16 year old high school student with a profound intellectual disability. She is nonverbal with her only consistent response being a startle upon hearing a noise. However, she does respond differently to her mother than others. She vocalizes, cries, and occasionally laughs but does not appear to do so in response to external stimuli. She differentiates light and dark, and sees objects with questionable perception. She is non-ambulatory, requiring someone push her wheelchair. Claire has movement of her upper extremities but does not appear to have purposeful and functional use (except banging on tray and knocking things off).

Present Level of Performance

Claire communicates inconsistently through crying and hypertonicity. She is provided with parts of objects to represent upcoming activities (e.g., a seat belt to represent bus ride). She requires objects, switches, single switch multiple message voice output device, and positioning devices as supports.

IEP Objectives

Claire's objectives include:

- Activate switch activated AAC device to make choices, comments
- Visually track left to right
- Cross mid-line with hands/arms
- Locate an object placed in front of her
- Reach, grasp, and release items appropriately

A typical instructional activity that Claire participates in is cooking. She participates by reaching and grasping the ingredients with necessary prompts and is helped to measure and put ingredients in the mixing bowl or blender. She works on visually tracking the mixing spoon as well as responding to her name. She touches a switch which activates the mixer or blender with the necessary prompts. Participating in the cooking also allows her to work on crossing mid-line and locating an object placed in front of her. Following is how Claire participates in a high school instructional activity geared to teach standards and grade level elements.

High School Reading Sample

1. IDENTIFY THE STANDARD(S) THE INSTRUCTIONAL UNIT WILL ADDRESS.		
What is/are the standard(s)?	**What are the grade level elements?**	**What is/are the Big Idea(s) of the standard?**
ELA 10 RL1 The student demonstrates comprehension by identifying evidence (e.g., diction, imagery, point of view, figurative language, symbolism, plot events and main ideas) in a variety of texts representative of different genres (e.g., poetry, prose [short story, novel, essay, biography], and drama) and using this evidence as the basis for interpretation.	• **Identifies and analyzes elements of poetry** • **Identifies, responds to, and analyzes the effects of sound: alliteration, end rhyme, internal rhyme** • **Identifies, responds to, and analyzes form: lyric poem, narrative poem, fixed form poem**	• **The student demonstrates comprehension.** • **The student identifies evidence of meaning.** • **The student reads poetry for enjoyment.**

2. DEFINE THE EXPECTED RESULTS OF INSTRUCTION FROM THE INSTRUCTIONAL UNIT.		
What is every (general education) student expected to learn by the end of the instructional unit?	**What will be the focus of direct instruction and monitoring for the student with significant cognitive disabilities?**	**What supports have been identified on the student's IEP?**
• **Analyze the effects of sound, form, syntax, and figurative language as related to the meaning of the poem** • **Identify evidence from the text that assists in understanding** • **Apply knowledge of the structure of the poem as it relates to the meaning**	• **Identify the vocabulary in the poem using tactile cues (with prompting)** • **Identify features of a poem (e.g. rhyme, repeated line)** • **Read lines from a poem using AAC device (with prompting)**	• **Objects or tactile symbols** • **Single switch multiple message AAC device** • **Positioning devices** • **Prompt hierarchy (least to most) to locate, reach, grasp, and release** • **Touch cues** • **Provide hand under hand support if full physical guidance is required**

3. IDENTIFY THE INSTRUCTIONAL TASKS.		
What are the instructional tasks planned for all students?	**How can the student actively participate in the instructional tasks?**	**Which specific supports would help the student access the tasks?**
• **Students will identify sound, form, and structure of poems and watch for them while reading *The Odyssey*** • **Students will read lines from the poem aloud in class** • **Following class discussion on the structure of poetry, students will recreate their own adapted version of *The Odyssey* utilizing the form of their choice**	• **Claire will be taught the structure of poetry by:** ➢ **reaching for and holding tactile symbol/items related to the poem during the storyboard, interactive version of the Wishbone Classic, *The Odyssey*** ➢ **activating her AAC device upon cue/prompt to give the repeated line from *The Odyssey Revisited Rap* PowerPoint**	• **Switch activated AAC device with multiple messages (e.g. Step by Step)** • **Objects/props/tactile symbols representing characters and scenes from the play** • **Wishbone Classic book version of *The Odyssey* (high interest, low readability story form of the poem by Homer)** • **PowerPoint version, *The Odyssey Revisited Rap* for use with a single switch**

4. TARGET SPECIFIC OBJECTIVES FROM THE IEP TO ADDRESS DURING THE UNIT.

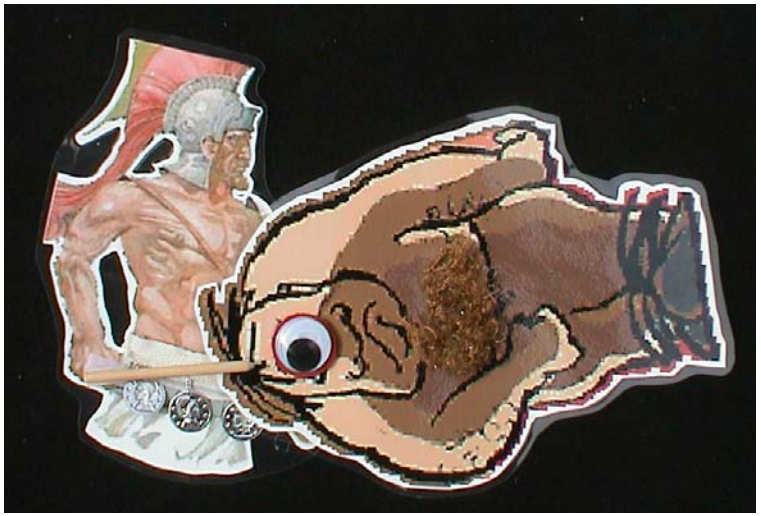
Which instructional tasks provide the opportunity to work on objectives?	Which standards based IEP objectives can be taught and practiced within the instructional tasks?	What other IEP objectives can be taught and practiced within the instructional tasks?
• **Students will identify the sound, form, and structure of poems and watch for them while reading *The Odyssey*** • **Students are to read lines from the poem aloud in class** • **Following class discussion on the structure of poetry, students will recreate their own adapted version of *The Odyssey* utilizing the form of their choice**	• **Show comprehension of basic concepts related to *The Odyssey* (e.g. identify King Odysseus, Cyclops) by matching to sample when given a choice of two answers, utilizing a switch activated AAC device and tactile objects/items** • **Indicate comprehension by predicting the repeated line of the adapted poem and activating her switch to say the line with her AAC device.**	• **Reach, grasp, and release items when picking up the items/tactile symbols related to the play** • **Cross mid-line to pick up items/tactile symbols set off to the side.** • **Activate switch activated AAC device to make choices, comments**

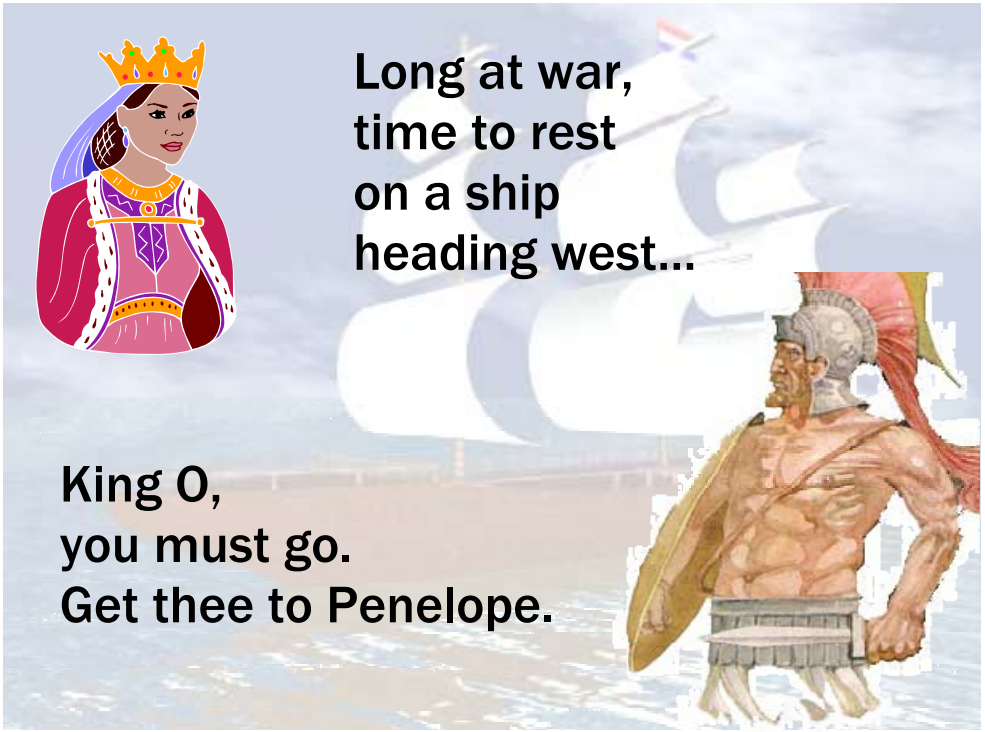
Various Methods to Access The Standard

- ❖ Student will show comprehension of concepts related to *The Odyssey* by sequencing events of the poem, utilizing print and picture symbols and/or computer software activities (e.g. Intellitools Classroom Suite).

- ➢ Student will show comprehension of concepts related to *The Odyssey* by selecting appropriate pictures of characters, and/or scenes from the poem when given an array from which to choose.

- ✓ Student will show comprehension of basic concepts related to *The Odyssey* by predicting when to press a switch to say the repeated line, "King O, you must go…" in the PowerPoint version, *The Odyssey Revisited Rap*, utilizing a switch activated AAC device.





The Odyssey Revisited Rap PowerPoint and tactile Odyssey symbols created by Jessie Moreau, M.Ed., NBCT, 2005

Appendix B

Pathways to Learning for Students with Significant Cognitive Challenges

(Anne Denham)

GPAT Assistive Technology Devices for Reading, Writing & Math

Pathways to Learning for Students with Cognitive Challenges

CAST emphasizes the fact that all learners differ across networks with strengths and weaknesses that make each learner unique. Teachers must dig deep to reach these networks so that learners with multiple challenges have a pathway to learning uniquely suited to their learning strengths and needs. The results of using this approach can be astounding for *all students* along the continuum as each learner utilizes his or her strengths.

CAST (2002) draws upon the research of neuroscience that identifies three interconnected brain networks that control the path to learning, and carries these networks into the concepts and theory behind the Universal Design for Learning (UDL):

- **Recognition networks** that receive and analyze information
  - The "what" of learning which interpret patterns of sound, light, taste, smell, and touch.
    - This has implications for the way information is presented.
- **Strategic networks** that are specialized to plan and execute actions
  - The "how" of learning which includes mental and motor patterns.
    - This has implications for student's actions and expression.
- **Affective networks** that are specialized to evaluate and set priorities
  - The "why" of learning which reflect emotion and motivation.
    - This has implications for the ways we engage students.

The following material provides suggested pathways for students as they access the general curriculum. UDL can be reflected in the way information is presented, students are expected to express themselves, and how students are engaged in learning.

References

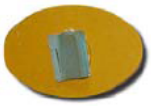
CAST (n.d.). Retrieved January 5, 2004, from http://www.cast.org

Rose, D., and Meyer, A. (2002). Teaching Every Student in the Digital Age: Universal Design for Learning. Alexandria, NA: Association for Supervision and Curriculum Development.

Pathways to Reading for Students with Cognitive Challenges

Multiple, flexible means of presentation, expression and apprenticeship, and multiple, flexible options for engagement (CAST)

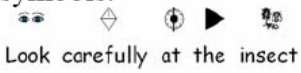
One starting point for accessibility is to have all materials digitally available which facilitates the ability of the user, both teacher and student, to manipulate and utilize appropriate materials, e.g. large print, graphical text, audio, etc.

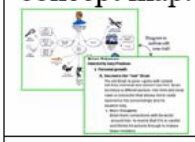
Read by … or read using …	Pathways to reading in all areas of the curriculum
… listening. 	• Listen to someone read (teacher, volunteer, peer). • Listen to a tape. • Listen to a digital book or electronic text.
… exploring objects, or props.	• Provide objects connected to content material to support the reading experience – read with your hands. • Use objects to "read" the text – place the objects in order to tell the story, or give information about the concept being taught. Take a digital picture to record a snapshot of the event. • Use puppets – finger puppets, characters mounted on Popsicle sticks. • Mount symbols, pictures or tactile objects that represent concepts being taught through a textbook. • Provide a "fact bag/basket" or "story bag" – a collection of items representing the written material (Dacey, 2002).
… tactile cues or symbols.  Book (TSBVI)	• Textured cues or symbols representing characters and events from a story, or information from a text book. These cues can provide options for communication about the story or information (Texas School for the Blind and Visually Impaired, TSBVI). • Read with a Story Grammar Marker (Mindwing Concepts, 2002). It is a hands-on manipulative tool that represents the essential components of a story; the Marker prompts students to remember the story sequence, and could provide grounding to the literacy process. The ThemeMaker (MindWing Concepts, 2002) is for use with curriculum material.
… responding to spoken text (change in facial expression).	• Watch for changes in facial expression or body posture.
… reading an adapted book (simplified content).	• Take a book apart and place pages in page protectors. Add page turners/fluffers as necessary (Dacey, 2003). • Add textures and objects to the pages. Use puff paint to outline graphics or underline text. • Use highlighter or highlighter strip to highlight words.

Denham, A. (2004). Pathways to Learning for Students with Cognitive Challenges: Reading, Writing and Presenting. Interdisciplinary Human Development Institute, University of Kentucky. [Online] Available: http://www.ihdi.uky.edu/IEI/

Read by … or read using …	Pathways to reading in all areas of the curriculum
… turning a page.	• Turn pages using a page fluffer, paper clips, or weather stripping to assist with motor issues. (Creative Communicating).
… textured graphics.	• Create a story in textured pictures. • Create content material in textured pictures. For discussion on government, build a textured graphic of a flag.
… pointing to a symbol representing the topic.	• Create cards with symbols on them representing people, places, or events. Use Boardmaker (Mayer Johnson) or Writing with Symbols (Widgit) to create the cards.
… images.	• Use an inquiry box (Dacey, 2002) to explore a story or facts about a topic. • Create a book of images from the story or content material.
… symbols. 	• Use symbols to represent material that is not actually present. • Manipulate laminated symbols with Velcro on a storyboard.
… by discussing drawing or creating. 	• Discuss a book illustration or student work. • Read a sentence about the work – make it auditory, use symbols, make it tactile – make a cue.
… augmentative communication – 	• Use switches to support the reading process. Layer facts or information for multiple access. • Use communication displays to read information. • Repeating a sentence using a communication device. • Read a passage. • Include video clips (Speaking Dynamically Pro, Don Johnston,) as support for reading.
… using sign language 	• Manually sign a story or reading passage. • Use manual sign for emphasis. • Co-sign (provide the manual sign within or under the hand of the individual. The individual is reading or experiencing the manual signs.
… using Braille 	• Read using TACK-TILES, a system of Braille using LEGO-type building blocks. • Read using Braille.
… repeating lines.	• Repeating a line from a story – use graphics, sentence strips, augmentative communication.

