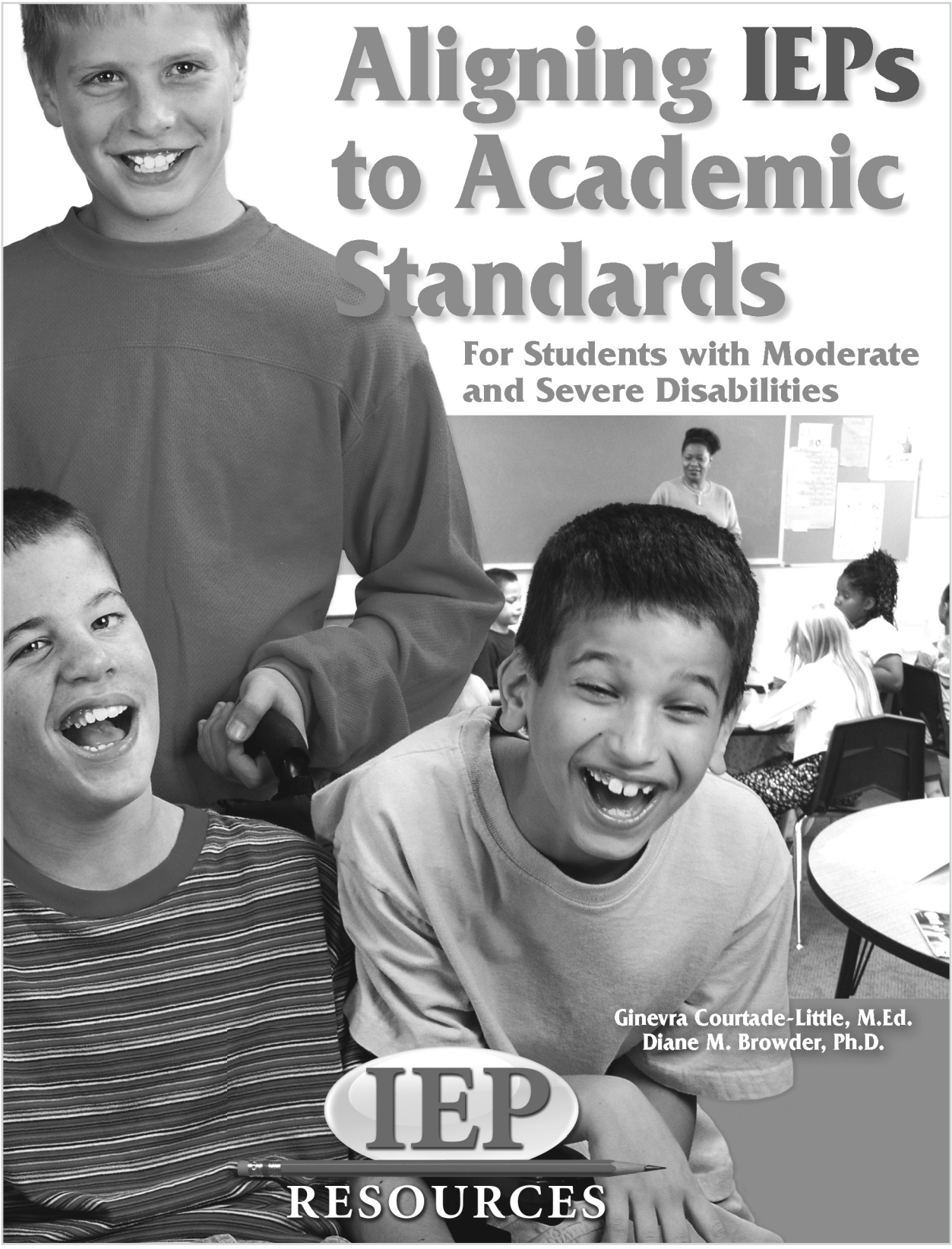
Aligning IEPs to Academic Standards

For Students with Moderate and Severe Disabilities



Ginevra Courtade-Little, M.Ed.
Diane M. Browder, Ph.D.

IEP RESOURCES

Win/Mac CD

This CD contains a printable PDF of the entire book. You can review and print pages from your computer. The PDF (portable document format) file requires Acrobat Reader software.

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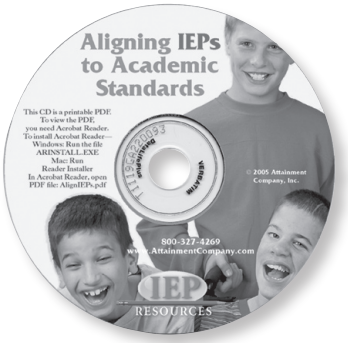

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Ginevra Courtade-Little, M.Ed., works for the Charlotte Mecklenburg School system in Charlotte, NC. She serves as a project trainer for which she conducts classroom consultations and training for participants in a federal grant facilitating teaching academics to students with significant disabilities. She also serves on the North Carolina Alternate Assessment Portfolio Advisory Committee. Prior to her current role as project trainer, Ginevra was a field coordinator for the Charlotte Alternate Assessment Project, another federally funded grant. Ginevra also taught students with moderate and severe disabilities for three years and students with mild disabilities for one year.

Ginevra is currently pursuing her Ph.D. in Special Education at the University of North Carolina at Charlotte. This program and her work on the grants have given her many professional opportunities. She has presented information and findings about teaching students with significant disabilities at national, state, and local conferences. She has also had the opportunity to contribute writing to book chapters in two special education textbooks and a professional journal.

A native of Buffalo, NY, Ginevra currently lives in Charlotte with her family: her very supportive husband, Brian and her dog, Bailey.

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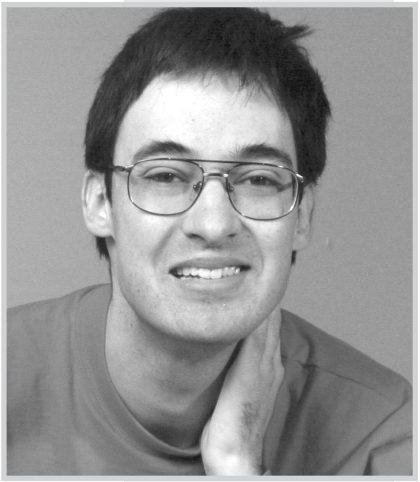
Dr. Diane Browder received her bachelor's degree in psychology from Duke University and her master's and doctoral degrees in special education from the University of Virginia. In her early career, she was a recreational therapist at Duke hospital and a cross categorical special education teacher in Nelson County, Virginia. Dr. Browder spent 17 years at Lehigh University in Bethlehem, Pennsylvania where she served as professor and coordinator of special education. While at Lehigh, Dr. Browder developed a model program for children with autism, community services for adults with severe disabilities, and supported employment for individuals with a wide range of disabilities. She also received federal funding to study extended school year services and to enhance inclusion of students with behavior disorders and autism. In 1998, Dr. Browder joined the UNC Charlotte faculty as the Snyder Distinguished Professor of Special Education. At UNC Charlotte, she is coordinator of the doctoral program in special education and teaches doctoral coursework on research design. Dr. Browder has numerous publications in special education and is best known for her books on assessing and teaching students with severe disabilities.

Dr. Browder's current research focuses on access to the general curriculum for students with severe disabilities. At UNC Charlotte, she coordinates a U.S. Department of Education research grant on reading for students with moderate and severe disabilities called Project RAISE. Dr. Browder also participates in state and national policy discussion related to alternate assessment and is a partner in the National Center on Standards and Achievement.



Chapter 1
Introduction

What Does Alignment to Academic Standards Mean?

Suzanne is in 5th grade and her IEP will be different this year. While she will continue to have goals related to her expanded use of an augmentative communication system, Suzanne will now also pursue goals that focus on her acquisition of daily living skills, like putting on her coat and personal grooming. In addition she will learn to participate in her IEP meeting by helping to choose her own goals and signing her name. What also will be different is that for the first time Suzanne will have some academic goals that promote her participation in the 5th grade curriculum. While Suzanne has had academic goals before – she learned to select a dollar for a purchase she wanted to make and was able to read pictures/ sight words on her schedule – now she will have academic goals that focus on her state's standards for 5th graders. For example, her new goals will help her gain meaning from chapter books read by peers and find solutions for everyday math problems. These changes will prepare Suzanne to participate in her state's alternate assessment and will promote skills that can provide her with a lifelong benefit (for example, sharing literature.) This year Suzanne will have the benefit of a **standards-based IEP** with goals that are **aligned** with the state's academic content standards for her assigned grade level.

To develop a standards-based IEP you must first understand the concept of alignment.

Alignment is . . . a matching of two educational components which strengthens the purpose and goals of both . . .

. . . For example, instruction can be aligned with assessment; assessment can be aligned with state standards; IEPs can be aligned with state standards to help align instruction with the general curriculum.

Developing standards-based IEPs for students with moderate and severe disabilities is a developing educational trend. In the late 1990s, educators began to respond to the requirements of IDEA 1997 to promote access to the general curriculum and to include all students in state and district assessments. Some students with significant cognitive disabilities needed alternate assessments because they could not participate in large scale assessments with accommodations. As educators began to develop and administer alternate assessments, it soon became clear that for students to demonstrate the state standards targeted by these assessments, they needed instruction that was "aligned" to these standards. However, to develop a standards-based IEP you must first understand the concept of alignment.

Alignment is a matching of two educational components which strengthens the purpose and goals of both. For example, instruction can be aligned with assessment; assessment can be aligned with state standards; and IEPs can be aligned with state standards to help align instruction with the general curriculum. Before considering alignment in more detail, it's helpful to consider three reasons why alignment is important.

1. IEPs aligned with state standards can prepare students for state assessments.

Many students with moderate and severe disabilities participate in alternate assessments because they are not able to participate in large scale assessments with accommodations. No Child Left Behind requires reporting adequate yearly progress for all students in reading, math, and science. Some students who participate in alternate assessments can be reported as achieving adequate yearly progress if they meet a state's alternate achievement standards. The application of alternate achievement standards is only appropriate for students with significant cognitive disabilities and must be limited to no more than 1% of the student population.[1] Alternate achievement standards specify performance levels that are aligned with grade level content standards but set different performance levels. To meet these

[1] For more information on the use of alternate achievement standards for reporting adequate yearly progress, see the Federal Register December 9, 2003.

alternate achievement standards, students need instruction that is aligned with the academic content standards for their grade. The IEP is not meant to restate all of these content standards, but should specify skills for the student to acquire that will promote access to this curriculum and help the student meet the alternate achievement standards.

2. For students to show progress in academic content, they need academic instruction.

Sometimes educators have taught functional curriculum as a replacement for the general curriculum. Functional skills are important for increased independence and transition to adult living, but students also need the opportunity to participate in the general curriculum for their grade level. Young students especially need the opportunity to gain skills in literacy and math. Sometimes in the past students with moderate and severe disabilities received little or no academic instruction. Because students with moderate and severe disabilities need direct and systematic instruction, they are not likely to learn academic skills unless they receive this instruction. The IEP is not intended to define all of this instruction nor does it function as the student's curriculum. Instead, it points the way for you to set priorities for what the student will master and how he will access the broader content.

Functional skills are important for increased independence and transition to adult living, but students also need the opportunity to participate in the general curriculum for their grade level.

Young students especially need the opportunity to gain skills in literacy and math.

3. Well aligned IEPs can promote meaningful academic instruction.

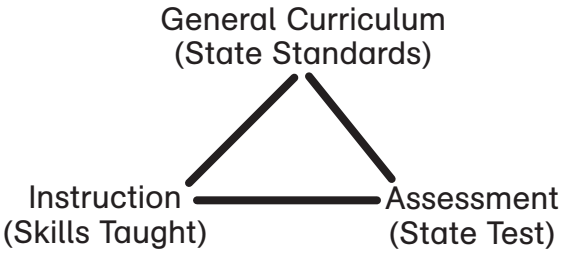
Deciding what academic skills to teach students with moderate and severe disabilities can be difficult. Sometimes the goal that is chosen does not appear to be "really reading" or "really math" when presented to general educators. Sometimes it is clearly academic, but with little real life use or meaning for the student. Sometimes it is academic, but not relevant to the student's current grade level content. Knowing how to align an IEP to state standards can help planning teams select academic goals that are meaningful for the student and promote access to the general curriculum.

Further Understanding Alignment

Notice that the instruction addresses content to be covered by the state test and links to the state standards.

Alignment occurs when there is a match between the written, taught and tested curriculum. The alignment of these educational components can be illustrated as follows:

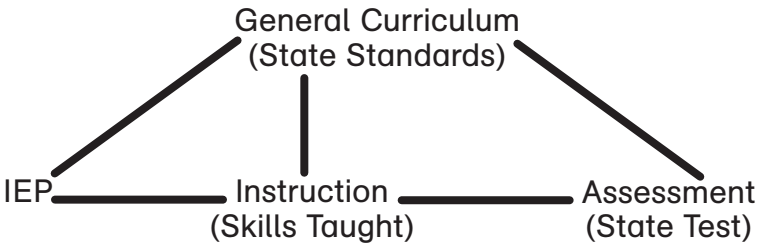
When Educational Components Align



Note that the IEP helps focus the instruction.

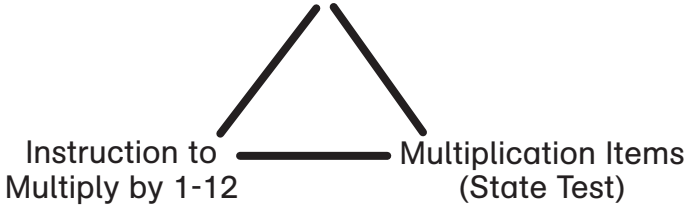
The IEP can help define priorities for student mastery within this curriculum and skills students can use to access grade level content. When a student has an IEP, well aligned educational components can be illustrated in this way:

When IEPs Promote Alignment



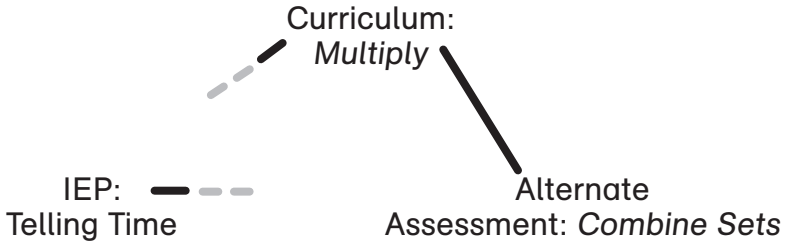
To consider what the pattern looks like when IEPs don't align, consider a hypothetical general education context in which educational components are aligned. For example, Ms. Jones is teaching her third grade class to multiply using numbers 1-12. Her state's 3rd grade mathematics standards include beginning multiplication. The state's 3rd grade math assessment will measure how well her students multiply. In this example, the taught curriculum aligns well with both the written curriculum (state standards) and tested curriculum (state test). The alignment can be diagrammed like this:

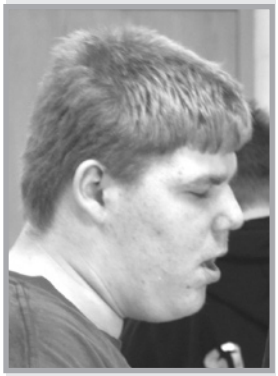
Alignment for 3rd Grade Math Standard



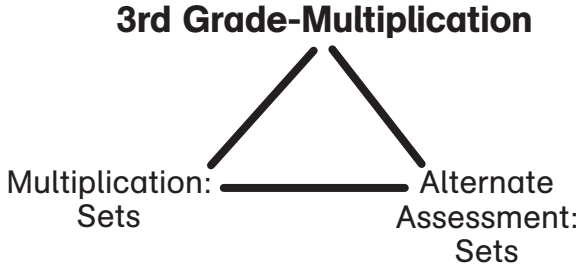
Ms. Smith is the special educator for 3rd grade students with significant cognitive disabilities. Her students participate in the state's alternate assessment. One portion of the assessment determines if students can group items and count the sets (concrete form of multiplication). The only math skill Ms. Smith has targeted for student IEPs is telling time. In the following example, students do not have instruction aligned to states standards:

Instruction Not Aligned to State Standards



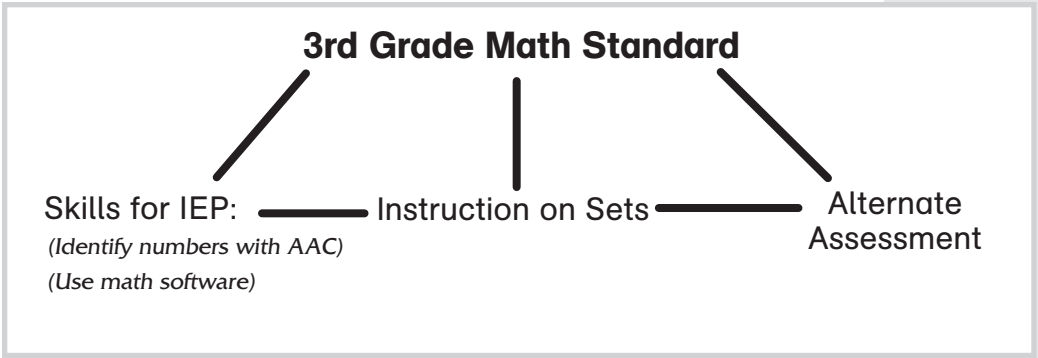


To her credit, after learning more about alignment to state standards and considering her students' skills, Ms. Smith decides to add instruction on combining sets for her 3rd grade class. They practice this skill as an early vocational task in creating supplies packets at a job site. For example, the teacher has them make three sets of art supplies with two pens in each set. They then find out how many pens they have used in all. To further help her students understand, Ms. Smith uses pictures of the task with numbers and the mathematical signs "x" and "=". And she helps select materials for Ms. Jones' mainstream 3rd grade class to practice multiplication with concrete objects. She works with Ms. Jones so her students can participate more fully in the multiplication lessons by working with peers who check their multiplication worksheets by creating sets of items. Ms. Smith now has instruction that aligns as follows:



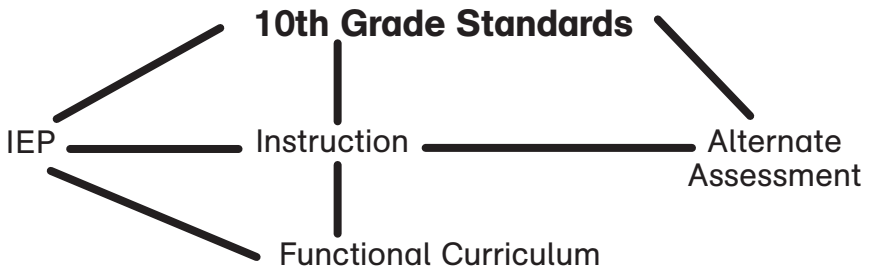
The IEP team can become aware of the importance of multiplication in 3rd grade math by reviewing the state standards and having the general education teacher, Ms. Jones, share how they focus on these standards. When planning for John's 3rd grade year, Ms. Smith is aware that he's challenged in learning to combine sets because he has only limited use of one hand. He makes most of his responses through the use of his voice output picture communication AAC device or through using a switch that

functions as a mouse for the computer. Currently, he only uses the switch to activate cause and effect software games. To master the concept of combining sets, first John needs to learn how to create and then count sets. So the team decides that one IEP goal will be for John to learn to use the first portion of a math software program that introduces multiplication by showing pictures of arrays of items. John also needs to learn to identify numbers with his AAC. This goal will provide broader access to numerous math activities in 3rd grade. Here is how his IEP promotes alignment of his instruction to the 3rd grade math standards:



Alignment with high school curriculum can be especially challenging when the gap between the general curriculum and students' current academic skills is large. For example, state standards for 10th grade English target understanding symbolism in poetry and other literature. Here the IEP team is planning for Ramona, a student with significant cognitive disabilities who currently has no reading skills, but enjoys the social context of being with typical peers in English class. The IEP team wants to build on Ramona's social success by promoting some literacy skills that link to the poetry focus of 10th grade. Since Ramona has used picture symbols for basic needs and social communication, the IEP team considers how

she might learn the more abstract symbols of poetry. Similarly, the team considers the state standards in other academic areas like math and science. Because of Ramona's age, the team also wants to target functional skills like learning to follow picture/ word directions to complete a vocational task. The following diagram shows how the team uses the IEP to focus on both functional and general curriculum. While this state's alternate assessment only targets academic skills, Ramona's progress in learning functional skills is also important for her transition planning.



Selecting IEP Goals to Promote Alignment

Once the concept of alignment is clear, it's helpful to consider guidelines for developing an IEP that includes goals that align to state standards. The product that results from this process is a **standards-based IEP**. These guidelines require learning more about the general curriculum as outlined in the state standards and determining how to create access to it for your students with significant cognitive disabilities.

Guideline One: Become Familiar with State Standards

The IEP team first needs to become familiar with state standards for the student's assigned grade level. The "assigned" grade level, usually based on chronological age, typically differs from the instructional grade level for students with significant cognitive disabilities. For example, a student who is 7 years old will probably be assigned to 2nd grade. In contrast, her "instructional" grade level may be at a beginning point of academic learning and may not correspond to a specific grade level designation. In focusing on alignment, the educational team considers how to create access to the student's assigned grade level (e.g., 2nd grade) while also using information on present level of performance (instructional level), to pinpoint objectives for academic learning. The following figure illustrates this concept.

The "assigned" grade level is usually based on chronological age, which for students with significant cognitive disabilities typically differs from the instructional grade level.

Develop Alignment Based on Assigned Grade Level for General Curriculum Access

Assigned Grade Level:
2nd Grade → 2nd Grade State Standards

Instructional Level: Entry Level Academic Skills (below K-1)

Align to 2nd Grade, not Kindergarten for age-appropriate general curriculum access for students with significant cognitive disabilities.

Information on state standards is typically available on each state's education agency website. In finding the content standards for the student's grade level, it is important to remember that states vary widely in the specificity of standards. Some states have general standards that cross grade levels; others specify standards by grade level. When the state only has general standards, there may be additional educational outcomes (not called standards per se) for the grade levels. Some states provide additional resources for students with significant cognitive disabilities that either

Content standards for student grade level vary widely by state in the specificity of standards. Some have standards that cross grade levels; others specify standards by grade level.

illustrate how to extend state standards or offer instructional ideas. It's always vital know what your state standards require. Table 1.1 provides an example from the Massachusetts Department of Education that includes the state standard, the essence of the standard, and instructional ideas.

Table 1.1 Example Abstracted from the Resource Guide to the MA Curriculum Framework for Students with Significant Disabilities published by Massachusetts Department of Education.[2]

Table 1.1

Grade Level 6-8	
Learning Standard as Written	Recognize that gravity is a force that pulls all things on and near the earth toward the center of the earth. Gravity plays a major role in the formation of the planets, stars, and solar system and in determining their motions. (Standard 8)
Essence of the Standard	Gravity is a force. The effects of the earth's gravitational pull and the motion of objects in the solar system.
Instructional Idea	At grades 6-8 (or an equivalent age), students observe the speed at which objects of various mass fall from the same height. Using a chronometer to accurately measure time, they plot the data as "mass versus time."
How All Students Can Participate in this Activity: Addressing Learning Standards at Lower Levels of Complexity	**Entry Point** Milos uses a spring balance to weigh each object chosen by his lab group. After participating in the experiment with his peers, Milos records the data on a spreadsheet and generates a graph of the results. **Access Skills** Lester helps select the objects for experimentation. He follows directions to drop and test each object with his lab group.

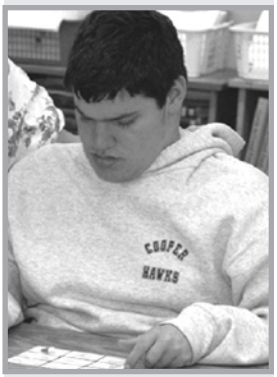
[2] Resource Guide to the MA Curriculum Frameworks for Students with Significant Disabilities. http://www.doe.mass.edu/mcas/alt/rg/sci.pdf (p. 26.) Accessed September 13, 2004.

Not all members of the IEP team may have seen these standards or curricular resources. One or more members of the team may want to share copies of key resources related to this student's grade level. The general education teacher who is a member of the IEP team also can serve as a resource person to the team in understanding the focus of the academic content for this grade level. In high school, it may be important to have general education teachers from each major content area.

Camilla's Scenario

Camilla is a 12 year old 7th grader with significant cognitive disabilities. Her IEP team includes Camilla, her parents, the special education teacher, the speech therapist, physical therapist, occupational therapist, and the general education teachers from the 7th grade team to which Camilla is assigned. Mr. Hargrove, a 7th grade teacher, gave Camilla's parents and therapists copies of the state standards and 7th grade learning goals prior to the IEP meeting. He also read them with Camilla prior to the meeting. At the meeting he had each 7th grade teacher describe their curricular priorities for the year.

Camilla's IEP team includes her parents, the special education teacher, speech, physical and occupational therapists, and the general education teachers from the 7th grade team to which Camilla is assigned.



Guideline Two: Become Familiar with the State's Approach to Alternate Achievement Standards

States can use alternate achievement standards in considering Adequate Yearly Progress (AYP) for up to 1% of students with significant cognitive disabilities.

As described earlier, states can use alternate achievement standards in considering Adequate Yearly Progress (AYP) for up to 1% of students with significant cognitive disabilities. The IEP team needs to know if their state uses alternate achievement standards and if so, which specific standards are used. These standards don't replace the academic content standards that apply to all students, but instead define a different level of achievement needed to be considered proficient. Typically, this proficiency will be determined through the use of the state's alternate assessment. The team will consider what expectations come from these standards and which types of skills their students need to perform to show proficiency in the state's alternate assessment. For example, in the Massachusetts system shown in Table 1.1, (Pg. 16) students may address a learning standard at three achievement levels: 1. As written for the grade level (on grade level), 2. At an "entry point", or 3. As an "access skill". Examples of the types of performance for the entry point and access skill are shown in Table 1.1 for this standard. If the student is not currently in a grade for which AYP is applied, consideration of alternate achievement standards may not be relevant for that year's planning.