Denham, A. (2004). Pathways to Learning for Students with Cognitive Challenges: Reading, Writing and Presenting. Interdisciplinary Human Development Institute, University of Kentucky. [Online] Available: http://www.ihdi.uky.edu/IEI/

Read by … or read using …	Pathways to reading in all areas of the curriculum
… a sentence strip.	• Read a sentence strip to go with a story. • Make it tactile. • Make it auditory using a communication device. .
… using technology. 	• Create a story or content material with Microsoft PowerPoint - a talking book. • Videotape a story; add captions and audio. • Convert digital text to MP3 (textHELP!, 2002). Read a book! • Read photos with a description using an alt tag. • Create dynamic displays for communication. • Use multi-media tools to create interactive documents for student use, e.g. Classroom Suite, IntelliTools.
… symbols or images supported with text. 	• Read using symbols – a book, a summary, a sentence, a word. Read using the computer, read using the printed page, read using a switch. • Enlarge the graphic, make it tactile. • Keep up with the news (Symbol World, Widgit). • Read class material.
… text supported with symbols. 	• Read text supported with symbols read it on paper or on the computer with audio and highlighting. • Emphasize the text, reduce the size of the graphic. • Eliminate the graphic to reduce the level of support.
… text supported with photos. pictures, or sounds. 	• Make text come alive with the use of photos. • Add sound. • Add video.
… a text-reader. 	• Use digital text and read with a text reader. • Read from the web, or cut and paste text into a text reader. • Read from scanned material. • Search for electronic text from non-copyrighted material.
… just a few words.	• Select words from a passage that students can read, highlight the words. • Create material that has a reduced number of words in simple language. • Read words of high interest.
… summarized text.	• Summarize the text – use the auto-summarize feature of the word processor. • Write a few sentences from the focus material.

Read by … or read using …	Pathways to reading in all areas of the curriculum
… an outline or a visual concept map. 	• Read an outline of the material highlighting key points. • Provide a concept map or graphic organizer. • Give it audio.
… text presented at lower reading level.	• Present grade level content at a lower reading level. • Start-to-finish readers (Don Johnston)
… getting help with a word. 	• Using an individual scanner for occasional words. • Use a handheld dictionary or speller. • Use a Personal Digital Assistant (PDA).
… with more background information.	• Link to the web for further information about a topic before reading. • Provide background information.

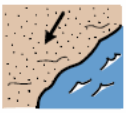
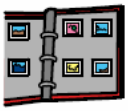
Pathways to Writing for Students with Cognitive Challenges

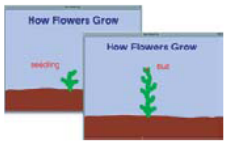
Multiple, flexible means of presentation, expression and apprenticeship, and multiple, flexible options for engagement (CAST)

One starting point for accessibility is to have all materials digitally available which facilitates the ability of the user, both teacher and student, to manipulate and utilize appropriate materials, e.g. large print, graphical text, audio, etc.

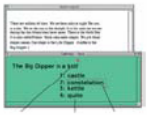
Write by … or write using …	Pathways to writing in all areas of the curriculum
… objects or manipulatives. 	• Use objects or manipulatives connected to content material to describe an event, give information, present a math problem or solution; use non-slip matting to keep them in place. • Use objects or manipulatives to "write" words or numbers – place the objects in order to "tell" the story, or give information about the concept being taught. • Collect the items in a bag or basket to represent a collection of information. Take a digital picture. • Collect items to describe a character in a novel or event in history. • Collect items to describe a process or manipulatives to demonstrate a sequence. • Pair the objects with words, symbols, or numbers. • Take a digital picture as a snapshot of the "text." • Have a peer scribe to record the event. • Provide a choice of two objects to give a "written" answer to a question – accept direct selection, gesture, eye gaze or other mode of student communication.
… tactile cues or symbols.  (Texas School for the Blind)	• Textured cues or symbols can represent events or characters from a story, or information from a text book. These cues can provide a record of a story, an opinion, facts or information. They can provide a means of communication about the writing. • Mount tactile cues or objects that represent concepts being taught on a background using Velcro as a method to "write." Allow student to manipulate these. Have a peer add words or a number sentence. • Sequence or organize thoughts and information using graphic symbols for a variety of audiences and purposes. • Provide a choice of two tactile symbols to give a "written" answer to a question – accept direct selection, gesture, eye gaze or other mode of student communication. • Respond to literature or class material using tactile cues or symbols.

Denham, A. (2004). Pathways to Learning for Students with Cognitive Challenges: Reading, Writing and Presenting. Interdisciplinary Human Development Institute, University of Kentucky. [Online] Available: http://www.ihdi.uky.edu/IEI/

Write by … or write using …	Pathways to writing in all areas of the curriculum
…tactile cues  great job / needs more work	• Use the student's mode of communication to make a "written" comment when an adult or peer edits work with a student.
… tactile materials.    (Wikki Stix, Nordin)	• Explore sand and tactile materials to provide kinesthetic feedback. Use them to draw or write numbers. • Use finger paint as a means of expression - make a print and publish the image. • Write with Wikki Stix - create tactile graphics which adhere to almost any smooth surface and provide a raised line effect. Use them to form numbers, or as points or lines on a graphing map (Dacey).
… textured graphics.	• Write with textured pictures. The student can select pictures that are relevant to a process or an event. Make a collection or place them in order. Add Velcro or magnets to the back and mount them on an appropriate surface. • Provide a selection for the student to make a choice as to an answer or an opinion. • Arrange a selection of graphics to write a poem, or give information. Arrange numbers or patterns.
… images. 	• Write using a photograph. • Generate a simple label for the photograph or image and use synthesized speech to describe it (Karen Sturm). • "Publish" it for others to read. • Use an inquiry box to publish a student story or facts about a topic. • "Publish" the work and display it within page protectors and have page separators or fluffers to allow access for those with physical challenges. • Create a book of images from the story or content material. Make the images digital and provide ALT tags so that a description is available to individuals who are visually impaired. • Create a book of patterns; make it tactile.
… using stamps. 	• Write with a name stamp; use scented ink. • Write the date with a date stamp. • Write using picture stamps. • Write using number or fraction stamps. • Use coin stamps. • Write using stickers.

Write by … or write using …	Pathways to writing in all areas of the curriculum
 Fraction Stamps, Primary Concepts	• Write numbers by arranging cards. • Write using a stencil. • Trace or copy a word or number.
… by drawing or creating.    (BuildAbility, DonJohnston)	• Create a drawing or collage about a topic. Add labels or audio information. • Create a pattern in math; make it tactile. • Read a sentence about the work – make it auditory, use symbols, make it tactile. • Use drawing software such as Microsoft Paint, or Kid Pix Studio. • Write using the multimedia properties of BuildAbility that uses Drawmation™ technology – the drawing is recreated by the click of a button and creates an animated product or movie of the strokes. Text, sound and speech can be added. The properties of the software can be adjusted to compliment student need. Create a pattern and watch it grow.
… word walls.	• Provide words for a word wall (Dacey, 2002). Back the words with Velcro or magnets. • Make a math wall with numbers, signs and denominators.
… augmentative communication (AAC).  (Abelnet)	• Provide background knowledge; provide opportunities for engagement and active participation in the literary process (Karen Erikson). • Use communication displays to read information. • Use the dynamic properties of AAC devices to write and read – create prose, poetry, lists, journals, numbers, etc. • Use an on-screen keyboard to write. • Use word prediction, abbreviation expansion, to speed up the writing process. • Use switches - layer facts or information for multiple sentences.
… using sign language 	• Manually sign a story as a means of writing. Videotape the event. • Use sign language for math.
…using Braille.  (TACK-TILES)	• Write using TACK-TILES or Braille. Create sentences with these materials or use the overlay created for IntelliKeys (IntelliTools).

Write by … or write using …	Pathways to writing in all areas of the curriculum
… a sentence strip. I saw a cumulus cloud.	• Choose a sentence strip to go with a story or math concept. • Support it with a graphic. • Make it tactile with puff paint or glue. • Make it auditory using a single communication aid.
… text supported with photos. pictures, or sounds. 	• Make text come alive with the use of photos. • Add sound. • Add video.
… symbols or images supported with text.   Laminated Boardmaker graphics with Velcro.	• Write using digital symbols – a word, a sentence. • Print the work and texture to the symbol creating a textured product. • Prepare a grid for the student to select symbols to create a sentence. Customize it from simple to more complex reflecting individual need and the content being taught. • Allow the student to hear their work. • Customize features to manipulate the size, type and color of the font or graphic. • Create a custom "environment" (Writing with Symbols 2000) that allows further independence. • Use the scanning properties and switch access. • Use graphic software with different input methods – use an alternate keyboard, joystick, trackball. • Manipulate laminated symbols with Velcro on a storyboard. • Write using symbols that can be manipulated and mounted.
… using technology.   IntelliKeys, IntelliTools	• Create a story or content material with Microsoft PowerPoint - a talking book (Dacey, 2002). Import graphics and add voice output; create a repeated math pattern. • Videotape a story; add captions and audio. • Read photos with a description using an ALT tag. • Create dynamic displays for communication. • Use multi-media tools to create interactive documents for student use, e.g. Classroom Suite (IntelliTools). Build in supports according to student need - speech output, single-switch scanning. • Write using IntelliKeys with a custom overlay related to the topic. Use word processors such as IntellliTalk 3 (IntelliTools) that allows students to combine graphics, text, and speech to support and enhance writing skills, or use software with the support of symbols. • Use a text reader to help the writing process.

Write by … or write using …	Pathways to writing in all areas of the curriculum
 All-Turn-It Spinner, AbleNet	• Write using a sentence starter or the start of a math problem. • Use Microsoft Word Forms feature to create templates. • Use a Touch Window. • Use an On-screen keyboard. • Use a head mouse. • Use an eye-gaze system. • Use Discover:Switch (Don Johnston) allowing alternative access. • Use voice recognition. • Write a poem using the All-Turn-It Spinner (Abelnet) with a custom overlay displaying words or facts from a concept being worked on in class. Activate it with a switch. • Create an overlay for a math activity.
… virtual manipulatives for working with numbers..	• Use websites that offer virtual manipulatives for math to provide models and graphical support to learning. • Use software that supports virtual manipulatives, e.g. IntelliMathics, IntelliTools. Create interactive displays or allow student to manipulate the tools. It is single switch accessible.
… accessibility features.	• Activate the accessibility features that come with both Mac and Windows platforms to customize access to the computer.
… word prediction software.  (textHELP!)  Co:Writer, Don Johnston.	• Use word prediction, word completion, macros, and abbreviation/expansion to create written material for those students who take more time to complete work or where access may be an issue (textHELP!). • Create dictionaries that support curriculum topics to support student vocabulary (Co:Writer). • Use word prediction with a portable keyboard.
… an outline or a visual concept map.  (Inspiration)	• Create a concept map or graphic organizer to support math concepts. • Create an outline form to support writing. • Add audio.
… using a pencil	• Use a pencil with a pencil grip. • Use highlighter. • Write using scented pens for sensory stimulation. • Use raised lines for both letters and numbers. Add puff paint to the lines; use embossed graph paper. • Write on heat sensitive paper.

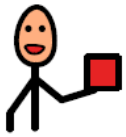
Write by … or write using …	Pathways to writing in all areas of the curriculum
… just a few words.	• Write using a select number of words. • Use magnetic words and arrange them to give the desired information.
… getting help with a word.	• Use a picture dictionary for support. • Use a handheld dictionary or speller to get help on a word. • Use a Personal Digital Assistant (PDA).
… with more background information.	• Link to the web for further information about a topic before writing. • Provide background information.

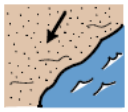
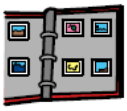
Denham, A. (2004). Pathways to Learning for Students with Cognitive Challenges: Reading, Writing and Presenting. Interdisciplinary Human Development Institute, University of Kentucky. [Online] Available: http://www.ihdi.uky.edu/IEI/

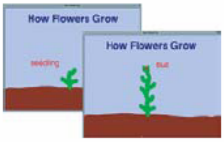
Pathways to Presenting for Students with Cognitive Challenges

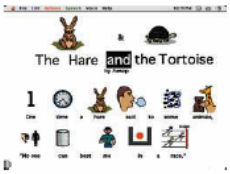
Multiple, flexible means of presentation, expression and apprenticeship, and multiple, flexible options for engagement (CAST)

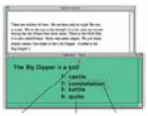
One starting point for accessibility is to have all materials digitally available which facilitates the ability of the user, both teacher and student, to manipulate and utilize appropriate materials, e.g. large print, graphical text, audio, etc.

Present by … or present using …	Pathways to presenting in all areas of the curriculum
… objects or manipulatives.  	• Use objects or manipulatives related to content material to describe an event, give information, or explain a math concept. • Use containers to display the objects or organize the information. • Add a graphic label to the display; have audio output available using a communication aid. Make sure the student can activate the message through the use of a switch as appropriate to the presentation. • Collect the items in a bag or basket to represent a collection of information. Take a digital picture. Have a print copy of the picture available and/or a digital copy with a text label or ALT tag. • Collect items to describe a character in a novel or event in history. • Collect items to describe a process or manipulatives to demonstrate a sequence. Display them in an organized manner. Add a graphic label to the display; have audio output available using a communication aid. Make sure the student can activate the message through the use of a switch as appropriate to the presentation. • Consider a "remnant box" (Dacey), a container to collect scraps of items related to the days activities. Use it as a means of creating a journal composed of objects. Organize the objects and place them into page protectors or display wallets or pockets. Put them into a 3-ring binder and add page fluffers/turners to help with motor issues. • Use objects or props as a means to support other methods of presentation.
… tactile cues or symbols.  (Texas School for the Blind)	• Textured cues or symbols can provide an opinion, fact or information. • Mount tactile cues or symbols on a background using Velcro as a means to anchor the cues. Have a peer add a written caption. Display them in an organized manner. Add a graphic label to the display; have audio output available using a communication aid.

Present by … or present using …	Pathways to presenting in all areas of the curriculum
	• Include ways that the student may be asked for more information or to answer a question in the student mode of communication.
… tactile materials.   (Wikki Stix, Nordin)	• Add tactile materials to provide kinesthetic feedback to a display. Use them to add emphasis to the display. • Write with Wikki Stix - Use them to form numbers, or as points or lines on a graphing map (Dacey). • Use tactile materials as a means to support other presentation types.
… textured graphics.	• Display information with textured pictures or charts in the form of a poster. The student can create pictures that are relevant to a process or share what they have learned. Display the graphics or place them in order. Add Velcro or magnets to the back and mount them on an appropriate surface. • Add a graphic label to the display or a texture; have audio output available using a communication aid. • Highlight information using WikkiStix, glue or puff paint. • Use a flashlight to highlight certain information.
… images. 	• Display information using photographs. Have them available in hard copy. Generate a simple label for the photograph or image with words or graphics; have audio available through a communication aid or tape with switch access if needed. • Display the work in poster form or within page protectors in a binder. Have page separators or "fluffers" to allow access for those with physical challenges. • Use an inquiry box to display student work. By manipulating the box, all sides are visible. Again, add captions, labels, and audio; color code information to help with accessibility. • Display the images in digital form; create audio captions; provide ALT tags so that a description is available to individuals who are visually impaired. • Create a book of patterns; make it tactile.
… using stamps. 	• Use stamps to add information to a display as appropriate. • Add a name with a name stamp; use scented ink. • Add a date with a date stamp.

Present by … or present using …	Pathways to presenting in all areas of the curriculum
 Fraction Stamps, Primary Concepts	• Add numbers with stamps.
… by drawing or collage.    (BuildAbility, DonJohnston)	• Create a drawing or collage about a topic; display the information on a poster. Add labels or audio information. • Create a pattern to explain a procedure; make it tactile. • Display a sentence about the work – make it auditory, use symbols, make it tactile. • Add a drawing to a presentation using drawing software such as Microsoft Paint, or Kid Pix Studio. • Create a presentation using the multimedia properties of BuildAbility that uses Drawmation™ technology. Import pictures or photographs and annotate the work with drawing strokes, text and audio.
… augmentative communication (AAC).  (AbleNet)	• Encourage students to use augmentative communication devices to make an oral report. Make sure students have had multiple opportunities to use the vocabulary during the course of instruction. Be sure there is a way for students to answer questions generated from the presentation. • Use communication aids - layer facts or information for multiple sentences which support the presentation.
… using sign language 	• Use manual sign as a way to present. Videotape the event. • Augment with other forms of presentation such as objects and graphics.
…using Braille.  (TACKTILES)	• Create written material to present using TACKTILES or Braille. Create sentences with these materials or use the overlay created for IntelliKeys (IntelliTools). • The use of IntelliKeys and a TACKTILE overlay paired with a talking word processor provides audio or graphics.
… a sentence strip. I saw a cumulus cloud.	• Use sentence strips to present information or a process. Have students read the information or display it on a poster. • Support it with a graphic. • Make it tactile with puff paint or glue. • Make it auditory using a single communication aid.
… text supported with photos. pictures, or sounds.	• To make a poster more appealing use photos. • Add sound.

Present by … or present using …	Pathways to presenting in all areas of the curriculum
	• Add video.
… symbols or images supported with text.   Laminated Boardmaker graphics with Velcro.	• Create a poster sharing information with printed symbols. • Create a writing grid for the students to be more independent in producing written work. Customize it reflecting individual need and the content being presented. Read the graphics to make an oral presentation. • Keep it digital and the student can present with auditory support. Use a projector and enlarge the view so that the audience can see it clearly. • Remember to consider a variety of input methods – use an alternate keyboard, joystick, trackball, head mouse or touch window. • Manipulate laminated symbols on a storyboard by adding Velcro to the back. Use fabrics that will allow the Velcro to adhere. Use these to present material – facts or a process. • Write using symbols that can be manipulated and mounted.
… using technology.   IntelliKeys, IntelliTools	• Create a presentation using Microsoft PowerPoint. Import graphics and add voice output; use animation features. Use a single switch to advance the slides. • Help the student create a Microsoft Word document using word prediction tools and import graphics. Save it as a webpage. Once loaded on the server it can be viewed as a presentation on-line. The student can present the material orally or with a text reader. • Videotape a student completing a project; add captions and audio, and use it as a presentation. • Use multi-media tools to create interactive documents for student use, e.g. Classroom Suite (IntelliTools). Create a template and help students to add their work – words or pictures. Build in supports according to student need - speech output, single-switch scanning. • Write using IntelliKeys with a custom overlay related to the topic. Use word processors such as IntellliTalk 3 that allows students to combine graphics, text, and speech to support and enhance writing skills, or use software with the support of symbols. Print and mount the work. • Use a text reader to help the present the information. • Write using a sentence starter or the start of a math problem. Have student complete the information as a way of presentation.

Present by … or present using …	Pathways to presenting in all areas of the curriculum
 All-Turn-It Spinner, AbleNet	• Use a Touch Window to present facts. Hook the computer up to a projector to allow everyone to see. • Use an On-screen keyboard. • Use a head mouse. • Use an eye-gaze system to give information. • Use Discover:Switch (Don Johnston) allowing alternative access and a means to present information via an on-screen keyboard. • Use voice recognition to create written material. • Use the All-Turn-It Spinner with a custom overlay displaying words or facts from a concept being worked on in class. Activate it with a switch.
… virtual manipulatives for working with numbers..	• Use websites that offer virtual manipulatives for math to provide models for use during presentation. Have students invite participation from the audience to participate to see if they have understood the concept. • Use software that supports virtual manipulatives, e.g. IntelliMathics, IntelliTools. Create interactive displays or allow student to manipulate the tools. It is single switch accessible.
… accessibility features.	• Activate the accessibility features that come with both Mac and Windows platforms to customize access to the computer.
… word prediction software.  (textHELP!)  Co:Writer, Don Johnston.	• Use word prediction, word completion, macros, and abbreviation/expansion to create written material for display on posters etc.
… an outline or a visual concept map.  (Inspiration)	• Create a concept map as a means of presentation. Have the student focus on one part of the web for a presentation. • Create an outline form to support the presentation. • Add audio.
… using a pencil	• Use a pencil with a pencil grip to support student writing. • Use highlighter to highlight important facts. • Write using scented pens for sensory stimulation as the student prepares information. • Use raised lines for both letters and numbers. Add puff

Present by … or present using …	Pathways to presenting in all areas of the curriculum
	paint to the lines; use embossed graph paper. • Write on heat sensitive paper and display the information.
… words.	• Give an oral report; make it just a few words. Supplement the oral report with a poster to support the speaker. • Record the presentation and play it using a tape player or computer so that it can be used as support if required. • Provide graphical support to the presenter as cues. • Provide objects or props as a means of support.
… with more background information.	• Link to the web for further information about a topic before writing. Provide a website for support to the listener / audience. • Provide background information by printing pictures or information for others to read. Make a poster with the information. • Create a custom overlay to be used with an adaptive keyboard, such as IntelliKeys to give background information on the presentation topic.

Please Note

This document was developed in part by the Inclusive Education Initiative (IEI), a grant funded by the Kentucky Developmental Disabilities Planning Council (DDPC). The content and opinions expressed herein do not necessarily reflect the position and policy of the DDPC and no official endorsement should be inferred.

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Assistive Technology Devices for Struggling Readers

This document contains information on the range of assistive technology devices that can be used by struggling readers to increase their decoding, fluency, and comprehension skills. Many of these devices also support increased efficiency, productivity, independence, and enjoyment. In most instances, students use a combination of assistive technology devices to meet their reading needs. The types of assistive technology devices used to support reading are determined by individual student abilities and needs as well as the required reading tasks across all instructional environments.

In this document, assistive technology devices are organized into various categories based on the primary features or applications of the technology. Moreover, the age ranges for which the devices are appropriate are identified in the following categories: elementary, middle, and high school. Lastly, tools are linked to the various reading skills addressed in the Georgia Performance Standards. The skills areas are briefly defined below. It is recommended that individuals utilizing this document refer to the standards to determine the specific skills that are addressed at each grade level.

The following skills areas are addressed in this document:

- Phonemic Awareness: Phonemic awareness refers to the ability to focus on and manipulate phonemes in spoken words.
- Phonics: Phonics is the ability to associate sounds with letters and use these sounds to form words.
- Vocabulary: Vocabulary includes identifying the meanings of words and using those words appropriately within context.
- Comprehension: Comprehension is the complex cognitive process involving the intentional interaction between reader and text to convey meaning.
- Fluency: Fluency is the effortless, automatic ability to read words in connected text.

Additional information about the assistive technology devices referenced in this document is available on the Georgia Project for Assistive Technology's website at http://www.gpat.org. Additional information about the Georgia Performance Standards is available on the Georgia Department of Educations website at http://doe.k12.ga.us.

Compensatory Tools

Category	Examples	Age Range			Skill Area				
		Elementary	Middle School	High School	Phonemic Awareness	Phonics	Vocabulary	Comprehension	Fluency
Positioning Aids	Book Stands / Slant boards (Pocket Full of Therapy, Sammons Preston Rolyan)	X	X	X					X
	Teacher-made Book Stand/Slant board	X	X	X					X
Tracking Aids	Reading Window (teacher made)	X	X	X					X
	EZC Reader / Reading Helper (Really Good Stuff)	X	X	X					X
	Bar Magnifier (Independent Living Aids)	X	X	X					X
Contrast Aids	Highlighter / Highlighting Tape (Crystal Springs)	X	X	X			X		X
	Colored Overlays (National Reading Styles Institute, See It Right)	X	X	X					X
	Colored Filter Strips (Onion Mountain Technology)	X	X	X					X
Word Identification Aids	Children's Talking Dictionary & Spell Corrector (Franklin)	X					X	X	
	Merriam Webster Speaking Dictionary and Thesaurus (Franklin)	X	X	X			X	X	
	Speaking Language Master (Franklin)	X	X	X			X	X	
	Reading Pen II (Wizcom)	X	X	X			X	X	
Standalone Magnification Aids	Closed circuit television systems (Telesensory)	X	X	X					X
	Bar magnifiers, page, pocket and stand magnifier (Maxi-Aids, LS&S)	X	X	X					X
	Binocular and monocular telescope (Maxi-Aids)	X	X	X					X
Alternate Format Books	Symbolized Text								
	▪ News-4-You (Weekly Boardmaker Newspaper)		X	X			X	X	
	Computer Books								
	▪ Start to Finish Literacy Starters (Don Johnston)	X	X	X			X	X	X
	▪ Start to Finish Books (Don Johnston)	X	X	X			X	X	X
	▪ Thinking Reader (Tom Snyder)		X	X			X	X	X
	Large Type Books	X	X	X				X	X

Category	Examples	Age Range			Skill Area				
		Elementary	Middle School	High School	Phonemic Awareness	Phonics	Vocabulary	Comprehension	Fluency
Alternate Format Books (Continued)	• Georgia Instructional Materials Center • American Printing House for the Blind-Louis Database								
	Braille • Georgia Instructional Materials Center) • American Printing House for the Blind (Louis Database)	X	X	X				X	X
	Electronic Text								
	▪ Project Gutenberg (Project Gutenberg)	X	X	X			X	X	
	▪ BookShare (Bookshare)	X	X	X			X	X	
	▪ Accessible Book Collection (Accessible Book Collection)	X	X	X			X	X	
	Auditory Text								
	▪ Recordings For the Blind & Dyslexic (RFB&D)	X	X	X			X	X	
	▪ Commercial sources	X	X	X			X	X	X
Text Readers	Auditory only								
	▪ Handi-Cassette II (American Printing House for the Blind)	X	X	X				X	
	▪ Digital Recorder	X	X	X				X	
	▪ Victor Reader series and software (HumanWare)	X	X	X				X	
	Visual and auditory								
	▪ ReadPlease Free 2003 (ReadPlease)	X	X	X			X	X	X
	▪ Talking Buddy (Amazing Software Products, Inc.)	X	X	X			X	X	X
	▪ Personal Digital Assistant - PDA (office supply store)	X	X	X			X	X	
	▪ TestTalker (Freedom Scientific)	X	X	X			X	X	X
Text Readers with Study Support	Read:OutLoud SOLO (Don Johnston)	X	X	X			X	X	X
	Read & Write (TextHelp)	X	X	X			X	X	X
Graphic Word Processors	Writing With Symbols (Mayer Johnson)	X	X	X			X	X	X
	Clicker (Crick Software)	X	X	X			X	X	X

Category	Examples	Age Range			Skill Area				
		Elementary	Middle School	High School	Phonemic Awareness	Phonics	Vocabulary	Comprehension	Fluency
	PixWriter (Slater Software)	X	X	X			X	X	
	IntelliTalk (IntelliTools)	X	X	X			X	X	X
Talking Word Processors	WriteOutLoud (Don Johnston)	X	X				X	X	X
	IntelliTalk (IntelliTools)	X	X				X	X	X
	Writing with Symbols 2000 (Mayer Johnson)	X	X				X	X	X
	Cast eReader (Don Johnston)	X	X	X			X	X	X
	Talking Word Processor (Premier Assistive Technology)	X	X	X			X	X	X
	Tex-Edit Plus (Trans Tex Software)	X	X	X			X	X	X
	Clicker (Crick Software)	X	X				X	X	X
Advanced Reading Aids	Kurzweil 3000 (Kurzweil Educational Systems)	X	X	X			X	X	X
	WYNN (Freedom Scientific)	X	X	X			X	X	X
	Read & Write Gold (TextHelp)		X	X			X	X	X
Screen Enlargement Software	ZoomText (AI Squared)	X	X	X					
	MAGic (Freedom Scientific)	X	X	X					
Screen Readers	JAWS (Freedom Scientific)	X	X	X			X	X	
	Window Eyes (GW Micro)	X	X	X			X	X	

Assistive Technology Devices for Writing

This document contains information on the range of assistive technology devices that can be used by struggling writers to increase the legibility, complexity, and accuracy of their written products. Many of these devices also support increased efficiency, productivity, and independence. In most instances, students use a combination of assistive technology devices to meet their writing needs. The types of assistive technology devices used to support writing are determined by individual student abilities and needs as well as the required writing tasks across all instructional environments.

In this document, assistive technology devices are organized into various categories based on the primary features or applications of the technology. Moreover, the age ranges for which the devices are appropriate are identified in the following categories: elementary, middle, and high school. Lastly, tools are linked to the various writing skills addressed in the Georgia Performance Standards. The skills areas are briefly defined below. It is recommended that individuals utilizing this document refer to the standards to determine the specific skills that are addressed at each grade level.

Writing Process

- Organizational Structure – Ideas are organized due to purpose (cause-effect, chronological) or genre (type of writing: persuasive, narrative, technical).
- Prewriting- Brainstorming- Ideas are generated based on the provided topic. In order to facilitate retention of these ideas, notes, outlines or concept maps may be used.
- Drafting –The ideas generated in the prewriting and brainstorming process are recorded by the student.
- Editing – The student's worked is checked for spelling, grammar, and mechanics errors. These errors are corrected.
- Revising – The draft is revised and this revision may include rewording sentences, adding details, and/or adding more content
- Use of Resources – The student uses a variety of resources to obtain facts related to the writing topic. This may include informational resources such as encyclopedias, Internet resources, literary books, or reference books such as dictionaries or thesauruses.

Conventions

- Grammar – Includes subject–verb agreement, sentence structure and complexity, parts of speech, and word usage.
- Mechanics – Includes punctuation (commas, semicolons, end marks), capitalization, and paragraph indentations.
- Spelling –Includes correct spelling of words used in the written product.
- Legibility – Refers to spacing, letter formation, and size. Refers to the readers' ability to read the written product.

Additional information about the assistive technology devices referenced in this document is available on the Georgia Project for Assistive Technology's website at http://www.gpat.org. Additional information about the Georgia Performance Standards is available on the Georgia Department of Education's website at http://doe.k12.ga.us.