Camilla's state does permit the use of alternate achievement standards in computing AYP for students with significant cognitive disabilities.

Camilla's Scenario, continued . . .

Camilla's state does permit the use of alternate achievement standards in computing AYP for students with significant cognitive disabilities. Her state also provides a curriculum resource with examples of tasks that link to state standards at each grade level. The special education teacher makes a copy of the state's policy on alternate achievement standards for the IEP committee and reviews the curriculum resource guide. She decides to bring a copy of the guide as a resource for the IEP meeting.

Guideline Three: Keep the Planning Student-Focused

Sometimes the state standards and requirements for assessment may seem to overwhelm the IEP process. To keep the planning focused on this student's individual needs, begin with an overview of recent progress and strengths. The student might begin the meeting by reviewing recent achievements. Members of the team who have conducted recent assessments and worked with the student can present their findings to begin building a consensus of the student's educational needs. The student's preferences and individual goals can then provide a starting point for planning.
The team should consider the student's current academic, communication, and other skills to identify skills that can be used to promote access to the grade level content and accommodations and supports that will be needed.

Sometimes state standards and assessment requirements may seem to overwhelm the IEP process. To keep the planning focused on the student's individual needs, begin with an overview of recent progress and strengths.

Camilla's Scenario, continued . . .

Camilla is learning to direct her own IEP meetings. She begins the meeting by using her AAC device to give a greeting and to ask participants to introduce themselves. After the introductions, she presents a power point presentation of her recent achievements. Next, team members summarize her present level of performance. Camilla then continues her power point presentation showing pictures of her preferences and goals. Both Camilla's goals and the various team members' reports produce draft goals for the IEP that focus on Camilla's need to expand her communication skills, improve range of motion, and participate more in her personal care. She asks for goals related to her love of swimming, to have more time with friends, and to use the computer. Her parents affirm these goals and note their priority that the team "not give up" on teaching reading to Camilla.

Camilla is learning to direct her own IEP meetings. She begins the meeting by using her AAC device to give a greeting and to ask participants to introduce themselves.

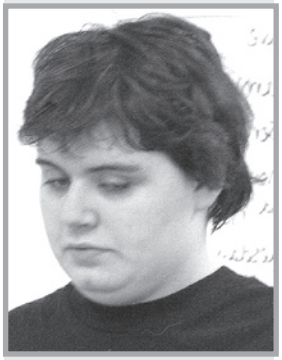
Guideline Four: Consider Both Specific Academic Goals and Broad Access Goals

With student individual needs and preferences articulated, the team can consider ways to access the grade level content that will be meaningful for this student and address the state's standards. At this point in the meeting it may be helpful for the general education teachers to discuss the highlights of the curriculum for that grade level and for the team to have the state standards in front of them. In selecting goals, the team should consider each academic content area. The team should not try to recreate this entire curriculum on the IEP, for example, by writing a goal for every science unit.
Instead, the team should focus on priorities for academic learning and skills to access the broader curriculum. The following figure illustrates how the IEP creates access to the curriculum. Note that the IEP is not meant to be a curriculum.

IEP Creates Access to the Curriculum—

—but Is Not Itself a Curriculum

Camilla's Scenario, continued . . .



In reviewing both the science and math standards, the team realized that Camilla did not have the symbols in her AAC system to be able to communicate math and science concepts. They developed an IEP that focused on increasing her use and comprehension of 20 key words and symbols that she would frequently encounter in these subjects. For both social studies and science, Camilla would need an alternative to the paper and pencil activities that were frequently used by the class. The team determined that another access goal, one that would also relate to her preference for computers, would be to learn to select a picture from an array scanned from pictures in the textbook and related resources to express key concepts. One of the specific math skills for her to master this year, as the 7th graders focused on data compilation and analysis, was the preparation of graph using spreadsheet software. They talked with Camilla about making some graphs related to her swimming activities. To participate more fully in 7th grade English, they targeted having Camilla select pictures to identify the main idea or character of a story read by one of her friends. To keep working towards reading, they decided to also have her participate in a remedial reading class that used systematic phonics instruction. They also decided to use short summaries of stories from English or information from Social Studies written using a software program that generates picture-word symbols. The teacher would begin with single words and short phrases and build towards passage reading.

In social studies and science, Camilla needs an alternative to the paper and pencil activities frequently used by the class. So the IEP team determined that an access goal, that would fit her preference for computers, would be learning to select one picture from an array of scanned pictures in the textbook as well as other related resources to express key concepts.

Sometimes in extending the state standard, the essence of the academic component is lost. General education teachers can insure that IEP goals have clear links to academic content.

Guideline Five: Ask the Question, "Is it Really Reading and Really Math?"

After choosing some academic content and access skills, it is important for the team to take a second look at the goals and consider the question, "is this really reading?" (or math, or science, etc.). Sometimes in extending the state standard, the essence of the academic component is lost. The general education teachers can be especially helpful as resource people in making sure that the final goals have clear links to academic content. Consider the following examples to see how some align more closely to the original content.

The State Standard

Students will identify, analyze, and apply knowledge of the structure and elements of fiction and provide evidence from the text to support their understanding.

7th Grade

Locate and analyze elements of setting, characterization, and plot.

Example 1

Camilla will use her AAC to greet peers in English class.

Is this really reading?

No. Although this is an important social skill the team will probably want to keep on the IEP, it is not a reading skill. Camilla needs additional language arts objectives that focus on reading.

No.

Example 2

Camilla will acquire 20 sight words that relate to activities in her community and home.

Is this really reading?

Yes, it's reading, but it does not link to the specific state standard that other 7th graders will be learning. Again, the IEP team may keep this objective, but more work is needed to access the general curriculum.

Yes, but it doesn't align.

Example 3

Camilla will select pictures to represent the main ideas, setting, or characters of a story.

Camilla cannot read 7th grade passages, but she can access age appropriate literature by listening to stories or story summaries read to her by peers.

Is this really reading?

Yes, it is listening comprehension. Camilla cannot read 7th grade passages, but she can access age appropriate literature by listening to stories or story summaries read to her by peers. This task also links to the 7th grade focus on characterization, plot, and setting.

Yes, this is a well-aligned objective!

Example 4

Camilla will identify initial consonant and vowel sounds and use this skill in writing words with software that anticipates the spelling from the first letters.

Because of Camilla's age, she will also be learning to apply emerging phonics skills to writing.

Is this really reading?

Yes, phonemic awareness is a critical step towards reading. Because of Camilla's age she will also be learning to apply emerging phonics skills to writing. In contrast, this goal does not directly align with the 7th grade focus on the elements of fiction. Camilla will be developing basic skills while being exposed to grade level curriculum. This is a goal that broadly accesses the curriculum, (overall alignment) that supplements well the specifically aligned objective shown in Example Three.

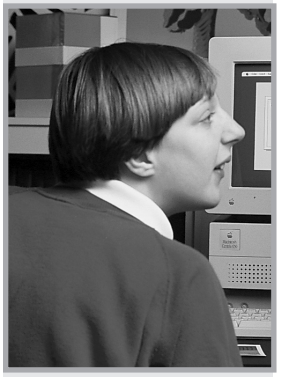
Yes, this is a goal that broadly accesses the curriculum!

Guideline Six: Do Not "Force Fit" All IEP Objectives into Alignment with Academic Standards

Students with significant disabilities may require therapy and functional goals that will be part of the IEP but do not have any clear links to state standards. A standards-based IEP may have some goals that do not align with state standards. However, an IEP team can get off track if it begins with the therapy and functional goals and tries to back map them to academic standards. For example, a student may need to continue learning toileting skills. Trying to determine a reading or math standard that links to toileting can be either a waste of time or promotes instruction that infringes on the person's privacy and dignity. Toileting is a legitimate goal in itself that need not link to an academic content standard. A better approach is to develop academic goals by *beginning* with the academic content standards rather than trying to back map functional goals into the grade level standards.

Standards-based IEPs may have some goals that don't align with state standards . . .

. . . For example, for some students, toileting is a legitimate goal in itself that need not link to an academic content standard.



Camilla's Scenario, continued . . .

Camilla's team was pleased with the goals they selected for the IEP. Several of these goals had direct alignment to reading, math, science, and social studies standards for 7th graders. Some, like learning to select pictures related to concepts, provided broad access for participation in the general curriculum. In contrast, Camilla also had goals for daily living skills and therapy goals that were important individual priorities, but were not aligned to academic content standards. She also had goals related to her interest in swimming (participation with a swim team) and her friends (making social plans). The result was that Camilla had an IEP that was both standards-based and student-focused.

Writing Measurable IEP Objectives[3]

In developing the IEP, it is important to write objectives that have several qualities. First, short term objectives should provide a progression towards achievement of the annual goal. Second, the objectives should target skills that are clearly measurable. These objectives should also target active student participation.

Once the IEP team has identified general goals for the student, it's important to translate them into specific, measurable short term objectives.

Developing Short Term Objectives

Once the IEP team has identified general goals for the student, it's important to translate them into specific, measurable short term objectives. To define these objectives, consider the student's present level of performance related to the annual goal. For example, one of Camilla's goals was to select pictures to represent concepts in her academic studies. Currently, Camilla can select some picture symbols on her AAC. She also will point to pictures in a magazine when asked questions like, "Where is the dog?" In contrast, she has not yet learned to use pictures to represent broader concepts (e.g., map of the United States to represent that country). The team can build from this present level to an annual goal, by writing objectives that fill in the levels between the two points. Transforming Camilla's present level of performance to an annual goal may look like this:

	Camilla's Objectives
Present Level of Performance	Camilla uses her AAC device to ask for basic needs and greet friends using pictures. She also will point to pictures of familiar objects or people. She does not yet use pictures to represent a concept.
Objective 1	Given familiar pictures and symbols presented on the computer, Camilla will select the picture or symbol named.
Objective 2	Given a three choice array of pictures that relate to the lesson and asked show me ____ (e.g., "tornado"), Camilla will select the picture that shows the concept (e.g., "tornado").
Objective 3	When asked, "What was the lesson about today?" Camilla will select a picture from a three choice array.
Annual Goal	Given a variety of academic topics, Camilla will select pictures to represent major concepts described in class.

[3] This information on writing IEP objectives is adapted from Bateman and Herr, *Writing Measurable IEP Goals and Objectives*, Attainment Company/IEP Resources Publication. (2003).

Writing Measurable Goals

All goals that are written should be measurable. A measurable goal is one that when written, the entire IEP team or anyone else working with the student, can agree that its objectives have been met. The following are examples of non-measurable and measurable goals:

Non-Measurable Goal	Measurable Goal
Jenny will increase her sight word vocabulary. **(Increase to what?)**	**Jenny will read 10 new sight words.**
Jackie will improve her measurement skills. **(Improve to what level?)**	**When shown measuring devices, Jackie will identify a 1 cup measure, a ½ cup measure, a teaspoon, and a tablespoon.**
Mike will identify his personal information. **(What information should he identify?)**	**When shown his telephone number and two distractors, Mike will correctly identify his telephone number by pointing to it.**

A measurable goal . . . a goal where the entire IEP team, or anyone else working with the student, agrees that its objectives have been met.

Writing Goals for Active Participation

Active participation in the general curriculum occurs when the student acquires independent responses that demonstrate understanding of the academic content standard.

As the IEP team is developing measurable goals, it's important to consider how the student can be an active learner. Active participation occurs in the general curriculum when the student acquires independent responses that demonstrate understanding of the academic content standard. In contrast, a "passive" skill is one in which the student simply has to cooperate with or tolerate physical or other guidance. For some students with severe cognitive and physical disabilities, it may be difficult to target an independent response, but active participation is possible if the student has at least one voluntary movement.

For example, a student who has physical disabilities may not have the fine motor skills to point to a book that he would like read to him. A passive approach to this goal would be to use hand over hand assistance to help him choose a book. In this example, the teacher is actually making a choice for the student, leaving him with no independent response.

The student's preference of book to be used for the literacy activity is not acknowledged. An **active** alternative would be to have the student use eye gaze (independent, voluntary response) to indicate which of book he would like. Or, the student might use a switch connected to a computer that is scanning through book selections (independent, voluntary response). The following table provides several examples of how to modify objectives to promote active academic learning.