Device Category	Examples	Age Range			Skill Area									
					Writing Process						Conventions of Writing			
		Elementary	Middle School	High School	Organizational Structure	Prewriting	Drafting	Revising	Editing	Use of Resources	Grammar	Mechanics	Spelling	Legibility
Positioning Aids	Slant boards, page holders (Pocket Full of Therapy, Therapy Shoppe)	X	X	X										X
	Dycem, book stands (Sammons Preston Rolyan, Onion Mountain Technology)	X	X	X										X
	Shelf liner/ nonslip mat (discount stores)	X	X	X										X
	Clipboards (office supply stores, discount stores)	X	X	X										X
Contrast Aids	Highlighter tape (Crystal Springs)	X	X	X									X	
	EZC Reader / Reading Helper (Really Good Stuff)	X	X	X									X	
	Colored overlays (National Reading Styles Institute, See It Right, Onion Mountain Technology)	X	X	X									X	
Adapted Writing Utensils	Pencils, pens, pencil grips (Onion Mountain Technology, Pocketful of Therapy, Sammons Preston, Beacon Ridge)	X	X	X										X
Adapted Paper	Paper: bold & raised lined (Onion Mountain Technology, Sammons Preston, Beacon Ridge, Pocket Full of Therapy)	X	X	X										X
Writing Guides	Writing guides (Independent Living Aids)	X	X	X										X
Personal Vocabulary / Spelling Dictionaries	Notebook (office supply stores, discount stores)	X	X	X									X	
	Quick Word Handbooks (Curriculum Associates)	X	X	X							X		X	
Hand-held Spellchecker	Children's Talking Dictionary & Spell Corrector (Franklin)	X								X	X		X	X

Device Category	Examples	Age Range			Skill Area									
					Writing Process						Conventions of Writing			
		Elementary	Middle School	High School	Organizational Structure	Prewriting	Drafting	Revising	Editing	Use of Resources	Grammar	Mechanics	Spelling	Legibility
	Merriam-Webster Speaking Dictionary & Thesaurus (Franklin)	X	X	X						X	X		X	
	Speaking Language Master (Franklin)	X	X	X						X	X	X	X	
Recorders	Handi-Cassette II (American Printing House for the Blind)	X	X	X		X								X
	Digital Recorder (office supply store)	X	X	X		X								X
Handheld Scanners	Notetaker (Don Johnston)	X	X	X										X
	Iris Pen (Onion Mountain Technology)	X	X	X										X
Print-based Graphic Organizers	Teacher-made materials	X	X	X	X	X	X							
	Printed documents from Inspiration, Visio, MS Word, etc.	X	X	X	X	X	X							
Portable Word Processor	AlphaSmart 3000 (AlphaSmart)	X	X	X			X	X	X				X	X
	Neo (AlphaSmart)	X	X	X			X	X	X				X	X
	Dana (AlphaSmart)	X	X	X			X	X	X				X	X
	Personal Digital Assistant – PDA (office supply stores)	X	X	X			X	X	X				X	X
	Laser PC6 (Perfect Solutions)	X	X	X			X	X	X				X	X
	CalcuScribe (CalcuScribe)	X	X	X			X	X	X				X	X
Concept/Webbing Applications	Inspiration (Inspiration)	X	X	X	X	X							X	X
	Kidspiration (Inspiration)	X			X	X							X	X
	Draft:Builder SOLO (Don Johnston)	X	X	X	X	X	X	X	X	X			X	X
	Visio (Microsoft)		X	X		X								X

Device Category	Examples	Age Range			Skill Area									
					Writing Process						Conventions of Writing			
		Elementary	Middle School	High School	Organizational Structure	Prewriting	Drafting	Revising	Editing	Use of Resources	Grammar	Mechanics	Spelling	Legibility
Standard Word Processing Software	Microsoft Word (Microsoft)	X	X	X		X	X	X	X	X	X	X	X	X
	WordPerfect (Corel)	X	X	X		X	X	X	X	X	X	X	X	X
Graphic Word Processing Software	Writing with Symbols 2000 (Mayer Johnson)	X	X	X		X	X	X	X				X	X
	IntelliTalk (IntelliTools)	X	X	X		X	X	X	X				X	X
	Clicker (Cricksoft)	X	X	X		X	X	X	X				X	X
	PixWriter (Slater Software)	X	X	X		X	X	X	X				X	X
Talking Word Processing Software	Write:OutLoud SOLO (Don Johnston)	X	X	X		X	X	X	X		X		X	X
	IntelliTalk (IntelliTools)	X	X	X		X	X	X	X		X		X	X
	Cast eReader (Don Johnston)	X	X	X		X	X	X	X		X		X	X
	Talking Word Processor (Premier Assistive Technology)	X	X	X		X	X	X	X		X		X	X
	Tex-Edit Plus (Trans-Tex Software)	X	X	X		X	X	X	X		X		X	X
	Aurora 3.0 for Windows (Aurora Systems)	X	X	X		X	X	X	X		X		X	X
	Read & Write (TextHelp)	X	X	X		X	X	X	X		X		X	X
	Awesome Talkster (Awesome Talking Library)	X	X	X		X	X	X	X		X			X
Word Prediction Software	Co:Writer 4000 SOLO (Don Johnston)	X	X	X			X	X	X		X		X	X
	Read & Write (TextHelp)	X	X	X			X	X	X				X	X

Device Category	Examples	Age Range			Skill Area									
					Writing Process						Conventions of Writing			
		Elementary	Middle School	High School	Organizational Structure	Prewriting	Drafting	Revising	Editing	Use of Resources	Grammar	Mechanics	Spelling	Legibility
	Aurora Prediction 3.0 for Windows (Aurora Systems)	X	X	X			X	X	X		X		X	X
	Word Q2 (Quillsoft)	X	X	X			X	X	X				X	X
	SoothSayer (Applied Human Factor)	X	X	X			X	X	X				X	X
	Predictor Pro (Premier Assistive Technology)	X	X	X			X	X	X				X	X
Electronic Worksheets	PaperPort (Scansoft)	X	X	X										X
	OmniForm (Scansoft)	X	X	X										X
	TestTalker (Freedom Scientific)	X	X	X										X
Advanced Reading and Writing Aids	Read:OutLoud SOLO (Don Johnston	X	X	X	X	X	X	X	X				X	X
	Kurzweil 3000 (Kurzweil Educational Systems)	X	X	X	X	X	X	X	X	X			X	X
	WYNN (Freedom Scientific)	X	X	X		X	X	X	X	X			X	X
	Read & Write Gold (TextHelp)	X	X	X		X	X	X	X				X	X
Voice Recognition Software	Microsoft XP Speech Recognition (Microsoft)		X	X			X	X	X		X	X	X	X
	Dragon Naturally Speaking Preferred (Scansoft)		X	X			X	X	X		X	X	X	X
	ViaVoice (Scansoft)		X	X			X	X	X		X	X	X	X

Assistive Technology Devices for Students Struggling in Mathematics

This document contains information on the range of assistive technology devices that can be used by students who are struggling in mathematics. Devices are available to support basic calculations through higher level math skills. Devices are also available to support students who are experiencing difficulty in math due to writing and/or reading difficulties. The types of assistive technology devices used to support mathematics are determined by individual student abilities and needs as well as the required mathematical tasks across all instructional environments.

In this document, assistive technology devices are organized into various categories based on the primary features or applications of the technology. Moreover, the age ranges for which the devices are appropriate are identified in the following categories: elementary, middle, and high school. Lastly, tools are linked to the various writing skills addressed in the Georgia Performance Standards. It is recommended that individuals utilizing this document refer to the standards to determine the specific skills that are addressed at each grade level.

- Number and Operations
- Measurement
- Geometry
- Algebra
- Data Analysis and Probability

Additional information about the assistive technology devices referenced in this document is available on the Georgia Project for Assistive Technology's website at http://www.gpat.org. Additional information about the Georgia Performance Standards is available on the Georgia Department of Educations website at http://doe.k12.ga.us.

Device Category	Examples	Age Range			Content Strands				
		Elementary	Middle School	High School	Number & Operations	Measurement	Geometry	Algebra	Data Analysis & Probability
Positioning Aids	Teacher-made Book Stand/Slant board (3" binders)	X	X	X					
	Book Stands / Slant boards (Pocket Full of Therapy, Sammons Preston)	X	X	X					
Adapted Writing Utensils	Pencils, pens, pencil grips (Onion Mountain Technology, Pocket Full of Therapy, Sammons Preston, Beacon Ridge)	X	X	X					
Adapted Paper	Bold & Raised Lined (Onion Mountain Technology, Pocket Full of Therapy, Sammons Preston, Beacon Ridge)	X	X	X					
	Graph paper (Onion Mountain Technology, Sammons Preston)	X	X	X					
Tracking Aids	Reading window, bar magnifier (Onion mountain Technology, Independent Living Aids)	X	X	X					
	EZC Reader strips (Really Good Stuff)	X	X	X					
Alignment Aids	Graph Paper (office supply stores)	X	X	X					
	Highlighter / Highlighting Tape (Crystal Springs)	X	X	X					
Contrast Aids	Highlighter tape, highlighters (Onion mountain Technology, Crystal Springs	X	X	X					
	Reading and writing windows (Onion Mountain Technology)	X	X	X					
	Bar magnifier (Independent Living Aids)	X	X	X					
	EZC Reader Strips (Really Good Stuff)	X	X	X					
	Colored overlays (National Reading Styles Institute, Onion Mountain Technology)	X	X	X					
	Colored filter strips (Really Good Stuff, Onion Mountain Technology)	X	X	X					
Manipulative Aids	Counters, fraction, tangram, slideliner, patterns (MathFun)	X	X	X	X	X	X	X	X
	Coinulator (PCI)	X			X				
Manipulative Aids	Money Calc (PCI)	X	X		X				

Device Category	Examples	Age Range			Content Strands				
		Elementary	Middle School	High School	Number & Operations	Measurement	Geometry	Algebra	Data Analysis & Probability
(continued)									
	BarCulator (MathFun)	X	X		X				
	Pieculator (MathFun)	X	X		X				
	Bills, coins - Hands on Money (Attainment)	X	X	X	X				
	Bills, coins, stickers, trays - (Creative Presentation Resources, PCI)	X	X	X	X				
	Check writing and banking sets (PCI)	X	X	X	X				
	Master Ruler (Onion mountain Technology)	X	X	X		X			
	Thermometer Stamp (Onion mountain Technology)	X	X			X			
	Graph Club (Tom Snyder)	X	X		X				X
	IntelliMathics (IntelliTools)	X	X	X	X	X	X		X
	MathPad Plus (IntelliTools)	X	X		X				
	National Library of Virtual Manipulatives (http://nlvm.usu.edu/en/nav/)	X	X	X	X				
Charts & Study Guide Aids	Flip charts, Quick Study guides (Amazon)	X	X	X	X	X	X	X	
	Money Books (Attainment, PCI)	X	X	X	X				
	Quick Math Books (Curriculum Associates)	X	X	X	X	X	X	X	X
	Flow chart, cheat sheet	X	X	X	X	X	X	X	X
Process Aids	StepPad (Attainment)	X	X	X	X	X	X	X	X
	Voice cue (Attainment)	X	X	X	X	X	X	X	X
Calculators	Abacuses • Cranmer Abacus (APH)	X	X	X	X				
	• Coin Abacus (PCI)	X			X				

Device Category	Examples	Age Range			Content Strands				
		Elementary	Middle School	High School	Number & Operations	Measurement	Geometry	Algebra	Data Analysis & Probability
	Money Calculators • Coinulator (PCI, Onion Mountain Technology, Attainment)	X			X				
	• Money Calc (PCI)	X	X		X				
	Large Key Calculators • Dino Junior Big Number (Independent Living Aids)	X	X		X				
	• Sci-Pod Low Vision Scientific Calculator (MaxiAids)		X	X	X				
	• Desk-top Calculator (MaxiAids)	X	X	X	X				
	Talking Calculators (MaxiAids, PCI, Independent Living Aids)	X	X	X	X				
	Graphing Calculators • TI-83, TI-84 (Texas Instruments, office supply and discount stores)		X	X	X		X		
	• CFX-9850G+ (Casio, office supply and discount stores)		X	X	X		X		
	• Accessible Graphing Calculator (Independent Living Aids)		X	X	X		X		
	Talking Scientific Calculators (MaxiAids, Independent Living Aids)		X	X	X		X		
	Onscreen Calculators • Big Calc (Don Johnston)	X	X	X	X				
	• Giant On-Screen Calculator http://mrjennings.co.uk/teacher/maths/calc.html	X	X	X	X				
Calculators (continued)	• Calcu-Scan (Mayer-Johnson)	X	X	X	X				
	Braille 'n Speak (Calculator with embossed output)	X	X	X	X				
Adaptive Measuring Devices	Adapted ruler (Onion Mountain Technology)	X	X	X		X			
	Master ruler (Onion Mountain Technology)	X	X	X		X			
	Talking tape measure (LLS Group, MaxiAids)	X	X	X		X			
	Measuring cups and spoons (MaxiAids)	X	X	X		X			

Device Category	Examples	Age Range			Content Strands				
		Elementary	Middle School	High School	Number & Operations	Measurement	Geometry	Algebra	Data Analysis & Probability
Watches, Timers, Schedules	Talking (Independent Living Aids)	X	X	X		X			
	Vibrating (Independent Living Aids)	X	X	X		X			
	Teach Timer (Stokes Publishing)	X	X	X		X			
	Dual time (Timex)	X	X	X		X			
	Teaching watches (Timex, Zoobee)	X				X			
	Time Timer (Onion Mountain Technology)	X	X	X		X			
	Invisible Clock (Attainment)	X	X	X		X			
	Electronic Organizer (Palm, Franklin, Office supply stores)		X	X		X			
	TimeWheel 2 (Attainment)	X	X			X			
Portable Math Processors	CalcuScribe (CalcuScribe)	X	X	X	X				
	Palm OS with math software (Handango, ImagiWorks)		X	X	X	X	X	X	X
Electronic Worksheets and Tests	PaperPort (ScanSoft)	X	X	X					
	OmniForm (ScanSoft)	X	X	X					
	TestTalker (Freedom Scientific)	X	X	X					
Electronic Math Processing Software	Basic Operations								
	• MathPad (IntelliTools)	X			X				
	• MathPad Plus (IntelliTools)	X	X	X	X				
	• Access to Math (Mac) (Don Johnston)	X			X				
	Higher Level Operations								
	• Equation Editor -On MS Office CD (Microsoft)		X	X	X			X	
	• Math Type (Design Science)		X	X	X			X	
	• StudyWorks Teaching Pro (Global Software Publishing)	X	X	X	X		X	X	X
	• TI Interactive (Texas Instruments)		X	X	X		X	X	X
	• Virtual Pencil series (Henter Math)	X	X	X	X			X	

Device Category	Examples	Age Range			Content Strands				
		Elementary	Middle School	High School	Number & Operations	Measurement	Geometry	Algebra	Data Analysis & Probability
	• Scientific Notebook (MacKichen Software)	X	X	X	X			X	
	• Geometer's Sketchpad (Key Curriculum Press)		X	X			X		
	• Algebrator (Sofmath)		X	X				X	
Voice Input	MathTalk (MetroPlex Voice Computing)	X	X	X	X			X	
Reading Support	Text Enlargement Technology								
	• Aladdin Sunshine Closed Circuit Television (Telesensory)	X	X	X					
	Word Identification Aids								
	• Children's Talking Dictionary & Spell Corrector (Franklin)	X	X	X					
	• Merriam-Webster® Speaking Dictionary & Thesaurus (Franklin)	X	X	X					
	• Reading Pen II (Franklin Educational Publishing, Wizcom)	X	X	X					
	• Speaking Language Master (Franklin)	X	X	X					
Reading Support (continued)	TextReaders								
	• Talking Buddy (Amazing Software Products)	X	X	X					
	• ReadPlease (ReadPlease)	X	X	X					
	Advanced Reading Aids								
	• Kurzweil 3000 (Kurzweil EducationalSystems)	X	X	X					
	• WYNN (Freedom Scientific)	X	X	X					
	• Read and Write Gold (TextHelp)		X	X					
	Screen Readers								
	• JAWS (Freedom Scientific)	X	X	X					
	• MAGic (Freedom Scientific)	X	X	X					

Assistive Technology Devices for Augmentative Communication for Students in Preschool and Functional Classrooms

This document contains information on the range of assistive technology devices that can be used by augmented communicators to increase the intelligibility, complexity, and accuracy of their spoken and written language. Many of these devices also support increased productivity, and independence. In most instances, students use a combination of assistive technology devices to meet their communication and language needs. The types of assistive technology devices used to support communication are determined by individual student abilities and needs as well as the required communication and language tasks across all instructional environments.