Table 1.2

Active Objectives for Academic Learning

Passive Responses (that don't require independent responses)	**Active Responses** (that simplify physical demands and focus on independence)
Brittany will circle the correct answer with physical guidance to answer comprehension questions. **Problem with this approach:** *Brittany's physical disabilities do not permit her to use a pencil without help. This assistance can not be faded. There also is no way to determine if Brittany has any understanding of the task.*	Brittany will use a laser head pointer (or small flashlight) to select between two pictures projected on a screen to answer comprehension questions. **Advantage of this approach:** Brittany has the head control to move the light to her selection. Words can be presented with the pictures with the long term goal of fading the use of pictures.
Kevin will listen to a story the teacher is reading. **Problem with this approach:** *"Listening" is not an observable, measurable response. Students who are quiet and looking at the reader may not be attending. Kevin could be daydreaming.*	Kevin will touch the page to indicate it is time to turn it after the teacher has read each page. **Advantage of this approach:** Kevin is now actively engaged with the reader. Kevin might also have a goal like Brittany's to show comprehension. The teacher might also ask him to touch pictures on the page as they are named in the story.
Kirsten will accompany her peer to buy lunch. **Problem with this approach:** *Kirsten is not performing any part of the academics of paying for her lunch; she is merely accompanying someone else.*	Kirsten will ask a peer to help her purchase lunch by finding the symbol $ on her AAC, to communicate "help me pay." **Advantage of this approach:** Kirsten is now actively engaged in paying for her lunch. As she learns more about money she may indicate how much her peer should give the cashier.

Strategies for Alignment to State Standards

One of the most difficult challenges educators face is determining ways to make state standards accessible to students who currently have few academic skills. For example, how can a student with limited use of symbols access general curriculum that focuses on literary concepts in high school? Or, how can a student who is only beginning to recognize numbers access mathematics content that is introducing concepts like fractions? These are not easy questions to answer, but we would like to offer four ways to generate ideas for creating access to state standards. Each of these ideas will be described in the chapters to come.

One of the most difficult challenges educators face is determining ways to make state standards accessible to students who currently have few academic skills.

- ✦Select skills that promote overall literacy and numeracy
- ✦Focus on self-determination skills
- ✦Using assistive technology to increase active, independent responding
- ✦Use functional activities to give meaning to the academic concept

Chapter 2

Presents the components of literacy and numeracy, giving an explanation and examples of each component. Chapter 2 also includes ideas on how to consider different levels of symbols students may use.

Chapter 3

Describes how to focus components of self-determination. Ideas will be given about ways to incorporate self-determination skills into academic objectives.

Chapter 4

Explains how to create access to the general curriculum with the use of switches and augmentative communication devices. Chapter 4 will also give examples of software that may make access to the general curriculum possible. Examples of objectives that are made possible by the use of assistive technology will also be given.

Chapter 5

Reviews the concepts of functional and age appropriate activities. Chapter 5 will also review functional life domains and demonstrate how teachers can cross reference literacy and numeracy components and functional activities to create meaningful objectives.

Chapter Two
Strategies for Alignment

Promote Broad Skills in Literacy and Mathematics

The first strategy to consider when creating IEP objectives that align with academic content standards is that of focusing on skills that promote broad concepts in literacy and mathematics. One of the challenges of developing standards-based IEPs is that the discrepancy between the student's assigned grade level (e.g., 8th grade) and instructional level (e.g., nonreader) may be large. But to address the student's current instructional level, the educational team selects specific objectives that promote student mastery of new literacy and numeracy skills while also teaching the concepts of grade level content.
Note that to promote mastery of these early literacy and numeracy skills concurrent with grade level content, it's necessary to understand the components of these skills.

One challenge of standards-based IEPs is that there may be a discrepancy between assigned grade level (student is in 8th grade) and instructional level (student is nonreader).

Many state standards in language arts parallel the components of literacy developed by the International Reading Association and the National Council of Teachers of English.

Promoting Literacy Skills

Literacy Components

Many state standards in language arts parallel the components of literacy developed by the International Reading Association and the National Council of Teachers of English. These components are shown in Table 2.1.

Table 1.1

Excerpts of IRA/NCTE Standards for the English Language Arts (1996)[4], Explanations for Each Standard and Examples

Excerpt	Explanation	Examples
1. Students read print and non-print texts to build an understanding of texts, acquire new information, for personal fulfillment, and to build an understanding of human experience.	The standard deals with basic alphabetic and decoding skills.	• Recognize high frequency words in text. • Read independently to build background knowledge.
2. Students apply strategies to comprehend, interpret, evaluate, and appreciate texts using prior experience, interactions with others, knowledge of word meaning, word identification strategies, and understanding of textual features (e.g., sound-letter correspondence, sentence structure, context, graphics).	The standard deals with comprehension of what is being read.	• Predict events in texts during reading. • Evaluate usefulness and quality of information.
3. Students communicate with different audiences.	Students will use proper language skills when communicating	• Use correct subject/ verb agreement • Determine the impact of word choice on spoken language

(Continued next page)

[4] National Council of Teachers of Math-Principals and Standards for School Mathematics http://standards.nctm.org/document/chapter3/index.htm (Accessed Sept. 24, 2004).

Excerpt	Explanation	Examples
4. Students write to communicate with different audiences.	Students will communicate through writing.	• Use capital letters • Compose a book report.
5. Students apply knowledge of language structure, conventions (e.g., spelling and punctuations), media techniques, figurative language, and genre to create, critique and discuss texts.	Students will create new text and critique text that has been read.	• Discuss the author's choice of nouns and verbs in text on comprehension on the text. • Respond reflectively to different types of text.
6. Students conduct research by using a variety of resources (e.g., libraries, databases, computer networks, video) to generate ideas, questions and pose problems. They gather, evaluate, and synthesize data to communicate their discoveries.	Students will conduct research and communicate what has been discovered.	• Use the library data base to discover facts about a favorite author. • Conduct research on types of poetry and report on the differences.
7. Students develop an understanding of diversity in language use across cultures, ethnic groups, geographic regions, and social roles.	Students will be exposed to and learn about different cultures through text.	• Student will compare settings in world literature. • Student will analyze themes and characters in world literature.
8. Students use spoken, written, and visual language to accomplish their own purposes.	Students will communicate for their own purpose.	• Student will compose a persuasive speech. • Student will write an account of personal experiences.

Another way to think about the components of literacy is to consider the five essential components of reading identified by The National Reading Panel, including:

1. Phonemic awareness

2. Phonics

3. Fluency

4. Vocabulary

5. Text comprehension

Phonemic awareness is critically important so students can learn to associate phonemes in words and the letters that represent these sounds.

Phonemic awareness is the ability to recognize the individual sounds, or phonemes, in spoken words. This skill is critically important so students can learn to associate phonemes in words and the letters that represent these sounds. Early phonemic awareness may involve word awareness. For example, the student may select a picture symbol to complete a repeated story line. The student may also begin to recognize if words rhyme. Next the student learns to recognize words that begin with the same sound and finally to pronounce the separate sounds in a word like "jam" /j/ /a/ /m/.

Phonics is the ability to pair spoken sounds and the letters in words. Phonics gives students the skills they need to decode and spell new words. Students pair knowledge of the printed alphabet with the phonemes in a word. While students may master learning to read some words "on sight," phonics is critical to learning to read.

Fluency is the skill to read text quickly and accurately. Fluency is associated with the comprehension of text. To understand the text, students need to be able to recognize most words at a single glance and read text smoothly and accurately.

Vocabulary is also important in learning to read. Students need to learn to recognize words quickly and to comprehend what these words mean. Students with significant cognitive disabilities may learn to recognize large numbers of sight words, but have little use for this knowledge if they do not know what the words mean. Students need to learn the meaning of words that are not already part of their communication system.

Comprehension involves gaining meaning from both individual words and passages. Even before students learn to decode or recognize printed words, they begin to acquire comprehension skills through listening to passages that are read and to demonstrate understanding. They can also help to compose stories using their communication system.

One way to consider present level of performance is to identify the extent to which the student currently uses symbols and is able to display the essential components of reading.

Present Level of Performance

To consider how to promote early literacy skills while focusing on state standards in language arts, it's also important to consider present level of performance. One way to do this is to identify the extent to which the student currently uses symbols and displays the essential components of reading.

Beginning Symbolic/Pre-Literacy

Some students have not yet acquired the skills to discriminate between pictures or other symbols. They may have IEP objectives on learning to use an AAC system or other form of assistive technology. They may currently rely on nonsymbolic communication like sounds, movement and facial expressions. These students may also have few current literacy skills. They may not yet interact with books or listen to stories

Some of the skills that might be taught to access language arts at this level are illustrated in the following examples. Jordan is a student who will be learning to use AAC concurrently with his reading lessons in 3rd grade:

Jordan's Examples

- ✦Jordan will select an object/picture to complete a sentence from a familiar sentence
- ✦Jordan will choose a book to be read through eye gaze
- ✦Jordan will indicate when to turn the page by hitting a switch when the reader pauses
- ✦Jordan will find an object/picture that corresponds to the pictures and story that has been read to indicate the main idea of the story

Early Symbolic Use and Emerging Literacy

Students at this second level are beginning to use some symbols including objects, pictures or a few sight words. For example, the student may use a picture schedule to complete daily activities. Or the student may be able to find her name on a wall chart. The student may also have some emergent literacy skills like listening to a story or viewing pictures in a magazine. Students at this level will be learning to apply these skills to broader reading activities as shown in these examples for Chondra, a 7th grader:

Chondra's Examples

- ✦Chondra will prepare report covers using a picture for the main idea and matching letters to create the title.
- ✦Chondra will identify the main characters of a story by using pictures/initial letter sounds for their names. (Using summaries of 7th grade books shortened and adapted for simplified vocabulary).
- ✦Chondra will use IntelliKeys to compose sentences by selecting and sequencing key sight words.

Symbolic Language Arts

Students at the third level have mastered some sight words, and may have some functional academic skills locating community signs like restrooms. These students are ready to begin expanding their use of symbols to build language arts skills. They may have had extensive instruction in functional reading to learn everyday sight words, but have not learned how to apply skills in age appropriate academic curriculum. The following examples are for Linda, a 10 year old student who has a 50 sight word vocabulary and can use words to perform daily living activities like preparing simple recipes.

She will look at magazines and find sight words in a Word Find Puzzle. She is just beginning to receive instruction in the 5th grade reading program. Her objectives might include:

Linda's Examples

- ✦Linda will spell 20 familiar sight words and 10 novel words (to learn letter-sound associations)
- ✦Linda will apply her emerging spelling skills to compose brief notes using anticipation software (that offers several word choices as each letter is entered).
- ✦Linda will apply her word finding skills to locate character names and key facts to comprehend a passage.

Addressing Both Grade Level Standards and Present Level of Performance

Once grade level standards and present level of literacy skills are known, educators can plan ways to address both the grade level standards and present level of literacy. As explained in Chapter One, it's important for you to focus on aligning to the students' assigned grade level standards. With creativity, your team may also find ways to promote emerging literacy while addressing these standards. So instead of beginning at some lower grade level (e.g., Kindergarten standards) and trying to work up to student age levels (e.g., 8th grade), your team should begin with the age level (8th grade) and incorporate

Once grade level standards and present level of literacy skills are known, educators can plan ways to address both the grade level standards and present level of literacy.

objectives that will promote literacy from the student's present level of performance. The following table gives examples of literacy skills that address each state standard at each symbolic level to show how to blend the concepts of grade level alignment and present level of performance.

Table 2.2 **Examples of Aligning to the Grade Level Standard that Incorporate Student's Present Level of Performance (Standards from North Carolina Standard Course of Study[5])**

State Grade Level Standard	Component of Reading Targeted	Objectives based on Present Level of Performance
2nd Grade Use word reference materials (e.g., dictionary, glossary) to confirm decoding skills, verify spelling, and extend meanings of words.	Phonemic awareness/ phonics.	**Beginning Symbolic** Ricky will use voice output AAC to confirm picture symbol matches spoken word for 9 words. **Early Symbolic** Nick will confirm selection of 5 words that begin with same sound by using a Language Master. **Symbolic** Jackie will use prediction software to confirm spelling of 10 words from familiar story.
4th Grade Identify and interpret elements of fiction and nonfiction and support by referencing the text to determine the: • plot. • theme. • main idea and supporting details. • author's choice of words.	Comprehension.	**Beginning Symbolic** Leslie will select an object/ picture to represent a story's theme for 4/5 stories. **Early Symbolic** Adam will sequence pictures to retell a story for 2/3 opportunities. **Symbolic** Thomas will fill in sentence starters to identify 5/6 main ideas of fiction or news story.

[5] North Carolina Department of Public Instruction-North Carolina Standard Course of Study http://www.dpi.state.nc.us/curriculum/ (Accessed Sept. 24, 2004).