In this document, assistive technology devices are organized into various categories based on the organizational features of the technology. Lastly, tools are linked to the various language skills addressed in the Georgia Performance Standards. Some of the skills areas are briefly defined below. It is recommended that individuals utilizing this document refer to the standards to determine the specific skills that are addressed at each grade level.

Concepts of Print:

- Demonstrates knowledge of concepts of print

Phonics:

- Demonstrates the relationship between letters and letter combinations of written words and the sounds of spoken words

Vocabulary:

- Acquires and uses grade-level words to communicate effectively
- Understands and acquires new vocabulary and uses it correctly in reading and writing
- Acquires new vocabulary in each content area and uses it correctly

Listening/Speaking:

- Uses oral and visual skills to communicate
- Participates in student-to-teacher, student-to-student, and group verbal interactions
- Participates in discussions related to curricular learning in all subject areas

Writing

- Develops an understanding of the principles of writing
- Writes or dictates to describe familiar persons, places, objects, or experiences
- Uses left-to-right pattern of writing

Additional information about the assistive technology devices referenced in this document is available on the Georgia Project for Assistive Technology's website at http://www.gpat.org. Additional information about the Georgia Performance Standards is available on the Georgia Department of Educations website at http://doe.k12.ga.us

Types of Communication Systems	Examples	Display		Voice Output			Access Methods			Scan Methods		Symbol Systems				
		Static	Dynamic	Non-Voice Output	Digitized	Synthesized	Direct Selection	Single Switch	Dual/Multi Switch	Visual Scanning	Auditory Scanning	Objects	Photographs	Line Drawings	Printed Words	Keyboard/Letters
Communication Boards, Books, Folders and Wallets	Object-Picture Talk Board (Crestwood)	X		X			X					X	X	X	X	
	Choice Go Boards (Enabling Devices)	X		X			X					X	X	X	X	
	Easy See Go Board w/ Large Icon Holders for Visually Impaired (Enabling Devices)	X		X			X					X	X	X	X	
	Magnetic Kidboards (Mayer Johnson)	X		X			X					X	X	X	X	
	Communication Books/Wallets/Display Boards/Folders (Mayer-Johnson)	X		X			X					X	X	X	X	
	Communication Boards (Millikin Communications Innovations)	X		X			X						X	X	X	
Eye Gaze Frames	Eye Gaze Frames (Crestwood)	X		X						X		X	X	X	X	X
	3-D Eye-Talk (Enabling Devices)	X		X						X		X				
Compartmentalized Communication Systems	Base Trainer (AMDi)	X			X		X	X	X			X	X	X	X	
	Compartmentalized Communicators 2, 3, 4, or 5 (Enabling Devices)	X			X		X					X				
	Compact Communicators with Lights (Enabling Devices)	X			X		X					X	X	X	X	

Types of Communication Systems	Examples	Display		Voice Output			Access Methods			Scan Methods		Symbol Systems				
		Static	Dynamic	Non-Voice Output	Digitized	Synthesized	Direct Selection	Single Switch	Dual/Multi Switch	Visual Scanning	Auditory Scanning	Objects	Photographs	Line Drawings	Printed Words	Keyboard/Letters
	Grooved Platform Communicators (Enabling Devices)	X			X		X					X	X	X	X	
	4/8 Object Communicator (Enabling Devices)	X			X		X	X		X		X				
	Lapboard Take or Place N' Talk (Enabling Devices)	X			X		X					X				
Compartmentalized Communication Systems ***continued***	Classroom Take or Place N' Talk (Enabling Devices)	X			X		X					X				
	Four Compartment Scanning Communicator w/Icon Holder (Enabling Devices)	X			X		X	X	X	X		X	X	X	X	
	Super-Sized Communicator (Enabling Devices)	X			X		X	X		X		X	X	X	X	
	Talking 4 Compartment Scanner (Enabling Devices)	X			X		X	X		X		X				
	Four Compartment Communicator w/ Lights & Icon Holders (Enabling Devices)	X			X		X					X	X	X	X	
Single location, single message communication systems	BIGmack Communicator (AbleNet)	X			X		X	X				X	X	X	X	
	LITTLEMack Communicator (AbleNet)	X			X		X	X				X	X	X	X	
	Talking Symbols Notepad (AbleNet)	X			X		X					X	X	X	X	
	Chipper (Adaptivation)	X			X		X	X				X	X	X	X	
	Partner/One 1X1 (AMDi)	X			X		X	X				X	X	X	X	
	GoTalk One (Attainment)	X			X		X						X	X	X	
	No Touch Talker (Attainment)	X			X		X					X	X	X	X	

Types of Communication Systems	Examples	Display		Voice Output			Access Methods			Scan Methods		Symbol Systems				
		Static	Dynamic	Non-Voice Output	Digitized	Synthesized	Direct Selection	Single Switch	Dual/Multi Switch	Visual Scanning	Auditory Scanning	Objects	Photographs	Line Drawings	Printed Words	Keyboard/Letters
	Personal Talker (Attainment)	X			X		X					X	X	X	X	
	Single Message Communicator (Enabling Devices)	X			X		X					X	X	X	X	
	Put-Em-Arounds (Enabling Devices)	X			X		X					X	X	X	X	
Single location, single message communication systems ***continued***	Mini-Coms (Enabling Devices)	X			X		X						X	X	X	
	Talking Picture Card Holder (Enabling Devices)	X			X		X					X	X	X	X	
	Say It Play It Switch Plate (Enabling Devices)	X			X		X					X	X	X	X	
	Side Swiping Communicator (Enabling Devices)	X			X		X						X	X	X	
	Clip Talk (Enabling Devices)	X			X		X	X	X							
	One Take N' Talk (Enabling Devices)	X			X		X					X				
	Talking Buddy (Tash)	X			X		X	X				X	X	X	X	
Single location, sequential message communication systems	LITTLE Step by Step Communicator (AbleNet)	X			X		X	X				X	X	X	X	
	BIG Step-by-Step Communicator (AbleNet)	X			X		X	X				X	X	X	X	
	Step-by-Step Communicator with Levels (AbleNet)	X			X		X					X	X	X	X	
	Sequencer (Adaptivation)	X			X		X	X				X	X	X	X	
	Partner One/Stepper (AMDi)	X			X		X	X				X	X	X	X	

Types of Communication Systems	Examples	Display		Voice Output			Access Methods			Scan Methods		Symbol Systems				
		Static	Dynamic	Non-Voice Output	Digitized	Synthesized	Direct Selection	Single Switch	Dual/Multi Switch	Visual Scanning	Auditory Scanning	Objects	Photographs	Line Drawings	Printed Words	Keyboard/Letters
	Step Talking Sequencer Switch Plate (Enabling Devices)	X			X		X						X	X	X	
Single location, random message communication systems	Randomizer (Adaptivation)	X			X		X	X				X	X	X	X	
Single location, random and sequential message communication system	Press Your Luck w/ Built-in Sequencer (Enabling Devices)	X			X		X	X				X	X	X	X	
Single level, multi-message communication system	iTalk2 Communicator (AbleNet)	X			X		X					X	X	X	X	
	Partner/Two (AMDi)	X			X		X	X				X	X	X	X	
	Talk Back III (Crestwood)	X			X		X					X	X	X	X	
	Twin Talk (Enabling Devices)	X			X		X					X	X	X	X	
	Rocking Say It Play It (Enabling Devices)	X			X		X					X	X	X	X	
	Rocking Two Message Communicator w/ Light (Enabling Devices)	X			X		X						X	X	X	
	Partner/Four (with or without LED & vibration) (AMDi)	X			X		X	X	X	X		X	X	X	X	
	Tech/Four (AMDi)	X			X		X	X	X			X	X	X	X	
	One By Four Talker (Attainment)	X			X		X						X	X	X	
	TalkBook Four (Attainment)	X			X		X						X	X	X	
	Cheap Talk 4 Square (Enabling Devices)	X			X		X	X	X			X	X	X	X	

Types of Communication Systems	Examples	Display		Voice Output			Access Methods			Scan Methods		Symbol Systems				
		Static	Dynamic	Non-Voice Output	Digitized	Synthesized	Direct Selection	Single Switch	Dual/Multi Switch	Visual Scanning	Auditory Scanning	Objects	Photographs	Line Drawings	Printed Words	Keyboard/Letters
	Cheap Talk 4 In-Line (Enabling Devices)	X			X		X	X	X			X	X	X	X	
	TalkPad (Frame Technologies)	X			X		X					X	X	X	X	
Single level, multi-message communication system ***continued***	Listen To Me (Adamlab)	X			X		X						X	X	X	
	Talk Back 16, 36 (Crestwood)	X			X		X						X	X	X	
	Cheap Talk 8 (Enabling Devices)	X			X		X	X	X			X	X	X	X	
	On-the-Go Cheap Talk 8 (Enabling Devices)	X			X		X					X	X	X	X	
	Auditory Choice Making Communicator for Visually Impaired (Enabling Devices)	X			X		X	X			X					
	Cheap Talk 8 Scan (Enabling Devices)	X			X		X	X	X	X	X	X	X	X	X	
	Cheap Talk 4 In-line Scan (Enabling Devices)	X			X		X	X	X	X		X	X	X	X	
	Ultimate 8 (Tash)	X			X		X	X	X			X	X	X	X	
	Mini MessageMate (Words+)	X			X		X	X	X				X	X	X	
	Message Mate 20, 40 (Words +)	X			X		X	X	X	X			X	X	X	
	Talking Communiclock (Crestwood)	X			X			X	X	X		X	X	X	X	
	Clock Communicator (Enabling Devices)	X		X				X		X			X	X	X	
	Compartmentalized Clock Communicator (Enabling Devices)	X		X				X		X		X				
	Dual Clock Communicator (Enabling Devices)	X		X				X		X		X				

Types of Communication Systems	Examples	Display		Voice Output			Access Methods			Scan Methods		Symbol Systems				
		Static	Dynamic	Non-Voice Output	Digitized	Synthesized	Direct Selection	Single Switch	Dual/Multi Switch	Visual Scanning	Auditory Scanning	Objects	Photographs	Line Drawings	Printed Words	Keyboard/Letters
	Comboard (Tash)	X		X				X	X	X		X	X	X	X	
Multi-level, multi-message, communication systems	BlackHawk Communication Device (AdamLab)	X			X		X						X	X	X	
	Hawk II & III Communication Devices (AdamLab)	X			X		X	X	X				X	X	X	
	Lighthawk Communication Device (AdamLab)	X			X		X	X	X	X		X	X	X	X	
	VoicePal Levels (Adaptivation)	X			X		X	X	X	X	X		X	X	X	
	Tech/Scan (AMDi)	X			X		X	X	X	X			X	X	X	
	Tech/Scan Plus (AMDi) (auditory prompt)	X			X		X	X	X	X	X		X	X	X	
	Tech/Talk -8 cells (AMDi)	X			X		X					X	X	X	X	
	Tech/Speak – 32 cells (AMDi)	X			X		X						X	X	X	
	GoTalk 4+ (Attainment)	X			X		X					X	X	X	X	
	GoTalk 9+ (Attainment)	X			X		X					X	X	X	X	
	GoTalk 20+ (Attainment)	X			X		X					X	X	X	X	
	Talk Back 27, 24, 12 (Crestwood)	X			X		X						X	X	X	
	Talk Back Scanner 12 (Crestwood)	X			X		X	X		X			X	X	X	
	32 Message Communicator (Enabling Devices)	X			X		X						X	X	X	
	Cheap Talk 4 In-Line with 12-Levels (Enabling	X			X		X					X	X	X	X	

Types of Communication Systems	Examples	Display		Voice Output			Access Methods			Scan Methods		Symbol Systems				
		Static	Dynamic	Non-Voice Output	Digitized	Synthesized	Direct Selection	Single Switch	Dual/Multi Switch	Visual Scanning	Auditory Scanning	Objects	Photographs	Line Drawings	Printed Words	Keyboard/Letters
	Devices)															
Multi-level, multi-message, communication systems ***continued***	7-Message Take N' Talk Tabletop (Enabling Devices)	X			X		X						X	X	X	
	Cheap Talk 8 6-Level Communicator (Enabling Devices)	X			X		X	X	X			X	X	X	X	
	Cheap Talk 8 – 2 Levels (Enabling Devices)	X			X		X	X	X			X	X	X	X	
	On-the-Go 6-Level Communicator (Enabling Devices)	X			X		X					X	X	X	X	
	Round Cheap Talk 4 (Enabling Devices)	X			X		X					X	X	X	X	
	Symbol Communicator for the Blind (Enabling Devices)	X			X		X					X				
	Visually Impaired Communicator w/ background illumination (Enabling Devices)	X			X		X						X	X	X	
	KinderTalker Large Classroom Board (Frame Technologies)	X			X		X						X	X	X	
	Voice-In-A-Box 6/16 & 6/36 (Frame Technologies)	X			X		X						X	X	X	
	MicroVoice 6/24 (Frame Technologies)	X			X		X						X	X	X	
	Turn 'n Talk with Optical Sensor Panel (Frame Technologies)	X			X		X						X	X	X	
	Multi-Level Message Mate 40 (Words+)	X			X		X						X	X	X	
Multi-Level, Multi-Configuration Communication Systems	SuperTalker Progressive Communicator (AbleNet)	X			X		X	X	X			X	X	X	X	

Types of Communication Systems	Examples	Display		Voice Output			Access Methods			Scan Methods		Symbol Systems				
		Static	Dynamic	Non-Voice Output	Digitized	Synthesized	Direct Selection	Single Switch	Dual/Multi Switch	Visual Scanning	Auditory Scanning	Objects	Photographs	Line Drawings	Printed Words	Keyboard/Letters
Multi-Level, Multi-Configuration Communication Systems ***continued***	SuperHawk Plus Communication Device (AdamLab)	X			X		X	X	X		X		X	X	X	
	SuperHawk Communication Device (AdamLab)	X			X		X	X	X		X		X	X	X	
	Laptop Communicator (Enabling Devices)	X			X		X					X	X	X	X	
	Communication Builder (Enabling Devices) (single level, 4-level, & 7-level)	X			X		X					X	X	X	X	
	On-the-Go 7-Level Communication Builder (Enabling Devices)	X			X		X					X	X	X	X	
	Digicom 2000 (Great Talking Box)	X			X		X	X	X	X	X		X	X	X	X
	adVOCAte (Zygo)	X			X		X	X	X	X	X		X	X	X	
	MaCaw 5 (Zygo)	X			X		X	X	X	X	X		X	X	X	X
	MaCaw Green (Zygo)	X			X		X	X	X	X	X		X	X	X	X
	Talara (Zygo)	X			X		X	X		X			X	X	X	
	Dynamo (DynaVox Technologies)		X		X		X	X		X				X	X	
	MightyMo/ MiniMo ((DynaVox Technologies)		X		X		X	X	X	X	X		X	X	X	X
	SpringBoard Plus (Prentke Romich)		X		X		X	X	X	X	X		X	X	X	X
	Handheld Voice (Saltillo Corporation)		X		X		X						X	X	X	
	Chat PC (Tash)		X		X	X	X						X	X	X	X

Types of Communication Systems	Examples	Display		Voice Output			Access Methods			Scan Methods		Symbol Systems				
		Static	Dynamic	Non-Voice Output	Digitized	Synthesized	Direct Selection	Single Switch	Dual/Multi Switch	Visual Scanning	Auditory Scanning	Objects	Photographs	Line Drawings	Printed Words	Keyboard/Letters
Wearable Communication Systems	TalkTrac Plus Wearable Communicator (with and without levels) (AbleNet)	X			X		X						X	X	X	
	Pocket GoTalk (Attainment)	X			X		X						X	X	X	
	Keychain Talkers (Attainment)	X			X		X									
	Wrist Talker (Enabling Devices)	X			X		X									
	Companion Communicator (Enabling Devices)	X			X		X						X	X	X	
	Hip Step-Talking Sequencer (Enabling Devices)	X			X		X						X	X	X	
	Hip Talk (Enabling Devices)	X			X		X						X	X	X	
	Hip Talk Plus (Enabling Devices)	X			X		X						X	X	X	

The devices listed on the following table are not meant to be an all inclusive listing of devices within the categories provided. Any exclusion of a specific device was not intentional. The features designated for the devices below are meant to indicate that the devices have the capacity to provide that feature and they may be dependent on external accessories or specific software programs. A good faith effort has been made to verify the information below; however, if errors have been made related to features of specific devices they are not intentional. Individuals are encouraged to explore each device in order to verify that it contains all of the features needed for their specific students.