State Grade Level Standard	Component of Reading Targeted	Objectives based on Present Level of Performance
8th Grade Explore expressive materials that are read, heard, and viewed by: • generating a learning log or journal. • maintaining an annotated list of works that are read or viewed, including personal reactions. • taking an active role in and/or leading formal/informal book/media talks.	Expressive Vocabulary and Comprehension.	**Beginning Symbolic** Lisa develops a log of her five favorite stories by selecting icons/book jackets on the computer. **Early Symbolic** John uses a picture/word rating system to indicate his agreement/disagreement with 9/10 viewpoints in expressive materials. **Symbolic** Kerri leads a small group in a book discussion by reading a list of 5 questions she generates in advance while previewing the book with a peer.
10th Grade (English II) Create responses that examine a cause/effect relationship among events by: • effectively summarizing situations. • showing a clear, logical connection among events. • logically organizing connections by transitioning between points. • developing appropriate strategies such as graphics, essays, and multi-media presentations to illustrate points.	Comprehension Written Expression/ Vocabulary.	**Beginning Symbolic** George will contribute to a group multimedia presentation by selecting 5 Clip Art pictures. **Early Symbolic** Melissa will cut and paste from a list of sight words/ phrases/ pictures to create a power point presentation on a select topic that includes 5 slides with related points. **Symbolic** Jerry will develop an outline for an essay by sequencing and finishing 5 phrases (e.g., "The hurricane was dangerous because . . ." "The news predicted a . . .")

State Grade Level Standard	Component of Reading Targeted	Objectives based on Present Level of Performance
3rd Grade Read independently daily from self-selected materials (consistent with the student's independent reading level) to: • increase fluency. • build background knowledge. • extend vocabulary.	Fluency and Vocabulary	**Beginning Symbolic** Helen paces a story read by a peer by turning each of 10 pages within 10 seconds of when the peer stops reading the page. **Early Symbolic** Brad listens to a book on tape using picture cues/ sight words to keep pace with the tape for at least 10 pages. **Symbolic** Stephanie reads story summaries of 3rd grade stories that incorporate her current sight word/ decoding skills at a rate of 10 words/ minute with 90% accuracy.

State Grade Level Standard	Component of Reading Targeted	Objectives based on Present Level of Performance
11th Grade (English III) Research ideas, events, and/or movements related to United States culture by: • locating facts and details for purposeful elaboration. • organizing information to create a structure for purpose, audience, and context. • excluding extraneous information. • providing accurate documentation.	Vocabulary and comprehension	**Beginning Symbolic** After field trips and presentations on US culture, Cheryl chooses 3 photographs/ pictures that correctly reflect the topic to create an adapted report. **Early Symbolic** Using books and magazines about his favorite U.S. musicians, Adam creates a sight word/ picture poster indicating 5 similarities and differences. **Symbolic** Ava uses the internet and library to view video clips and pictures about 5 civil rights leaders and makes a list of three achievements of each person.

Promoting Mathematics Skills

Components of Mathematics

Similar to literacy, teachers can also create access to mathematics grade level standards while promoting basic concepts of mathematics. Many states developed their math standards to be consistent with those proposed by the National Council of Teachers of Math. While it's important to locate the math standards for your specific state, the follow national standards illustrate the components of math likely to be addressed:

Table 2.3

Mathematics Content Areas, Standards and Examples of Expectations (NCTM, 2000)[6]

Content Areas	Standard	Examples of Expectations
Number and Operations	Understand numbers and number systems and how to represent them, computation and estimation.	Recognize how many in sets of objects. Understand various meanings of multiplication and division.
Algebra	Understand patterns, Use mathematical models to represent and understand quantitative relationships.	Sort, classify, and order by different properties. Model and solve problems using graphs, tables, and equations.
Geometry	Analyze characteristics of two- and three-dimensional geometric shapes, describe spatial relationships, Use visualization and spatial reasoning to solve problems.	Recognize and compare shapes. Use geometric models to represent and explain numerical relationships.
Measurement	Understand measurable attributes of objects, Apply appropriate techniques, tools, and formulas to determine measurements.	Understand attributes such as weight, length, and volume and select the appropriate type of unit for measuring each attribute. Solve problems involving scale factors, using ratio and proportion.
Data Analysis and Probability	Formulate questions, collect, organize, analyze, and display data to answer questions. Develop and evaluate inferences and predictions that are based on data.	Represent data using concrete objects, pictures, and graphs. Use observations about differences between two or more samples to make conjectures about the populations from which the samples were taken.

[6] National Council of Teachers of Math-Principals and Standards for School Mathematics http://standards.nctm.org/document/chapter3/index.htm (Accessed Sept. 24, 2004).

Across the grade levels, students will address increasingly complex material on these components. For example, in the early grades students learn to recognize numbers and count. By the later grades, students are using more advanced concepts like fractions, exponents, and decimals. Similarly, in the early grades students may learn about basic measurements like weight and length. By later grades, they are learning about volume, area, and velocity.

Students who have some understanding of the everyday references to math concepts (e.g., which has "more") have a foundation for ongoing instruction.

Present Level of Performance in Mathematics

Similar to language arts, students' present level of performance in mathematics may be summarized based on the their use of symbols and general knowledge of math. Students who have begun to use mathematic symbols like numerals and computation signs are able to respond in ways that can be used to access grade level content more easily. Similarly, students who have some understanding of the everyday references to math concepts (e.g., which has "more") have a foundation for ongoing instruction. The following describe present level of performance in mathematics.

Beginning Symbolic and Few/No References to Math Concepts/Problems

For some students, the educational team will be planning access to grade level math instruction without the benefit of the student having related symbolic communication. The beginning point for instruction will be to introduce symbols and concepts concurrent with exposure to the grade level math content. For example, the student might learn the concept of numbers through "countdowns" related to daily routines (e.g., "Lift your arm to help me remove your coat when I count to 3.") The student may begin learning concepts of "more" and "less than" (e.g., "Look up to indicate "more music".)

Early Symbolic and Emerging Math Concepts

Some students have learned to recognize numbers and to understand some everyday math concepts. But they may not yet know how to use these skills in the context of math instruction. For example, the student may have learned to point to numbers on a calendar, but not yet understand that a "5" relates to 5 items. The student may use a symbol to request "more" snack or time with a leisure material (by itself, not a math skills), but not realize that the concept can also be used to compare sets or sizes of items (a math skill). The student may use some counting (e.g., "get 4 cups to set the table") but not realize how to count on for addition (1, 2 cups and 3, 4). Or, the student may not comprehend the symbols for the task (2 + 2 = 4). These students will need specific instruction in beginning to use math symbols and concepts in the variety of activities presented for their assigned grade level.

Some students will need specific instruction in beginning to use math symbols and concepts in the variety of activities presented for their assigned grade level.

Symbolic and Functional Math Concepts

Some students have made excellent progress in functional math instruction and are able to tell time, count money, and use basic measurement for length and weight. They may be able to determine which of two prices is "less than" or count up from a price to determine the number of dollars needed to pay. However, some students also have gaps in their knowledge of math. They may have little understanding of geometry and become confused when asked to use concepts like shape, area, and perimeter in a job context. They may lack data analysis skills and not understand news polls and nutrition charts. These students will need additional instruction to use their math skills for more advanced math achievement.

Addressing Both Grade Level Standards and Present Level of Performance for Math

Similar to language arts, it's possible to address students' present level of performance while also considering their assigned grade level in mathematics. In doing so the educational team considers the essence of the grade level standard along with ways to promote the students' mastery of mathematics. Table 2.4 illustrates this dual consideration of the students' current instructional level and assigned grade level.

Address students' present level of performance while also considering their assigned grade level in mathematics. In so doing, the educational team considers the essence of the grade level standard along with ways to promote student mastery of mathematics.

Table 2.4 **Examples of Aligning to the Grade Level Standard that Incorporate Student's Present Level of Performance (Standards from North Carolina Standard Course of Study)[7]**

Content Areas	Standard	Examples of Math Skills for Students with Significant Disabilities
Number and Operations	**2nd Grade** Use area or region models and set models of fractions to explore part-whole relationships in contexts. a. Represent fractions (halves, thirds, fourths) concretely and symbolically. b. Compare fractions (halves, thirds, fourths) using models. c. Make different representations of the same fraction. d. Combine fractions to describe parts of a whole.	**Beginning Symbolic** Ricky will match the numerator of a fraction to a number prior to taking that many pieces/slices of a snack (e.g., "1" in ¼) for 3 fractions (¼, $^1/_3$, $^2/_3$). **Early Symbolic** Nick will select the correct amount of a snack item when shown and told the fraction for 5 fractions (e.g., ¼, ½, $^2/_3$, $^1/_6$, $^3/_5$). **Symbolic** Using a jig, Jackie will write a fraction to show how many items of a set are still available for use (e.g., $^2/_3$ CDs are free).

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[7] North Carolina Department of Public Instruction-North Carolina Standard Course of Study. http://www.dpi.state.nc.us/curriculum/ (Accessed Sept. 24, 2004).

Content Areas	Standard	Examples of Math Skills for Students with Significant Disabilities
Algebra	**8th Grade** Solve problems using linear equations and inequalities; justify symbolically and graphically.	**Beginning Symbolic** Leslie will use the equal and not equal signs on his AAC to indicate "same" or "not same" for 4/5 familiar objects. **Early Symbolic** Hannah will help a peer select the equal or not equal sign when shown two numbers under 10 generated by linear equations for 4/5 equations. **Symbolic** Thomas will write the linear equation for 9/10 known money facts (e.g., x quarters = $1.00 or x (25) = 100).
Geometry	**4th Grade** Solve problems involving perimeter of plane figures and areas of rectangles.	**Beginning Symbolic** When given a circle block for lunch and a rectangle for outside, Jason (deaf/blind) will select the correct item needed (lunch box or coat) for the activity on 4/5 occasions. **Early Symbolic** When shown a symbol of a rectangle or circle and told "show me the perimeter," John walks to and around the correct table on 4/5 occasions. **Symbolic** Kerri will determine the amount of border needed for various items (bulletin board, art project) by measuring the perimeter with a tape measure for 4/5 items.

(continued next page)

Content Areas	Standard	Examples of Math Skills for Students with Significant Disabilities
Measurement	**2nd Grade** Tell time at the five-minute intervals.	**Beginning Symbolic** George (visually impaired) will push the button on a talking clock when asked, "What time is it?" on 4/5 trials. **Early Symbolic** Melissa will match numbers to find the next activity on her schedule for 4/5 activities. **Symbolic** Jerry will read numbers to 60 to tell time with a digital watch.
Data Analysis and Probability	**9th Grade:** **Integrated Math 1** Use graph theory to model relationships and solve problems.	**Beginning Symbolic** Helen will use an elimination graph (objects velcroed to graph) to indicate completion of 5/5 activities. **Early Symbolic** Brad will color or mark a bar graph to indicate the number of work tasks completed for 4/5 tasks. **Symbolic** Stephanie will generate a bar graph with computer software to determine which of two measures (price, weights, calories) is more for 8/10 items.

Chapter 3
Strategies for Alignment

Focus on Self-Determination

A second way to select objectives that align to academic standards for students with significant disabilities is to focus on instructing components of self-determination. Teaching self-determination skills to students with disabilities promotes their learning of skill sets that increase their chances of taking control of their lives in and out of school. One way to make grade level standards meaningful for students with significant cognitive disabilities is to use general curriculum activities as context for learning self-determination skills that contribute to increased autonomy for students. These skills can promote learning of the general curriculum, while at the same time foster the acquisition of skills with lifelong benefits. To develop a focus on this area, the educational team should begin by reviewing the components of self-determination.

Teaching self-determination skills to students with disabilities promotes their learning of skill sets that increase their chances of taking control of their lives in and out of school.

One way to make grade level standards meaningful for students with significant cognitive disabilities is to use general curriculum activities as context for learning self-determination skills that contribute to increased autonomy for students.

Components of Self-Determination

To achieve self-determination, students need to acquire the skills to direct their own lives and have the opportunity to learn, practice and apply them in school, at home and in other environments. Consider how general education teachers offer varied opportunities for students to direct their own learning. For example, their students may select the topic for a project, determine what activity to do first, negotiate an activity with peers, or develop a solution to a problem in a cooperative learning group. Similarly, students with significant cognitive disabilities need the same opportunity to be active in directing their learning. Examples of components of self-determination include the following:

Self-Determination Skills

Component	Example
Choice-Making	• Make choices within an activity • Choose between two or more activities
Decision-Making	• Decide topic for class project • Determine best resource to use to get information
Problem-Solving	• Look at a picture to determine why DVD player is not working • Identify three alternative ways character in story could resolve a conflict
Goal Setting	• Set a goal for number of books to be read in a month • Identify and communicate IEP goals
Self Management/ Self Evaluation	• Use a bar graph to track number of assignments completed • Rate self on how well performed on given assignment
Self Awareness	• Develop picture/word list of likes and dislikes • Develop and learn to read a list of “facts about me”

Incorporating Self-Determination into Academic Objectives

As the IEP team considers the grade level standard, its members may want to review each of the components of self-determination to determine how these skills might create access to this standard. In the following example, basic self-determination skills are incorporated with state standards in the social science curriculum:

As the IEP team considers the grade level standard, its members may want to review each of the components of self-determination to determine how these skills might create access to this standard.

5th Grade Social Studies Standard

Compare and contrast the roles various religious and ethnic groups have played in the development of the United States with those of Canada, Mexico, and selected countries of Central America.