Appendix C

Student Work Samples & Classroom Activities

Use of Daily Picture and/or Tactile Object Schedules
Aligned with Georgia Performance Standards

ELAK-1R6; ELA2R4; ELA3R3 – *Student uses a variety of strategies to understand and gain meaning from text.*

ELA4-8R1; ELA9-12RL1 - *Student demonstrates comprehension of informational text. Student applies knowledge of common graphic features and organizational patterns (logical order).*

Students feel each tactile symbol in left to right progression to gain information regarding classmates at school and at home, day of the week, and activities for the morning schedule. Students answer questions related to symbols placed on tactile board (Figures 6 & 7).

Figure 6 Tactile symbols created by Jessie Moreau, M.Ed., NBCT, 1995-2005.

Figure 7 Tactile symbols created by Jessie Moreau, M.Ed., NBCT, 1995-2005.

ELAK-12LSV1 – *Student participates in student-teacher, student-to-student, and group interactions by responding to questions with appropriate information.*

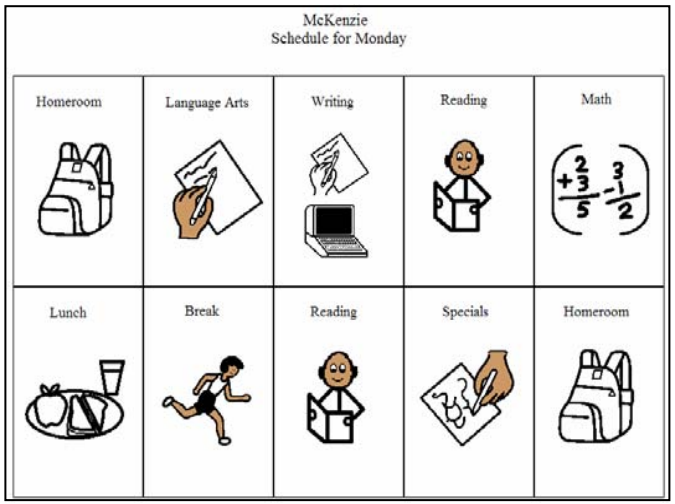

Figure 8 Daily Schedule created by Toni Waylor-Bowen, Ph.D., 2004 using Picture Commun ication Symbols from Boardmaker © Mayer-Johnson, Inc.

Students follow daily routine by reading the picture symbols in a left-to-right progression. Students answer "wh" questions and work on correct sequence of events of daily activities, utilizing the picture symbol schedule. When an activity is completed, the symbol is either marked off as finished using pencils, markers, ink stamps, stickers, Bingo markers, etc. *(Figure 8)* or taken off the board and put into a "Finished Box" *(Figure 9).*

Figure 9 Daily Schedule pics created by Kayse Harshaw, M.Ed., 2004 using Picture Commun ication Symbols from Boardmaker © Mayer-Johnson, Inc.

Writing GPS

ELAK-1W1 – *Student begins to describe an experience in writing…*

ELA2-12W1 – *Student produces writing that establishes an appropriate organizational structure…*
…using traditional structures for conveying information (e.g., chronological order)

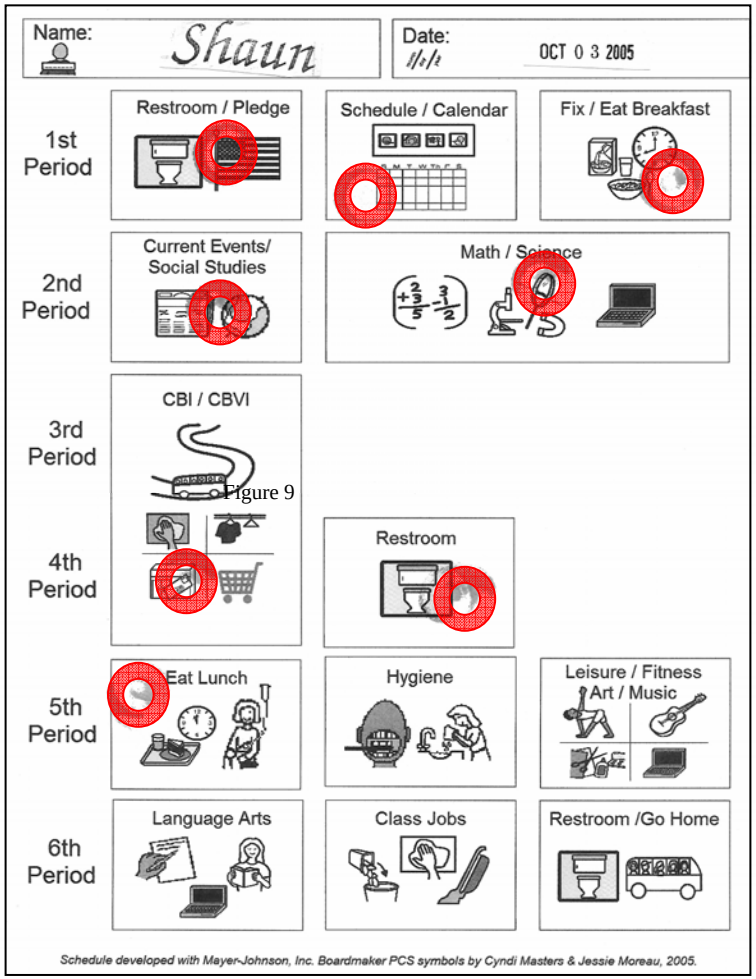

Figure 9

Figure 10 Picture Communication Symbols from Boardmaker © Mayer-Johnson, Inc.

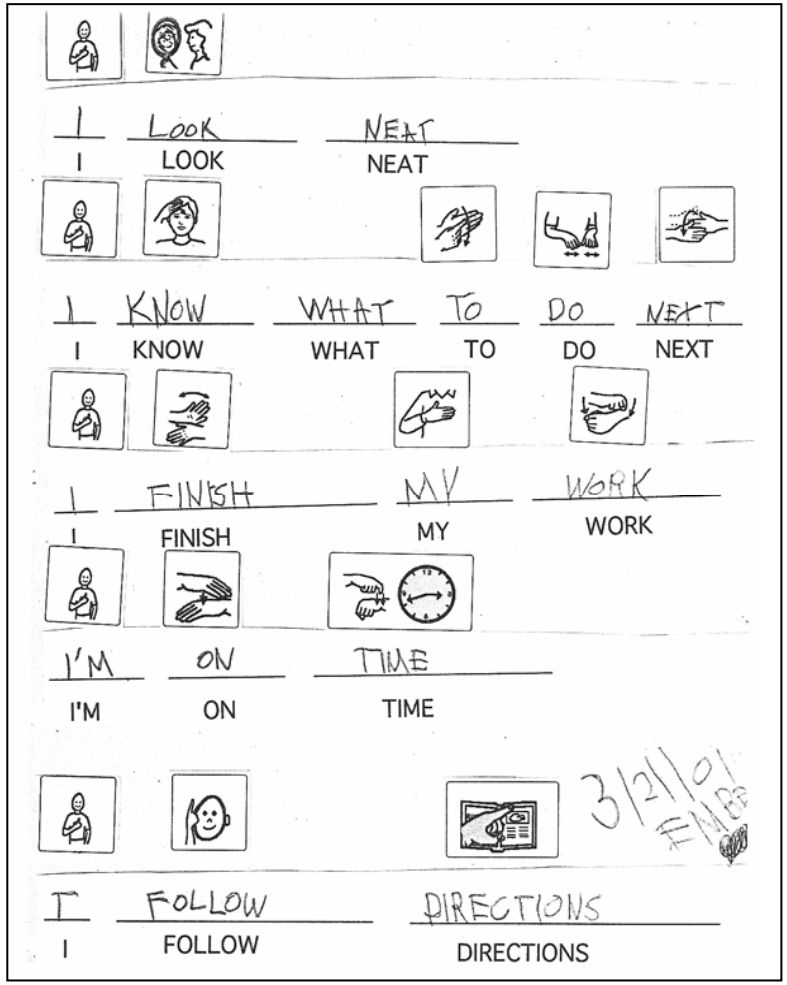

Figure 11 Writing activity designed by Jessie Moreau, M.Ed., NBCT, using Picture Communication Symbols from from Boardmaker © Mayer-Johnson, Inc.

Figure 12

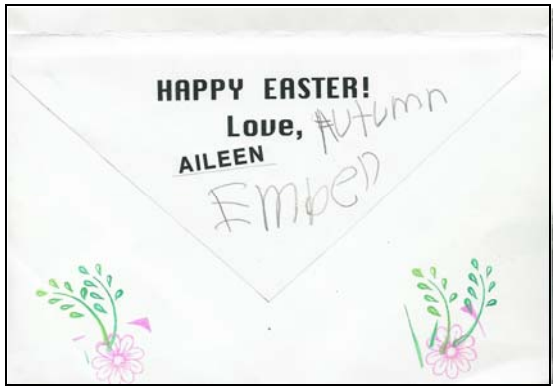

Figure 13

technical writing *(friendly letters, thank-you notes, formula poems, instructions and procedures) that follows an organizing structure appropriate to purpose, audience and context*

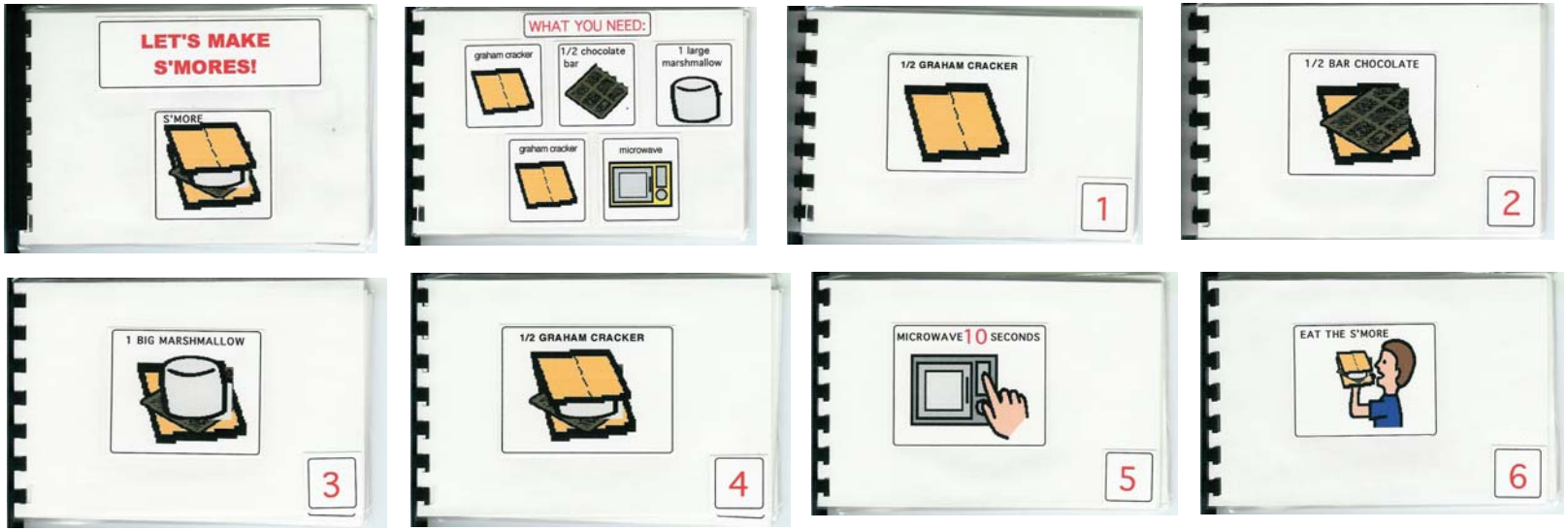

Figure 14

S'more Book activity created by Jessie Moreau, M.Ed., NBCT using
Picture Communication Symbols from Boardmaker © Mayer-Johnson, Inc.

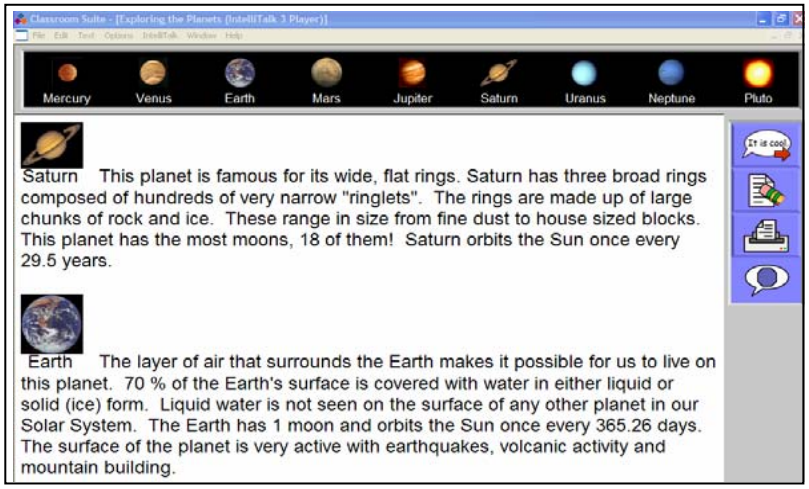

Figure 15 Classroom Suite © IntelliTools, Inc.

IntelliShare Activity Exchange computer activity – *Exploring the Planets* for Science GPS. The Activity Exchange offers computer activities in all academic areas across all grade levels.

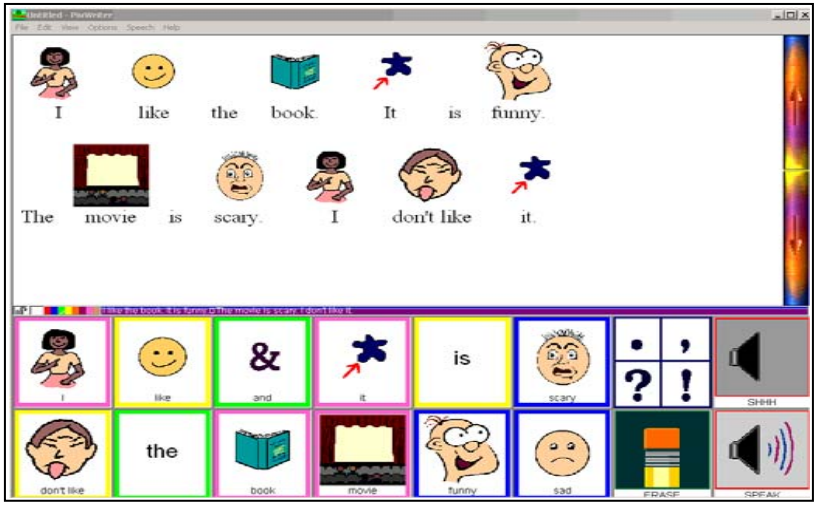

Figure 16 PixWriter © Slater Software, Inc.

Graphic and talking word processing software programs assist in reading and writing across all areas of the GPS.

Figure 17 Tactile symbols created by Jessie Moreau, M.Ed., NBCT, 1998.

Figure 18 Photo credit: David L. Thomas, Georgia DOE

Figure 19 Overlay created by Kayse Harshaw, M.Ed., using Picture Communication Symbols from Boardmaker © Mayer-Johnson, Inc.

A large variety of augmentative communication devices, systems, switches and equipment give students access to the GPS and their IEP objectives.

Appendix D
Sample Lesson Plans and Classroom Schedules

Lower Elementary School: Example Writing Lesson Plan

Name: Mrs. Bowen	Week of: September 26 – 30, 2005

Time/ Activity	Student(s) / Objective/ GPS	Activity	Materials/ Assistive Technology	Data collected (Days)	Homework
8:00 – 8:30 (Morning) Writing Across the Curriculum 1:30 – 2:00 (Afternoon) Writing	**Marcus/ KR1, KW1, KLSV1** **Wesley/ KW1, KLSV1,** **LaDonna/ 1W1, 1LSV1,** **Ortiz/ 2W1, 2LSV1,** **Lil/ 2W1, 2LSV1**	**Morning** – Go to homeroom, sign in using stamp (**KW1, KW1**), AT (**1W1**), or keyboard (**2W1**, **2W1**). When arriving to class, begin set up for daily journal. Students give schedule objects/pictures/words to teacher to assist in setting up journal (**KW1**, **KW1**, **1W1**, **2W1**, **2W1**) **Writing Across the Curriculum** – After each activity, discuss and review all materials. Have students fill in details missing from prepared text, including punctuation (**KW1**, **2W1**), previously introduced objects/ pictures/ words (**KW1**, **1W1**, **2W1**, **2W1**), and new information presented during activity (**KLSV1**, **KLSV1**, **1LSV1**, **2LSV1**, **2LSV1**). At end of writing activity, have student reread story (**1W1**) by activating switch. **Afternoon** – Review daily journal. Have students fill in details missing from prepared text, including punctuation (**KW1**, **2W1**), previously introduced objects/pictures/words (**KW1**, **1W1**, **2W1**, **2W1**), and new information presented during day (**KLSV1**, **KLSV1**, **1LSV1**, **2LSV1**, **2LSV1**).	Name stamps, AT, keyboard, student schedules, WriteOut Loud, PowerPoint Monday – Write after Reading Activity – “Animals we know” Tuesday – Write after Science Activity – “How do you describe a cow?” Wednesday – Write after Math Activity – “How many ducks did you count?” Thursday – Write after Reading Activity – “I have a pet ….” Friday – Write after Cooking Experience – “How do you make a Brown Cow?”	**Marcus MW** **Wesley MTh** **LaDonna T F** **Ortiz T Th** **Lil W F**	**Marcus** – Use name stamp to mark papers to be signed by parents in appropriate place (T, F) Reread daily journal at home. **Wesley** – Use name stamp to mark papers to be signed by parents in appropriate place (T, F). Reread daily journal at home. **LaDonna** – Reread daily journal at home. **Ortiz** – Reread daily journal at home. Use possessive pronoun words to items (dinner plates, clothes). **Lil** – Reread daily journal at home.

Lower Elementary School: Example Reading Lesson Plan

Name: Mrs. Bowen	Week of: September 26 – 30, 2005

Time/ Activity	Student(s) /Objective/GPS	Activity	Materials/Assistive Technology	Data collected (Days)	Homework
10:30 – 11:15 Reading	**Marcus/ KR6, KLSV1** **Wesley/ KR1, KR6, KLSV1,** **LaDonna/ 1R5, 1R6,** **Ortiz/ 2R2, 2R4,** **Lil/ 2R1, 2R2, 2R4**	**Opening** – Review theme of "animals" with students and review items previously introduced. Show books that have been read before and have each student match at least one animal from the book with toy/ picture (**KR6, 1R6, 2R4, 2R4**). Present 3 books, two theme and one non-theme, and have student pick the two theme books (**2R4).** Have another student pick book to be read to class (**KR1**). **Activity** - Introduce book. Introduce AAC overlay (**KLSV1, KLSV1, 1R5**) and review frequently used words in the book (**2R2, 2R2**). Read book, letting student turn pages (**KR1**) and read repeated phrases (**KLSV1, KLSV1**) and words (**2R2, 2R2**). While reading, have students match toy/pictures animals to those in book (**KR6, 1R6, 2R4, 2R4**) and answer comprehension questions (**2R4**). When story is finished, ask students whether story is real or not real (**2R4**) and whether it was funny or sad (**2R2**), **Follow-up** – **Marcus, Wesley, LaDonna -** Match and classify objects or pictures from story (**KR6, KR6, 1R6**) to overlay on AAC, **Ortiz –** Read high frequency words on cards and in book (**2R2**), **Lil –** Match single and plural words with pictures (**2R1**) and correct errors when prompted (**2R2**). Read high frequency words on cards and in book (**2R2**).	Theme books, 1 non-theme book, Toy animals/ pictures (for previous books and current books), AAC overlay for books, story pictures (real, not real, emotion pictures), Monday – The Seals on the Bus. Lenny Hort & G. Brian Karas. Henry Holt & Co. LLC. New York, 2000. Big Bear Ball. Joanne Ryder, Steven Kellogg (Illus.). Harper Collins Publishers. New York, 2003. Tuesday – "The Seals on the Bus", "Big Bear Ball" Wednesday – Baby Duck's New Friend. Frank Asch, Devin Asch. Harcourt, Inc. Orlando, Florida, 2001. An Elephant in the Backyard. Richard Sobol. Penguin Group (USA), New York, 2004. Thursday – "Baby Duck's New Friend", "An Elephant in the Backyard" Friday – Reread favorite	**Marcus MW** **Wesley MTh** **LaDonna T F** **Ortiz T Th** **Lil W F**	**Marcus** – Take book home, along with AAC overlay, and read with parents at home (T, Th) **Wesley** – Take book home, along with AAC overlay, and read with parents at home (M,W) **LaDonna** – Choose book to take home, match items in book with items given (Tu, W) **Ortiz** – Read sight word cards, find words in magazines, newspapers **Lil** – Complete worksheets (single plural), Read sight word cards

Upper Elementary School: Example Reading Lesson Plan

Name: Mrs. Bowen	Week of: September 26 – 30, 2005

Time/ Activity	Student(s) /Objective/GPS	Activity	Materials/AE	Data collected (Days)	Homework
10:30 – 11:15 Reading	**Bridgette/ 3R2, 3R3** **Ryan/ 3R3,** **Benny/ 4R1, 4R2** **Na'Tasha/ 4R1, 4R2, 4LSV1,** **Monique/ 5R1, 5R2, 5R3,** **Jamil/ 5R1, 5R2, 5R3**	**Opening** – Review theme of "insects" with students and review items previously introduced, including chapter book being read (**3R3**). Show objects/ pictures/ words from previous chapters and have each student match/sort/ or classify by characters, setting, and events. (**3R3**, **3R3**, **4R1**, **4R2**, **5R1**, **5R2**). Put events in sequential order (**4R1**) before reading chapter. **Activity** - Introduce chapter, new objects/pictures/words associated with chapter, and new AAC overlays needed. Have student activate assistive technology (switch for tape recorder) (**5R3**) and listen to complete chapter. Have another student activate assistive technology, starting and stopping tape when asked (**3R3**). While reading, have students match objects/pictures/words to those in book (**3R3**, **3R3**, **4R1**, **4R2**, **4R2**, **5R1**, **5R2**) and answer comprehension questions (**3R3**, **4R2**, **4R2**, **5R2**, **5R2**). After chapter is finished, preview next chapter by adding new object/picture/word to group. **Follow-up** – Present 3 books, two theme and one non-theme, and have student pick the one theme non-fiction book (**5R3**, **5R3**) to read and use during language arts and science. **Ryan**, **Benny**, **Monique** - Match and classify objects or pictures from story (**3R3**, **4R1**, **5R1**) to overlay on AAC, **Na'Tasha** – Activate switch to reread book when directed (**4LSV1**), **Bridgette**, **Jamil** – Identify idioms and multiple meaning words (**3R3**) and correct errors when prompted. Read high frequency and new words on cards and in book (**5R3**).	Theme books, 1 non-theme book, items/ pictures/ word cards (for chapters in book), AAC overlay for book, Monday – How to Eat Fried Worms. Thomas Rockwell, Pictures by Emily McCully. Dell Publishing. New York, 1973. on Audiotape; Insect non-fiction books Tuesday – "How to Eat Fried Worms" on Audiotape; Insect non-fiction books Wednesday – "How to Eat Fried Worms" on Audiotape; Insect non-fiction books Thursday – "How to Eat Fried Worms" on Audiotape; Insect non-fiction books Friday – "How to Eat Fried Worms" on Audiotape; Insect non-fiction books	**Bridgette M W** **Ryan M Th** **Benny T F** **Na'Tasha T Th** **Monique W F** **Jamil T F**	**Bridgette**– Complete multiple meaning worksheet (M, W), sort pictures to tell story (T, Th) **Ryan** – Take book home, along with AAC overlay, and read with parents at home (M,W) **Benny** – Choose book to take home, match items in book with items given (Tu, W) **Na'Tasha**– Take book home, along with AAC overlay, and read with parents at home (T, Th) **Monique** – Choose book to take home, match items in book with items given (Tu, W) **Jamil** - Sort pictures to tell story (M, W), Complete before/ after worksheets (T, Th)

Upper Elementary School: Example Writing Lesson Plan

Name: Mrs. Bowen	Week of: September 26 – 30, 2005

Time/ Activity	Student(s) /Objective/GPS	Activity	Materials/AE	Data collected (Days)	Homework
8:00 – 8:30 (Morning) Writing Across the Curriculum 1:30 – 2:00 (Afternoon)	**Bridgette/ 3W1, 3C1** **Ryan/ 3W1, 3LSV1** **Benny/ 4W1, 4W2, 4W3, 4C1, 4LSV2,** **Na'Tasha/ 4W1, 4W2, 4W3, 4C1, 4LSV2,** **Monique/ 5W1, 5W2, 5LSV2,** **Jamil/ 5W2, 5W3, 5W4, 5C1, 5LSV2**	**Morning** – Go to homeroom, sign in using stamp (**3R1**), AT (**3W1**, **5LSV2**), or keyboard (**4W3**, **4W3**, **5LSV2**). When arriving to class, begin set up for daily journal. Students give schedule objects/pictures/words to teacher to assist in setting up journal (**3W1**, **3W1,** **3LSV1**, **4W1**, **4W1**, **5W1**, **5W2**, **5LSV2**) **Writing Across the Curriculum** – After each activity, discuss and review all materials. Have students fill in details missing from prepared text, including implicit details (**3W1**, **5W2**, **5W2**), sensory detail (**3W1**, **4W2**, **5W2**) and detail gotten by looking up or asking for information (**4W2**). Have some students ensure that all group writing "makes sense" (**3W1, 3C1**, **5W2**). Use Writing and Publishing Software, having students choose presentation options (**3W1**, **3W1**, **4LSV2**, **5LSV2**, **5W3**, **5LSV2**). When completed, have student present (**3W1**, **4LSV2**, **4LSV2**, **5LSV2**) by activating technology or reading aloud . **Afternoon** – Review daily journal. Have students fill in details missing from prepared text (**3W1**, **3W1**, **4W1**, **4W2**, **5W2**, **5W2**), find and make corrections (**5W4**), and identify parts of speech of missing words (**4C1**, **4C1**, **5C1**).	Name stamps, AT, keyboard, student schedules, WriteOut Loud, PowerPoint Monday – Begin to write after Reading Activity – "How would you eat worms?" Tuesday – Finish writing after Reading Activity – "How would you eat worms?" Wednesday – Begin to write after Science Activity – "How do you describe your favorite bug?" Thursday – Finish writing after Science Activity – "How do you describe your favorite bug?" Friday – Write after Cooking Experience – "How do you make a "Whizbang Worm Delight?"	**Bridgette M W** **Ryan M Th** **Benny T F** **Na'Tasha T Th** **Monique W F** **Jamil T F**	**Bridgette**– Complete multiple meaning worksheet (M, W), Reread daily journal at home. **Ryan** – Reread daily journal at home. Match objects at home to objects identified in daily journal. **Benny** – Reread daily journal at home. Complete noun/ adjective worksheet (T, Th) **Na'Tasha**– Reread daily journal at home. Complete noun/ adjective worksheet (T, Th) **Monique** – Reread daily journal at home. Match objects at home to objects identified in daily journal. **Jamil** – Reread daily journal at home. Edit journal if not completed at school. Complete noun/verb worksheet.(M, W)

EXAMPLE MIDDLE SCHOOL LESSON PLANS

Grade Level: Middle School	Teacher: Mrs. Moreau	Theme: Water Everywhere	Two Week Lesson Plans