Walter's Scenario

Walter is 10 year old boy who is nonverbal and has autism. He can read about 10 sight words and count to 20. Walter's 5th grade social studies teacher likes to use both self-directed and cooperative learning activities. While both types of instruction provide the opportunity for Walter to develop age appropriate social skills that he currently lacks, his tendency to spend time alone engaged with his favorite objects and toys have made it difficult to get him participating in this class. The educational team considers ways to get Walter involved in social studies by focusing on self-determination. They decide to consider several components of self-determination to access this standard on ethnic diversity.

Self-Determination Components Include:

1. Choice
2. Self-Awareness
3. Goal Setting

The IEP team decides that one way Walter might begin to understand ethnic diversity is through studying the sounds of the everyday items and musical instruments distinctive to these groups.

Choice

Walter currently will choose between food and leisure items. He has a strong interest in objects that provide auditory stimulation and will frequently make items drum, ping, or create other repetitive sounds.
They decide that one way Walter might begin to understand ethnic diversity is through the sounds of the everyday items and musical instruments distinctive to these groups. These will be associated with pictures of that ethnic group. His objective might read something like this:

> Walter will choose items associated with various North American ethnic groups and then request the object using pictures of the group for 4/5 ethnic groups.

Self-Awareness

Walter's class will be doing projects in which they trace their ethnic and religious heritage for at least three generations. Walter comes from a family who emigrated to the U.S. from Poland in the 1940s. His family continues to have strong cultural ties to Polish food and their Jewish heritage.
His parents note that Walter has some distinct food favorites and is participating in religious education. The team considers how Walter might create his own heritage report. They decide that each week Walter will receive instruction in using power point and selecting and inserting digital pictures so that he will be able to independently select the final 10 pictures for his

final presentation in the spring. His parents agree to contribute a large set of digital pictures for this project. Another objective for Walter might read something like this:

> Walter will select at least 10 digital pictures and sight word labels to create a power point presentation about his heritage.

Goal Setting

As part of the support Walter receives for his autism, he has been used to having a work system in which the teacher designates the number of responses expected in each lesson before a break. The teacher uses clips on a cardboard chart for each item to be completed. As Walter completes each response, he removes a clip. He knows that when all the clips are removed, he can have a break with one of his preferred leisure items. The IEP team decides to teach Walter to set a goal for the number of turns he will take in the cooperative learning activity. The teachers will prompt his peers to give him easily understandable turns (e.g., to select the next picture, to turn in their project, to pass items to a peer). While not directly related to the standard on ethnic diversity, this participation will keep Walter actively engaged in each day's activities. The objective is the following:

It's decided to teach Walter how to set a goal for the number of turns he will take in the cooperative learning activity. Staff will prompt his peers to give him easily understandable turns (e.g., to select the next picture, to help turn in their project, to pass items to a peer).

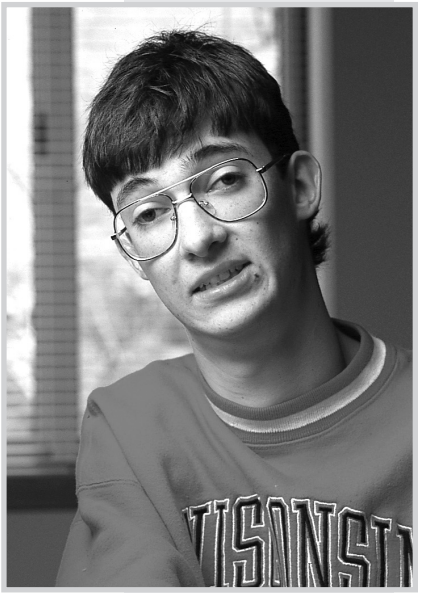
> Walter will select clips to set a goal for the number of turns he will take in his cooperative learning group for 4 out of 5 days.

Expanding Academic Objectives to Include Self-Determination

In the last examples, ideas were provided for accessing an academic standard using self-determination skills. Sometimes the team has targeted academic objectives, but they also wants to use this learning as an opportunity to promote self-determination. The following are examples of academic objectives that were expanded to include functional skills helpful to attain self-determination:

Goal 1	**Eric's Example** Eric will count between 1 and 20 items with 9 out of 10 trials correct.
Goal 1 with Self-Determination Focus	Eric will choose a number and count items to represent that number. Eric will count tasks to determine how many jobs he completed.
Goal 2	**Stephanie's Example** Stephanie will select pictures to identify 2/3 of a story's main characters.
Goal 2 with Self-Determination Focus	Stephanie will select pictures to identify 2/3 of a story's main characters and choose one that is most like her in some way (self awareness).

Goal 3	**Roxanne's Example** Roxanne will increase her sight word vocabulary to 50 words.
Goal 3 with Self-Determination Focus	Roxanne will increase her sight word vocabulary to 50 words including words that she can use to evaluate her daily work (e.g., "excellent," "okay," "not my best").
Goal 4	**Sam's Example** Sam will develop a picture/word journal.
Goal 4 with Self-Determination Focus	Sam will use a picture/word journal to rate characteristics of potential jobs based on likes/dislikes (self awareness, decision making about future job).



Chapter Four
Strategies for Alignment

Using Assistive Technology

There are many forms of assistive technology. Low tech assistive technology includes picture symbols, photographs, pencil grips, and stencils. Using any of these items, teachers can make academic standards more accessible to students. For example, students who are unable to read words may rely on picture symbols or photographs to gain meaning from text. Students who need assistance with the fine motor skills of writing may use pencil grips or stencils.

High tech assistive technology includes computer programs, switches and other devices. This type of assistive technology can be beneficial for students with physical disabilities and those with cognitive disabilities. For example, a Big Mack may be programmed to say a phrase for a student who cannot speak. Adapted keyboards may be used for students who do not have the physical ability to touch small keys.

Using switches and augmentative communication devices, some students will be able to engage in academics more independently.

Using switches and augmentative communication devices, students should able to engage in academics more independently. The following are examples of how students can access reading, writing, and math using high tech assistive technology.

Reading

Randy's Scenario

Every morning, Mrs. Jones reads a story to the class and then the class reads the story back to her, each student reading a separate sentence. Randy cannot read and is nonverbal, but his teacher would like him to participate in the class story reading activity. In order to help him participate, she programs his sentences into a **Cheap Talk**, which contains four spaces for pictures. When it is Randy's turn to read, he touches the pictures on his Cheap Talk and "reads" his sentences to the class.

Cheap Talk

Kim's Scenario

Kim is a tenth grader who has very limited movement. She is included in a language arts class. Each day in class the students are given time to read a chapter of the novel they are studying. Kim's teacher would like her to be able to read the chapters independently. Students in Kim's class have recorded a low vocabulary version of the novel on to tapes. Kim's teacher has hooked a **Power Link** to the tape player in the classroom. The Power Link is then hooked to a switch that Kim is able to manipulate. Kim is able to independently listen to the chapters through headphones. She puts on the head phones, then touches the switch which turns on the tape player.

Power Link

Writing

Matthew's Scenario

Matthew is learning how to spell his name using word processing software. However, Matthew is unable to manipulate the mouse. Matthew's teacher has installed a touch screen on the computer. He is now able to touch the letters of his name on the screen as well as touch the print icon to print out his spelling assignment.

Jamie's Scenario

Jamie's class is creating a journal about their community based experiences. Jamie is unable to write and cannot type. Her teacher has an **IntelliKeys** keyboard attached to the computer. With this keyboard, Jamie can touch large picture symbols that will help her write sentences. When she is finished creating the sentences, she can touch the print symbol to print out her sentences to be placed in her journal.

IntelliKeys Keyboard

Attainment Overlays

Math

Ryan's Scenario

Ryan likes to turn on appliances and toys using a switch and **Power Link.** However, he often turns things on at inappropriate times. Ryan's teacher would like him to begin understanding number concepts. Ryan's teacher now counts to a certain number before Ryan turns an object on. For example, during snack time, Ryan is going to activate a blender to make a milkshake. Ryan has now learned to wait until the count of 3, instead of activating the blender before his teacher is ready.

Jennie's Scenario

Jennie needs to drink an 8 oz. protein shake for lunch each day. Her teacher would like her to learn to measure out the shake herself. However, it is hard for Jennie to hold the container. Jennie's teacher has hooked a switch to an automatic pourer. Jennie touches the switch and the pourer turns and begins to pour the shake into a measuring cup. When the liquid gets to 8 oz., Jennie touches the switch again and it stops pouring.

Automatic Pourer

Aside from switches and augmentative communication devices, there is also software that can make access to the general curriculum possible. On the following pages a number of software programs are listed and a short explanation is provided of what skills that each software program addresses.

Reading

Software	Skills/Concepts Taught
Bailey's Book House (www.riverdeep.net)	Through interactive activities, students learn about letters, words, rhyming, prepositions, adjectives, sentence building.
Edmark Words Around Me (www.riverdeep.net)	Using visual representations (photographs, drawn images, and animation) students learn about word identification, plurals, categorization, sameness, difference.
Simon Sounds it Out (www.donjohnston.com)	An animated personal tutor helps students with letter sounds, word families, onsets, and rimes.
Edmark Reading Program (www.riverdeep.net)	Students learn comprehension of sight words through story reading, picture matching.
IntelliTools Reading: Balanced Literacy (www.intellitools.com)	Incorporates phonics, guided reading, and comprehension.
Start-to-Finish books (www.donjohnston.com)	Stories are read aloud and reading comprehension is measured through end of story quizzes.

Writing

Software	Skills/Concepts Taught
Co:Writer (www.donjohnston.com)	Word prediction, grammar and vocabulary support that can be added to any word processor or e-mail program.
Write:Outloud (www.donjohnston.com)	Talking word processor that gives immediate speech feedback as students type words, sentences and paragraphs.
Clicker 4 (www.donjohnston.com)	Lets teachers create word grids on screen that provide support for developing writers.
Writing with Symbols 2000 (www.widgit.com)	Allows students to write picture-word stories with built-in speech feedback to associate symbols with words.
IntelliTalk 3 (www.intellitools.com)	Word processor that allows students to combine graphics, text, and speech to support and enhance writing and communication skills.
Attainment Overlays (www.AttainmentCompany.com)	Attainment Overlays enhance accessibility to software and are designed for use with the IntelliKeys Keyboard.

Math

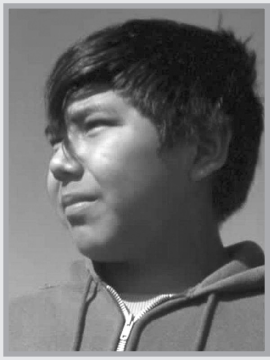
Software	Skills/Concepts Taught
Millie's Math House (www.riverdeep.net)	Students explore numbers, shapes, sizes, quantities, patterns, sequencing, addition, and subtraction.
Trudy's Time and Place House (www.riverdeep.net)	Activities teach students time-telling skills and explore the concept of time by controlling an animated movie.
IntelliMathics (www.intellitools.com)	Activities use virtual manipulatives to help students see mathematical relationships.
Basic Coins (www.attainmentcompany.com)	Allows students to name, match and purchase with virtual coins.
Money Skills (www.marblesoft.com)	Includes 5 activities that teach counting money and making change.

The following are examples of how an academic goal can be expanded to incorporate software.

Reading	
Original Goal	**Goal with Assistive Technology**
John	
John will read 5 three word phrases that use known words.	John will read 10 complete sentences composed with Writing with Symbols using picture cues to identify at least one novel word per sentence.
Henry	
After listening to a story being read to him, Henry will answer five questions about the story.	After using assistive technology to independently read a Start-to-Finish novel, Henry will answer five comprehension questions based on the novel.

Writing	
Original Goal	**Goal with Assistive Technology**
Sherry	
Sherry will dictate to a scribe a 10 word note.	Using Writing with Symbols, Sherry will independently create a picture symbol/ word note of 10 words or more.
Chuck	
Chuck will choose 5 pictures to put in a journal and dictate a description of the pictures.	Using Clicker 4 and a touch screen, Chuck will independently compose 5 sentences to add to his journal.

Math	
Original Goal	**Goal with Assistive Technology**
David	
David will watch as a peer counts manipulatives in sets of 1 to 10 items.	David will use a math software program with virtual manipulatives and a head switch to choose the correct number of manipulatives that have been counted for sets 1-10.
Matt	
Matt will work on a task for 15 minutes.	Matt will use an online timer to track the amount of time he has worked and press a switch that says “I’m finished” when his time is up.



Chapter 5
Strategies for Alignment

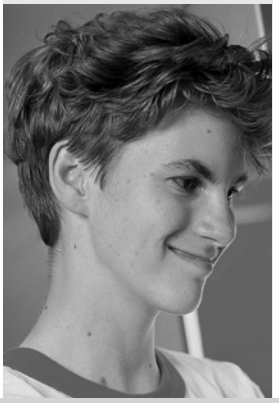
Using a Functional Activity to Help Make the Standard Meaningful

Another way for the team to effectively identify target skills for general curriculum access is to address the standards through functional activities. Although accessing the general curriculum places more emphasis on academics than students with severe disabilities have had in the past, it is still necessary for students to apply these skills in functional and meaningful contexts. Fortunately, with a little instructional creativity any state academic standards can be addressed by having students be able to attain and apply skills and knowledge learned in the classroom to real life situations. The following examples illustrate how academic skills can be embedded in typical daily routines:

Accessing the general curriculum places emphasis on academic instruction for students with severe disabilities.