Time/ Activity	GPS / IEP Objective	Activity	Materials / Assistive Technology	Data/ Assessment	Additional Related Activities
8:30 Arrival; Put away belongings 8:45 Restroom; Set schedule; Calendar work; Pledge of Allegiance; Moment of Silence 9:15 Current Events/ Social Studies	**ELA6,7,8W1** – Record sequence of daily events, activity, or story **ELA6,7,8LSV1** – Respond to questions; Ask relevant questions **ELA6,7,8 R1** – Demonstrate comprehension and show evidence of explanation of variety of literary and informational texts. **ELA6,7,8RC1** – Read books/informational texts related to various subject areas **ELA6,7,8LSV1** – Respond to questions; Ask relevant questions **ELA6,7,8LSV2** – Deliver or respond to presentations for various purposes Social Studies GPS *(to be added at a later date)*	**Daily:** Students set up daily schedule independently or follow picture/object model. Students complete calendar activities with printed/tactile calendars. Students chat about daily schedule and say Pledge using voice/sign/AAC device with prerecorded messages. **Day 1:** Teacher reads aloud/explains article(s) and pictures from newspaper/magazines regarding floods/hurricane (a current event). **Day 2:** Students answer questions and/or make choices of pictures/objects in response to questions asked regarding hurricanes/floods. **Day 3:** Students cut out/find/match words/pictures/tactile symbols from newspapers & magazines depicting hurricanes and/or floods. **Day 4:** Students complete page in Current Events journal by writing, pasting pictures/tactile symbols, creating computer activity about the hurricanes/floods. **Day 5:** Students share information regarding their journal entries with the class via voice, AAC devices with prerecorded message choices, pictures/tactile symbols, computer software programs. **Week 2:** Continue topic or choose new current event.	Picture symbols/Tactile objects for schedule & answering questions; Step by Step device for Pledge and morning conversation; preprinted and tactile calendars; Bingo markers/hand stamps for printed calendars Daily newspapers, weekly news magazines, *Kids Discover* magazines; AAC devices; individual Current Event binders/journals, glue, scissors, paper; precut pictures, pre-made tactile symbols; PowerPoint program on computer; Internet access	Instructional Data based upon prompting hierarchy Multiple Choice Items; Student Work Samples	**Art:** - Students will create water themed greeting cards utilizing water-related words, pictures, tactile symbols. Cards to include appropriate structure (greeting, body, closing) and vocabulary for type of greeting card created **(ELA6,7W2)**. **Community-Based Instruction:** ***Grocery Store:*** - Students use word/picture/tactile shopping lists to locate shelves of bottled water and other unfamiliar items **(ELA6,7,8RC3).** - Students compare prices of different varieties of bottled water to find items that cost more and less. - Students add up prices of items they will purchase individually, using calculator/talking calculator **(M6N1).** - Students use "Pay to the Next Dollar" strategies to purchase items from the cashier or through the Self-Checkout line **(M6A3).**

Time/ Activity	GPS / IEP Objective	Activity	Materials / Assistive Technology	Data/ Assessment	Additional Related Activities
9:45 Math 10:15 Individual Leisure	**M6D1** – Use data to construct graph; analyze data **ELA6,7,8LSV1** – Participate in student-teacher, student-student, group verbal interactions; Ask relevant questions; Respond to questions, comments **ELA6,7,8LSV2** – Deliver or respond to presentations for various purposes Leisure Domain	**Day 1:** Teacher introduces the water survey topic. Students make choices of specific questions to ask for water survey (e.g., How many glasses/bottles of water do you drink per day? How many times a week do you water your lawn/garden?) **Days 2 -4**: Students travel through school building to ask adults/students the survey questions. Students record data utilizing numbers, tally marks, counters, picture/tactile symbols. **Days 5-7:** Students count responses and use data to create picture/tactile graphs of survey questions. **Days 8 & 9:** Students present results of their surveys and explain data on graphs to the class, utilizing voice, AAC devices, picture/tactile symbols Students make choices of individual leisure activities	Picture/tactile symbol and number symbol representations for water survey questions and responses; Wikki Stix for tally marks; tally counter; AAC devices with appropriate preprogrammed question/answers; tactile graph boards; computer graph software (e.g., Excel or Graph Club); Picture/tactile symbols; AAC devices; Assistive Technology equipment as needed for access	Instructional Data based upon prompting levels/hierarchy; Student Work Samples	***Post Office:*** - Students will address envelopes of previously made greeting cards, using print, typed, or pre-printed address label to the person of their choice **(ELA6,7W2).** Students then purchase stamps from stamp vending machine at the post office and mail their letter. **Cooking / Food Prep:** - Utilize recipes that call for specific measurements of water (e.g., jello, microwave noodles, soup). -Have students create their own picture recipe pages, utilizing words and pictures to sequence the steps of the recipe **(ELA6,7W2).** Use pictures from actual food containers/boxes as well as *Boardmaker* picture symbols. - Have students fill up several sizes of water bottles then make estimates of which hold the largest capacity of water Students then pour water into pitcher with ounce/quart levels indicated to check their answers **(M6M2).**

Time/ Activity	GPS/ IEP Objective	Activity	Materials / Assistive Technology	Data / Assessment	Additional Related Activities
10:30 English/ Language Arts	**ELA6,7,8 R1** - Demonstrate comprehension and show evidence of explanation of variety of literary and informational texts. **ELA6,7,8R2** - Understand and acquire new vocabulary; use correctly in reading/writing. **ELA6,7,8RC1** - Read minimum of 5 grade level /age appropriate books. **ELA6,7,8RC2** - Participate in discussions related to curricular learning. **ELA6,7,8W2** - Produce 2-3 word sentences/phrases to relate parts of story	Read Middle School novel related to water or Wishbone Book: *Robinhound Crusoe* or *Treasure Island* from Start to Finish Series **Days 1, 2, & 3**: Introduction of characters, settings, new vocabulary of first 2-3 chapters of book. Can be done via scavenger hunts; word/picture/object bag pulls; word walls; etc. **Day 4:** Teacher reads aloud 1-2 chapters utilizing pictures/object symbols for comprehension or uses digitized text, with LCD projector for class reading of text. Students answer questions, identify concepts, new vocabulary in text by finding appropriate printed words, pictures, or tactile symbols when given an array of choices or by matching. Students sequence events in the chapters read, utilizing speech, printed words, picture/ tactile symbols, or through match-to-sample. **Day 5: Assessment** - Students create their own version of the story read thus far, utilizing a variety of methods: drawing pictures, writing, typing on the computer/word processor with/without a model, using point 'n click software programs, making choices of pictures/tactile symbols. **Beyond Day 5: Repeat Days 1-5** for the additional chapters until book is completed. At the end of the book, have students retell the story, utilizing the versions they created along the way.	6,7,8th Grade ELA Teacher's Manual and Textbook; Wishbone: Robinhound Crusoe. Caroline Leavitt. Scholastic. 1998. story or Don Johnston, Inc., Start to Finish: Treasure Island book, cassette, & CD-Rom; AAC devices with appropriate preprogrammed question/answers; picture/tactile symbols of related vocabulary; LCD projector/computer, if needed; possible software programs: *Clicker 4*, *PixWriter*; *Intellitools Classroom Suite/Intellitalk Writing with Symbols*; paper and writing/drawing utensils; Intellikeys keyboard and/or switches for access as needed	Instructional Data based upon prompting hierarchy Student Work Samples	

Time/ Activity	GPS/ IEP Objective	Activity	Materials / Assistive Technology	Data / Assessment	Additional Related Activities
11:30 Lunch; Restroom,Hygiene 12:30 Group Leisure: 1:15 Science	Daily Living Domain **ELA6,7,8LSV1** – Turn taking; Asking/answering questions; making needs/wants known **S6E4** – Understand how the distribution of land and oceans affects climate and weather. **Element C:** Relate how moisture evaporating from the oceans affects the weather patterns and weather events such as hurricanes. * Look at **Sample Tasks** given in 6th Grade Science GPS for examples of related activities **S6CS4** – Students will use tools and instruments for observing, measuring, and manipulating equipment and materials in scientific activities. **ELA6,7,8RC2** – Participate in discussions related to curricular learning.	***Unit on Hurricanes*** **Days 1 & 2:** Introduction to Hurricanes Videotape or computer program of hurricanes shown to class. New vocabulary introduced via words, pictures, tactile symbols. **Days 3, 4, & 5**: How Hurricanes Form Using visuals from Science textbook, and from the internet, teacher explains how hurricanes form in the ocean, stages of hurricanes, categories of hurricanes, flooding caused by hurricanes. Students sequence pictures/object symbols of formation/result of hurricanes or match-to-sample the sequence. **Days 6,7, & 8:** Damage & Destruction From Hurricanes Discussion of damage caused by hurricanes: broken trees, loss of electricity, damaged homes, flooding, lack of clean water. Students match pictures/object symbols to pictures/object symbols of the five category differences of hurricane destruction. **Day 9: Assessment**	6,7,8th Grade Science Teacher's Manual & Textbook; any multimedia materials utilized by middle school teachers to teach these concepts, including models, software, etc.; AAC devices with appropriate preprogrammed question/answers; picture/tactile symbols to represent various concepts being taught; computer with Internet; software: Intellitools Classroom Suite with teacher-made hurricane activities and overlays; Intellikeys keyboard	Multiple Choice Items; Instructional Data	

Time/ Activity	GPS/ IEP Objective	Activity	Materials / Assistive Technology	Data / Assessment	Additional Related Activities
2:00 Vocational Skills	Vocational Domain **GPS from ELA & Math** can be worked on in this area: vocabulary development; comprehension of work related rules & procedures; following multi-step directions; use of jigs for counting multiples of items; measurement of length/area/volume.	Students work on a variety of vocational activities, e.g., following work rules & procedures; filing vocabulary words from weekly activities; counting multiples of items (w/ jigs if necessary); measuring varieties of materials, items; packaging, stamping, rubber banding.	Counting jigs; adapted handle stamps; enlarged letters/numbers for filing; talking graphic word processing software for work rules/procedures	Instructional Data	
2:45 Snack; Restroom	Daily Living Domain	Students use vending machines once weekly to purchase bottled water or other items of choice to use during snack time.	AAC devices for making comments, choices		
3:15 Classroom jobs 3:30 Students leave for home	Vocational Domain	Students choose or are assigned weekly jobs in the classroom, e.g., clean boards, wash desks, take attendance, feed fish, vacuum carpet.	Picture symbol / tactile object schedule for weekly jobs		

SAMPLE MIDDLE /HIGH SCHOOL SCHEDULE FOR STUDENTS WITH SIGNIFICANT COGNITIVE IMPAIRMENTS

Breakfast / Community-Based Instruction (CBI) 2 x per Week

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:30 Students arrive; Put away belongings	**8:30** Students arrive; Put away belongings	**8:30** Students arrive; Put away belongings	**8:30** Students arrive; Put away belongings	**8:30** Students arrive; Put away belongings
8:45 Restroom; Set daily schedule; Pledge/Moment	**8:45** Restroom; Set daily schedule; Pledge/Moment	**8:45** Restroom; Set daily schedule; Pledge/Moment	**8:45** Restroom; Set daily schedule; Pledge/Moment	**8:45** Restroom; Set daily schedule; Pledge/Moment
9:00 Eat Breakfast	**9:00** Eat Breakfast	**9:00** Eat Breakfast	**9:00** Eat Breakfast	**9:00** Food Prep for cooking breakfast; Eat Breakfast; Clean-up
9:20 Current Events/ Social Studies	**9:20** CBI prep	**9:20** Current Events/ Social Studies	**9:20** CBI prep	**10:00** Language Arts
9:45 Math	**9:45** Community Skills	**9:45** Language Arts	**9:45** Community Skills	**10:30** Art
10:15 Individual Leisure Skills	(Specific ELA/Math/Social Studies GPS can be worked on during CBI training.)	**10:45** Individual Leisure	(Specific ELA/Math/Social Studies GPS can be worked on during CBI training.)	
10:30 Language Arts		**11:00** Restroom; Food prep for cooking lunch; Cook & Eat		
11:30 Restroom/ Lunch / Hygiene	**11:45** Restroom/ Lunch / Hygiene	**11:45** Restroom/ Lunch / Hygiene	**11:45** Restroom/ Lunch / Hygiene	**11:30** Restroom/ Lunch/Hygiene
12:30 Group Leisure/Art/Fitness/ Music *(Choose 1)*	**12:45** Individual Leisure Skills	**12:30** Lunch Clean-up; Individual Leisure	**12:45** Individual Leisure Skills	**12:30** Math
1:15 Science	**1:00** Math	**1:15** Science	**1:00** Math	**1:00** Group Leisure/ Fitness / Music *(Choose 2)*
2:00 Vocational	**1:45** Language Arts	**2:00** Vocational	**1:45** Language Arts	
2:45 Snack Break/ Restroom	**2:45** Snack Break/ Restroom	**2:45** Snack Break/ Restroom	**2:45** Snack Break/ Restroom	**2:45** Snack Break/ Restroom
3:15 Classroom jobs	**3:15** Classroom jobs	**3:15** Classroom jobs	**3:15** Classroom jobs	**3:15** Classroom jobs
3:30 Students leave for home	**3:30** Students leave for home	**3:30** Students leave for home	**3:30** Students leave for home	**3:30** Students leave for home

SAMPLE MIDDLE /HIGH SCHOOL SCHEDULE FOR STUDENTS WITH SIGNIFICANT COGNITIVE IMPAIRMENTS

No Breakfast / Community-Based Instruction (CBI) 1 x per Week

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:30 Students arrive; Put away belongings	**8:30** Students arrive; Put away belongings	**8:30** Students arrive; Put away belongings	**8:30** Students arrive; Put away belongings	**8:30** Students arrive; Put away belongings
8:45 Restroom; Set daily schedule; Pledge/Moment	**8:45** Restroom; Set daily schedule; Pledge/Moment	**8:45** Restroom; Set daily schedule; Pledge/Moment	**8:45** Restroom; Set daily schedule; Pledge/Moment	**8:45** Restroom; Set daily schedule; Pledge/Moment
9:15 Current Events/ Social Studies	**9:15** Current Events/ Social Studies	**9:15** Current Events/ Social Studies	**9:15** Current Events/ Social Studies	**9:15** Current Events/ Social Studies
9:45 Math	**9:45** Math	**9:45** CBI Prep	**9:45** Math	**9:45** Language Arts
10:15 Individual Leisure Skills	**10:15** Individual Leisure Skills	**10:00** Community Skills (Specific ELA/Math/Social Studies GPS can be worked on during CBI training.)	**10:15** Individual Leisure Skills	**10:15** Art
10:30 Language Arts	**10:30** Language Arts	**12:15** Restroom/ Lunch / Hygiene	**10:30** Language Arts	**11:30** Restroom/ Lunch/Hygiene
11:30 Restroom/ Lunch / Hygiene	**11:30** Restroom/ Lunch / Hygiene	**1:15** Individual Leisure	**11:00** Food Prep for Cooking lunch; Restroom/Cook & Eat Lunch / Hygiene	**12:30** Math
12:30 Group Leisure/Art/Fitness/ Music *(Choose 1)*	**12:30** Group Leisure/Art/Fitness/ Music *(Choose 1)*	**1:45** Math	**12:30** Lunch Clean-up; Individual Leisure	**1:00** Group Leisure/ Fitness / Music *(Choose 2)*
1:15 Science	**1:15** Science	**2:15** Language Arts	**1:15** Science	**2:45** Snack Break/ Restroom
2:00 Vocational	**2:00** Vocational	**2:45** Snack Break/ Restroom	**2:00** Vocational	**3:15** Classroom jobs
2:45 Snack Break/ Restroom	**2:45** Snack Break/ Restroom	**3:15** Classroom jobs	**2:45** Snack Break/ Restroom	**3:30** Students leave for home
3:15 Classroom jobs	**3:15** Classroom jobs	**3:30** Students leave for home	**3:15** Classroom jobs	
3:30 Students leave for home	**3:30** Students leave for home		**3:30** Students leave for home	

VI. References

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