It's your job to make sure these skills are applied in functional and meaningful contexts.

- ✦Creates a picture symbol homework list (writing)
- ✦Locates a room by its number (math)
- ✦Uses a keypad in the cafeteria (math)
- ✦Locates the sports page using newspaper index (reading)
- ✦Follows a picture schedule (reading)



Finding age appropriate materials for students in middle or high school may be a struggle, because many books at a lower reading level are aimed at younger students.

It is also vital that you consider the age appropriateness of materials that students use. Generally, for teachers of elementary school children, this is less of a problem. However, even for them, it is important to select age appropriate materials, not ones designed for toddlers. For teachers of students in middle or high school, finding age appropriate materials may be a struggle. Generally, books at a lower reading level are aimed at younger students. However, there are sets of classic books that have been adapted to lower reading levels (www.wieser-ed.com.). Also, Don Johnston's Start-to-Finish book series (www.donjohnston.com) includes high interest-low vocabulary books. You may also consider using news magazines that have been written for students (Time for Kids, Sports Illustrated for Kids). News-2-You is an internet picture symbol newspaper that comes out weekly and contains information about current events (www.news-2-you.com).

To plan functional activities that give meaning to emerging academic skills, look at the major domains of life, work, home, the community and leisure settings. It may be helpful to find out some of the activities typical of the students' chronological age in these settings. For example, in a shopping mall, younger students typically accompany adult shoppers but may get to select a toy or food item that the adult purchases. In contrast, middle school students may shop with peers, make their own clothing selection, purchase lunch, and spend money independently. High school students may hold part-time jobs in the mall and help customers with food or clothing purchases.

The following illustrate how academic objectives are made more meaningful by considering the students chronological age and appropriate life environments:

Table 5.1

Examples of Functional Applications of Geometry Skills

	Home	Work	Leisure	Community
Skill: Geometric shapes Age: 7	Video games that use shapes.	Shape cues for chores at school (e.g., rectangle for toys in toy box; circle for help to set the round table for snack).	Forming shapes while playing games in P.E. (e.g., Let's make a circle; boys in a line).	Identify shape signs (e.g., stop at red circle sign).
Perimeter and Area Age: 12 (Middle School)	Make a "where I live" chart showing area of rooms.	Use laser measure to determine perimeter of objects.	Indicate perimeter of playing field to show concept of "out of bounds."	Identify what foods are located in perimeter of grocery store.

Table developed by Diane M. Browder, Ph.D.

Chapter Six
✦ Practicing Alignment
✦ Case Study Examples

Practicing Alignment to State Standards

In earlier chapters, examples were given for how to align objectives to state standards by focusing on literacy and mathematics, incorporating self-determination, using assistive technology, and creating applications for academic skills in functional activities. Here we provide a suggested practice routine for pulling these ideas together.

This chapter provides a suggested practice routine for aligning objectives to state standards.

Aligning Language Arts Objectives

Lisa's Scenario

Lisa is a 3rd grade student with Rhett's Syndrome. She is nonverbal and currently uses objects to communicate. She shows an interest in books read to her by peers. She will also sometimes look at pictures in a magazine. Lisa is ambulatory, but has limited use of her hands. She enjoys social contexts and will sometimes make her meaning known by eye gazing or laughing.

In developing a standards-based IEP, the IEP team must become familiar with state standards.

In developing a standards-based IEP, the team needed to become familiar with the state standards. The following is one of the 3rd grade standards in language arts for Lisa's state:

Language Arts Standard, 3rd Grade:

Read independently daily from self-selected materials (consistent with the student's independent reading level) to: increase fluency, build background knowledge and extend vocabulary.

The team begins by considering the five components of reading: Phonemic awareness, phonics, comprehension, fluency, and vocabulary.

Corresponds with Chapter 2, Literacy and Math Skills, page 29.

Strategy 1: Promote Literacy (consider symbol use)

The team begins by considering the five components of reading: Phonemic awareness, phonics, comprehension, fluency, and vocabulary. Lisa's state standard is focused on the last three components – comprehension, fluency, and vocabulary. A well-aligned objective for Lisa will be one that promotes literacy by increasing her skills in these three areas using 3rd grade literature. The objective also focuses on independence in reading. While Lisa cannot read, she may gain independence in viewing books. In contrast, Lisa's

instructional level is at a beginning symbolic level. She does not yet consistently identify pictures. She doesn't discriminate specific words in a sentence that is spoken or read to her. Her vocabulary work will need to focus on building this word awareness in her listening skills and include the introduction of symbols. In general, the team decides that Lisa needs these skills to further her literacy skills. As seen below, they are not yet written as objectives:

1. Independently engage with books
2. Demonstrate word awareness
3. Identify pictures that relate to key themes of a story

Strategy 2: Promote Self-Determination

Another way Lisa's team could generate ideas to access this 3rd grade language arts standard is to incorporate self-determination practices. Lisa sometimes becomes passive in her environment, looking at activities of others but not engaging in specific tasks for herself. Building on the skills identified in strategy 1 (Pg. 72), next the team expands on the skills as follows:

1. Lisa will make choices during reading and independently engage with books
2. Lisa will demonstrate word awareness that includes words about her (name, preferences)
3. Lisa will identify pictures that relate to key themes of a story; and relate to preferences

Lisa sometimes becomes passive, looking at activities of others but not engaging in tasks herself. One way Lisa's team could generate ideas to help her access the 3rd grade language arts standard is to incorporate self-determination practices.

Corresponds with Chapter 3, Self-Determination, page 45.

Strategy 3: Use Assistive Technology

In order to allow Lisa access to the previously mentioned skills and complete her tasks independently, her IEP team has decided to use assistive technology with her. The use of assistive technology now makes it possible to define how Lisa will demonstrate these new skills and will help determine how to write these as objectives:

1. Lisa will choose a book on the computer, press the start icon, and hit the mouse switch to turn all pages of the book independently.

2a. When read a 3rd grade story, adapted to include a repeated story line or word, Lisa will anticipate the word by hitting a Big Mack switch on 4 out of 5 opportunities as the story is read.

2b. When read a social story about her, Lisa will anticipate her name by hitting a Big Mack switch for 4 out of 5 opportunities to participate with the reader.

3a. Given two pictures presented on an AAC voice output device or computer touch screen, Lisa will select the picture that relates to the key theme of a story for 2 out 3 trials.

3b. When given digital pictures from familiar stories and activities on a computer screen or projected on the wall, Lisa will eye gaze or touch pictures to select five of her favorites to develop a picture journal.

As Lisa's team reviews her objectives, they note that many will provide her with functional skills in her daily routine. They decide to expand some of these objectives further to address some of Lisa's life skill needs concurrent with her language arts instruction.

Corresponds with Chapter 4, Using Assistive Technology, page 51.

Strategy 4: Embed in Functional Activities

As Lisa's team reviews her objectives, they note that many will provide her with functional skills in her daily routine. They decide to expand some of these objectives further to address some of Lisa's life skill needs concurrent with her language arts instruction. The sequence below illustrates how the team edited and added to her objectives:

1. Lisa will choose a book on the computer, press the start icon, and hit the mouse switch to turn all pages of the book independently.

Instructional note: *Some books will be adapted from 3rd grade stories; some will be social stories about Lisa performing her daily routines like putting her bookbag away and washing her hands using digitized pictures.*

2a. When read a 3rd grade story, adapted to include a repeated story line or word, Lisa will anticipate the word by hitting a Big Mack switch on 4 out of 5 opportunities as the story is read.

2aa. In a group context, Lisa will take turns with peers for 4 out 5 opportunities.

Instructional note: *This social skill can be taught concurrent with this reading lesson as well as in other contexts.*

2b. When read a social story about her daily routines, Lisa will anticipate her name by hitting a Big Mack switch for 4 out of 5 opportunities to participate with the reader.

Instructional note: *Sometimes Lisa will read these stories by herself using the computer (objective 1). Sometimes she will read them with a teacher or peer and work on recognizing her name. These stories can be taught just prior to learning to perform the daily living activity. (e.g., the story of how Lisa washes her hands for lunch).*

3a. Given two pictures presented on an AAC voice output device or computer touch screen, Lisa will select the picture that relates to the key theme of a story for 2 out 3 trials.

Lisa's team notes that her objectives are designed to provide her with functional skills in her daily routine. Next, they decide to expand some objectives further to address her life skill needs concurrent with language arts instruction.

Corresponds with Chapter 5, Functional Activities, page 59,

Instructional note: *Some of these stories will be about her daily routine; others will be the 3rd grade stories.*

3b. When given digital pictures from familiar stories and activities on a computer screen or projected on the wall, Lisa will eye gaze or touch pictures to select five of her favorites to develop a picture journal.

3bb. Lisa will engage in a social exchange with a peer by sharing at least 5 pictures from her "favorites" journal. Note: This additional social objective builds on the language arts skill she is learning.

Aligning Math Objectives

Brian's Scenario

Brian is a student with Down Syndrome and a moderate mental disability. He has mastered about 20 sight words and is learning to apply them to activities of daily living. He communicates using a picture wallet and single spoken words. In math, he rote counts from 1-10 but cannot count objects consistently or recognize numbers. Brian is 11 years old and in 6th grade.

Objectives that align with the 6th grade standard help Brian understand how to read and write math "sentences" that reflect his computations.

Corresponds with Chapter 2, Literacy and Math.

The following example of the 6th grade math standard is used here to illustrate how the team selected objectives is aligned with this standard.

Math Standard 6th Grade:

Solve simple equations or inequalities

Strategy 1: Promote Numeracy

The basic components of mathematics are computation, measurement, geometry, patterns/algebra, and data analysis/graphing. The 6th grade standard of focus is related to the component of patterns/algebra as well as computation. Objectives that align with this standard will help Brian understand how to read and write math "sentences" that reflect his computations. In contrast, Brian's instructional level is early symbolic. His only

consistent skill is rote counting. He needs to learn one-to-one correspondence to count objects consistently. This counting can provide a foundation to learn operations like addition. The math skills that Brian's team targets follow below. These are not yet written as objectives.

1. Recognize numbers 1-20.

This skill aligns with Brian's instructional level.

2. Count objects to 20 using 1:1 correspondence.

This skill aligns with Brian's instructional level.

3. Determine how many more objects he needs to complete a set (solve an equation).

This skill can be mastered if he learns counting objects and aligns to the 6th grade standard related to patterns/algebra.

4. Use math symbols to indicate if two sets of objects under 20 are equal (same) or not equal (not the same).

This skill can be mastered by counting and learning to use math symbols. It aligns with the 6th grade standard.

Strategy 2: Promote Self-Determination

The team identifies ways to promote Brian's self- determination while working on his math skills.

Corresponds with Chapter 3, Self-Determination

Given that Brian is now in middle school and has had some years of math instruction, the team needs to consider how to make these math skills useful and meaningful to him. One approach is to promote Brian's self direction in his learning. The team identifies ways to promote self-determination while working on these math skills. Note that these skills are still not quite objectives yet.

1. *Brian will choose the maximum number that he will count to correctly (goal-setting).*
2. *Brian will determine which materials he would like to practice counting with (choice making).*
3. *Brian will determine how many objects he needs to complete a set (problem-solving).*
4. *Brian will decide what to do with sets of items that do not equal each other or a target number (decision making).*

Strategy 3: Use Assistive Technology

By considering the use of assistive technology, more options become available for how Brian will practice and demonstrate math skills.

Corresponds with Chapter 4, Math.

Now the team looks at the exact responses that will be used for Brian to demonstrate mastery of each math concept. By considering the use of assistive technology, more options become available for how Brian will practice and demonstrate these skills.

1. Using math software, Brian will select a number from 1-20 and then count out objects for that number with 9 out of 10 trials correct.

2. Brian will use a jig to count items from 1-20 with 1:1 correspondence with 9 out of 10 trials correct.

3. Using either math software or concrete objects, Brian will identify the number of items needed to complete a set with 4 out of 5 sets correct.

4a. After counting two sets, Brian will attach the Boardmaker symbol for equal or not equal for 4 out of 5 comparisons.

4b. After determining equality, Brian will decide what to do with the unequal sets (e.g., make them equal, replace the objects, use magnetic numbers to create the equation) for 4 out of 5 comparisons.

Strategy 4: Embed in Functional Activities

Some of Brian's instructional activities may be embedded in the context of familiar routines. The team adapted the objectives of planned instructional applications to make the objectives functional for Brian.

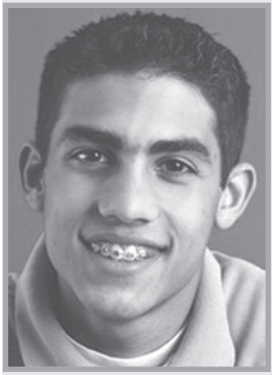
Corresponds with Chapter 5, Functional Activities.

Given that Brian is in middle school, it is especially important that his emerging math skills have utility in his daily life. While some of Brian's instructional activities may be using traditional math materials, others may be embedded in the context of familiar routines. The following show how the team adapted the objectives or planned instructional applications to make the objectives functional for Brian.

1. Using math software or a functional activity, Brian will select a number from 1-20 and then count out objects for that number with 9 out of 10 trials correct.

Instructional note: *Activities might include counting out items like cards in a game; the number of snacks he decides to put out for a party; the number of pens he needs for a class; the number of pictures he wants to take home.*

2. Brian will use a jig to count items from 1-20 with 1:1 correspondence with 9 out of 10 trials correct.



Instructional note: *Brian can practice counting out items to be bagged the number of silverware packets to make, the number of cups to be put on the shelf or other vocational tasks.*

3. Using either math software or concrete objects that relate to daily routines, Brian will identify the number of items needed to complete a set with 4 out of 5 sets correct.

Instructional note: *These would be the same kind of activities as described for #1, but Brian will be missing some items and need to determine how many more he needs to get.*
The teacher can summarize the activity using math sentences (4 + __ = 7).

4a. After counting two sets, Brian will attach the Boardmaker symbol for equal or not equal for 4 out of 5 comparisons.

4b. After determining equality, Brian will decide what to do with the unequal sets (e.g., make them equal, replace the objects, use magnetic numbers to create the equation) for 4 out of 5 comparisons.

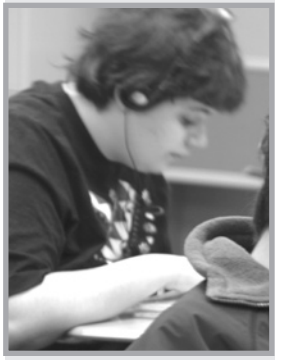
Instructional note: *This skill can be set up as a functional activity in which Brian is making preparations. For example, he might be asked to do quality control for an upcoming math activity to check if each bin of materials contains 10 cubes. He can decide if each bin has 10, label it as equals or not, and if not, decide what to do about it (e.g., get more cubes for that person; get a complete set; etc.)*

Case Study Example

Using the five guidelines from Chapter 1, Regina's IEP team will develop priority standards in academic content areas as well as other important areas that Regina needs to work on.

Regina's Scenario

Regina is a 5th grade student with severe, multiple disabilities. She uses a wheelchair and has limited movement in her left arm. She can move her head from side to side. Regina uses a head switch to greet teachers and peers. She smiles when listening to stories that are read to her by an adult. Regina does not recognize any math symbols and does not respond to teacher countdowns. Using the five guidelines from Chapter 1, Regina's IEP team will develop priority standards in academic content areas as well as other important areas that Regina needs to work on. Once the priority standards are developed, the IEP team will develop objectives that make the standards accessible for Regina.



Guidelines to Select IEP Goals that Promote Alignment	How Regina's IEP Team will Follow the Guidelines
Guideline One: Become Familiar with State Standards	Regina's assigned grade is 5th grade. The general education teacher who is a part of Regina's IEP team is an experienced 5th grade teacher who is familiar with grade level standards in language arts, math, science, and social studies. The rest of Regina's IEP team is using the state's curriculum and the school system's pacing guide to become familiar with grade level appropriate academic goals.
Guideline Two: Become Familiar with the State's Approach to Alternate Achievement Standards	Regina's state allows alternate achievement standards to be used in considering AYP for students with cognitive disabilities. Regina will be tested with an assessment that is IEP based.

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Guidelines to Select IEP Goals that Promote Alignment	How Regina's IEP Team will Follow the Guidelines
Guideline Three: Keep the Planning Student-Focused	Each member of Regina's IEP team is contributing information about Regina based on current assessments. Regina's teacher reports that Regina is using her switch to greet people and smiles when books are being read to her or when music is playing. Regina's Occupational Therapist reports that Regina is beginning to make progress touching a switch with her left hand. Regina's Physical Therapist reports that Regina is assisting with the shifting of her body weight when she is being lifted. Regina's Speech/Language Therapist reports that Regina is pointing to herself when her name is called. Regina's parents report that she is verbalizing a sound like "Mom" when she sees her mother. She is also reaching toward toys and books that she wants when she is at home. She chooses books most often.
Guideline Four: Consider Both Specific Academic Goals and Broad Access Goals	Regina's IEP team decides that Regina's goals should address four academic content areas (language arts, math, science, and social studies) just like her same aged peers. However, the team also determines that Regina's IEP should address other goals that are important for Regina such as therapy goals, leisure goals, and daily living skills.

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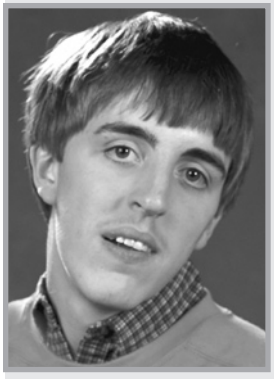
Guidelines to Select IEP Goals that Promote Alignment	How Regina's IEP Team will Follow the Guidelines
Guideline Five: Ask the Question, "Is it Really Reading and Really Math (Science, Social Studies, etc.)?"	Regina's IEP team has chosen goals in four academic areas for Regina based on the 5th grade state curriculum. For each goal they have determined a priority goal that is important for Regina. **Language Arts:** 1.02 Select key vocabulary critical to the text and apply appropriate meanings as necessary for comprehension. Regina's priority goal: • Regina will identify objects/pictures from text that is read to her. **Math:** Compare and order rational numbers • Regina will distinguish between 2 different numbers. **Science:** Evaluate how pushing or pulling forces can change the position and motion of an object. • Regina will identify pictures that indicate position or motion. **Social Studies:** Locate and describe people of diverse ethnic and religious cultures, past and present, in the United States. • Regina will match cultural objects to picture of people from different cultural groups. The 5th grade teacher on Regina's IEP team helped the team to determine that the goals they had chosen did reflect the meaning of the 5th grade academic standards. They noted that Regina's curriculum will be the full 5th grade curriculum. These IEP priorities are developed to help her access this curriculum and to specify some areas within the curriculum that are her priorities for mastery.

After Regina's IEP team has decided on four priority academic goals for Regina, they develop objectives for each goal. In order to be sure that the IEP objectives are creating access to state standards, the team uses the following four strategies.

- ✦Selection of skills that promote overall literacy and numeracy
- ✦Focus on self-determination skills
- ✦Using assistive technology to increase active, independent responding
- ✦Use functional activities to give meaning to the academic concept

Standard	IEP Objective	Strategy Used for Alignment
Language Arts: 1.02 Select key vocabulary critical to the text and apply appropriate meanings as necessary for comprehension. Regina's priority goal: • Regina will identify objects/ pictures from text that is read to her.	Upon request Regina will touch 3 objects/ symbols found in a story. Given two choices of objects/symbols found in a story, Regina will touch the object/symbol requested on 4 out of 5 opportunities. Given a choices of familiar objects/ symbols, Regina will use assistive technology to choose the one that was represented in the story just read to her on 4 out of 5 trials.	**Promote overall literacy:** Regina is learning to identify objects/symbols, a pre-literacy skill. **Focus on self-determination:** Regina will choose the text that is being read to her. She will also report to the teacher whether she liked or disliked the text. **Using assistive technology to increase active, independent responding** Regina can use a computer program that scans through choices of objects she has to choose from. When the object she thinks is correct is highlighted, Regina will use her head switch to stop the scan and make a choice. Regina will also activate one of two Big Macks that state "I like this story" or "I do not like this story" **Use functional activities to give meaning to the academic concept** This goal can be expanded to include books that highlight objects/symbols that Regina will use everyday, such as names of important people, places in Regina's community, or common household or school objects that Regina likes to use.

Standard	IEP Objective	Strategy Used for Alignment
Math: Compare and order rational numbers. • Regina will distinguish between 2 different numbers.	Regina will identify the numbers 1 and 2 for 8 out of 10 trials. Regina will put the numbers 1 and 2 in order.	**Promote overall numeracy:** Regina is learning to identify numbers, an early symbolic skills. **Focus on self-determination:** Regina will choose the activity that she wants to do first by placing it under the number 1. **Using assistive technology to increase active, independent responding:** Regina will use a rocker switch with the numbers 1 and 2 to touch the number she has been asked to identify. Regina will use a stamp to imprint the number one on the activity she has chosen to do first. **Use functional activities to give meaning to the academic concept:** Regina will identify the numbers 1 and 2 in her environment (i.e., in the elevator at her school, or on a lunch menu-choice meal 1 or 2).



Standard	IEP Objective	Strategy Used for Alignment
Science: Evaluate how pushing or pulling forces can change the position and motion of an object. • Regina will identify pictures that indicate position or motion.	Regina will identify photographs or picture symbols for push, pull, move left, move right and stop. Regina will use the pictures to indicate which way her wheelchair is being moved for 4 out of 5 trials.	**Promote overall literacy or numeracy:** Regina is learning to identify picture symbols (early literacy) as well as positional symbols (early math). **Focus on self-determination:** Regina will choose the person to move her wheelchair Regina will choose the way her wheelchair is to be moved to get her to a certain place in the classroom (problem-solving). **Using assistive technology to increase active, independent responding:** Regina will use an IntelliKeys keyboard to write a sentence about who will move her that day. Regina will use a Cheap Talk labeled with the motion symbols to indicate which way to move her. **Use functional activities to give meaning to the academic concept:** Regina will practice her skill with peers and unfamiliar staff to help her learn to ask people to help her move.

Standard	IEP Objective	Strategy Used for Alignment
Social Studies: Locate and describe people of diverse ethnic and religious cultures, past and present, in the United States. • Regina will match cultural objects to pictures of people from different cultural groups.	Regina will identify peers in her class by pointing to their pictures labeled with names when requested for 4 out of 5 names. Regina will match peers' pictures to a picture of their country of origin for at least 3 peers. Regina will match cultural objects to the peer's picture that they belong to for at least 3 peers.	**Promote overall literacy or numeracy:** Regina is learning to identify pictures labeled with names (early literacy). **Focus on self-determination:** Regina will choose from objects from her culture to represent herself Regina will distinguish between objects from her culture(s) and others (self-awareness). **Using assistive technology to increase active, independent responding:** Regina's teacher will color code the backgrounds of student pictures, countries, and cultural items in order to help with the matching. Regina will use IntelliKeys to make a book about the different cultures represented in her classroom. She will press symbols that form sentences such as, "Nia is from Italy. In Italy they play bocce." **Use functional activities to give meaning to the academic concept:** Regina will continue to write sentences about different classroom activities in order to advance her communication skills.

Appendix

Attainment Overlays:

Attainment Company produces products cost-effective, age-appropriate learning and AT for children and adults with special needs. For more information contact:

Attainment Company
504 Commerce Parkway
Verona, WI 53593-0160
800-327-4269
www.AttainmentCompany.com

IntelliKeys Keyboard:

Intellitools mission is to provide outstanding technology to help all students learn to their fullest potential.

Intellitools
1720 Corporate Circle
Petaluma CA 94954
800-899-6687
www.intellitools.com

Power Link:

AbleNet is dedicated to making a difference in the lives of people with disabilities by creating products and ideas that make teaching students easy, fun and fulfilling.

AbleNet Inc.
2808 Fairview Avenue
Roseville, MN 55113-1308
800-322-0956 US and Canada
www.ablenetinc.com

Cheap Talk:

Enabling Devices is a company dedicated to developing affordable learning and assistive devices to help people of all ages with disabling conditions. For more information contact:

Enabling Devices
385 Warburton Avenue
Hastings on Hudson, NY 10502
800-832-8697
www.enablingdevices.com

Automatic Pourer:

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Footnotes

[1] For more information on the use of alternate achievement standards for reporting AYP, see the Federal Register December 9, 2003.

[2] Resource Guide to the MA Curriculum Frameworks for Students with Significant Disabilities. http://www.doe.mass.edu/mcas/alt/rg/sci.pdf (p. 26.) Accessed September 13, 2004.

[3] This information on writing IEP objectives is adapted from Bateman and Herr, (2003).

[4] North Carolina Department of Public Instruction-North Carolina Standard Course of Study http://www.dpi.state.nc.us/curriculum/ (Accessed Sept. 24, 2004).

[5] National Council of Teachers of Math-Principals and Standards for School Mathematics http://standards.nctm.org/document/chapter3/index.htm (Accessed Sept. 24, 2004).

[6] National Council of Teachers of Math-Principals and Standards for School Mathematics http://standards.nctm.org/document/chapter3/index.htm (Accessed Sept. 24, 2004).

[7] National Council of Teachers of Math-Principals and Standards for School Mathematics http://standards.nctm.org/document/chapter3/index.htm (Accessed Sept. 24, 2004).