National Center and State Collaborative

How to Teach State Standards to Students Who Take Alternate Assessments

(Revised 3/6/17 to Update Links)

National Center and State Collaborative

How to Teach State Standards to Students Who Take Alternate Assessments

Diane Browder, Shawnee Wakeman, and Claudia Flowers

University of North Carolina at Charlotte

Browder, D., Wakeman, S., & Flowers, C. (2016). *How to teach state standards to students who take alternate assessments.* Minneapolis, MN: University of Minnesota, National Center and State Collaborative.

Development of this report was supported by a grant from the U.S. Department of Education, Office of Special Education Programs (H373X100002, Project Officer: Susan.Weigert@ed.gov). The contents do not necessarily represent the policy of the U.S. Department of Education, and no assumption of endorsement by the Federal government should be made.

Introduction

The National Center and State Collaborative (NCSC) developed instructional materials and standards-based assessments for students with the most significant cognitive disabilities. This paper provides an overview of the many resources available from NCSC to plan and provide standards-based instruction for students with significant cognitive disabilities. It covers lesson planning for both English language arts and mathematics that aligns to each student's grade level, but the general procedures can be applied to other content areas as well. In addition, the general procedures presented here can be used regardless of the alternate assessment that the state uses for its students with significant cognitive disabilities.

The What and Why of Teaching State Standards

Students who take their state's alternate assessments based on alternate achievement standards have significant cognitive disabilities. These cognitive disabilities may be accompanied by sensory, physical, or social challenges. Promoting learning in the general curriculum content reflected in state standards requires creative thinking about how to make complex content accessible. This manual offers guidance and examples to help educators plan ways for students who take alternate assessments to learn content that is related to their state's academic content standards.

Check for Understanding: *Using the Internet, search for "state standards" in your state. For example, "state content standards Georgia." Take a few minutes to scroll through the standards in math and English language arts using one of the grade levels you teach (e.g., 8th grade). What do you notice about the standards?*

State content standards are important for all students. They offer targets for student achievement at each grade level. The state's general education assessments are based on these standards. The assessments help the general public know how schools are doing in promoting learning of important content. Most students with disabilities take these general assessments.

State standards are important for all students.

For students who take alternate assessments, these assessments offer targets that students with significant cognitive disabilities should achieve in each grade; they offer information on how schools are helping students gain this knowledge. The Individualized Education Program (IEP) team decides which students with disabilities will work toward alternate achievement of state standards by taking the alternate assessment.

Check for Understanding: *Using the internet, search for information on your state's alternate assessment. Look for who takes the assessment, what the assessment includes, and sample items from the assessment.*

Why Teach State Standards to Students with Significant Cognitive Disabilities?

Students with more severe disabilities have had an interesting history of what they were taught. Prior to 1975, many of these students did not even have public school programs. When educational programs were first established for these students, the students often had curricula designed for much younger students. By the 1980s, most educators believed that even

students with the most severe disabilities learned best with curriculum developed for their chronological age and life skill needs. By the 1990s, educators were demonstrating how to make general education classrooms responsive to the needs of all students, including those with severe disabilities. By the turn of the century, it became clear that students not only could achieve social benefits from the general education curriculum, but academic benefits as well. Alternate assessments helped to foster increasing academic expectations. Concurrently, research demonstrated that students with significant cognitive disabilities could learn more academic content than once thought possible (e.g., Hudson, Browder, & Wood, 2013; Spooner, Knight, Browder, & Smith, 2012).

Research and practice have shown that students with significant cognitive disabilities can learn much more academic content than once thought possible.

The highest academic expectation for all students is that they will meet grade level expectations. Whenever possible, students with disabilities should have the opportunity to reach grade level achievement. Some students with significant cognitive disabilities still can achieve some portion of this expectation by having the opportunity to learn content that aligns with the state content standards of their grade level. The student might be able to learn some priority standards, or a simpler version of the content, or be able to learn the content using adaptations, such as adapted text, or with supports, such as assistive technology. For example, a student might be able to describe the rise and fall of action in the plot of a novel, if the novel is abbreviated, adapted to simpler language, and read aloud.

Although current practice and research show students can learn the content, it also is important to consider why this might be valuable. Perhaps most important is the fact that there is no way to determine how much a student can learn without instruction. When a student is denied the opportunity to learn academic content, the student's educational opportunity is being limited. The 21st century also requires that all students have more academic skills than ever before. Communication is often technology-based (e.g., email, social media, texting), requiring the use and comprehension of text. Jobs once performed manually now require the use of programming computers using mathematics. Academics also provide a rich context for developing a student's overall collaboration skills and knowledge of the world.

The only way to determine how much academic content a student can master is through instruction.

Application: *Think about one or more students in your classroom. How might it benefit these students to learn more mathematics and language arts?*

What is Standards-Based Instruction?

Standards-based instruction is teaching that aligns with the state's content standards. These standards have been developed by curricular experts and teachers to help all educators navigate through the priorities for each grade level. For students who take alternate assessments, the focus is on alternate achievement of this same content.

Standards-based instruction is teaching that aligns with the state's content standards. For students in alternate assessments, the focus is on alternate achievement.

To keep the content as close to the same as possible, the teacher uses three guidelines. First, there should be a conceptual match between the original standards and the learning objective. For example, if the standard is to compute surface area in mathematics, the student's objective would be related to understanding surface area and not something totally different like naming circles and triangles. Second, the teacher uses materials that match those used in general education. Whenever possible, the student should have access to learn using the same materials as typical peers in the general education class in order to receive full access to the content. Even in a self-contained setting, the teacher should use similar materials designed to teach the content. For example, if the general education class is reading *The Pearl* in high school, the special education teacher works from this same novel. There may need to be adaptations to the text and the student may need to use some accommodations to access and understand the story, but the literature matches the grade level expectation. Third, the student's objective has a similar performance expectation as the original standard to the extent possible. If the original standard focuses on identifying the author's purpose, the student's objective in some way does the same, such as by selecting from a choice of three purpose statements.

Alternate Achievement-

- ✓ **Same concept**
- ✓ **Same/similar materials**
- ✓ **Similar performance**

Some states help teachers with planning for this alternate achievement by providing curricular guidelines for students who take alternate assessments. Before beginning planning on how to present the same content, it may be useful to review any achievement expectations the state offers for the student's grade level. Even if the state offers this guidance, educators

will need to do some additional work to individualize the instruction for the unique needs of each learner with significant cognitive disabilities.

What This Manual Offers

Creating access to state standards requires a lot of creative thinking. The purpose of this manual is to offer guidance and examples to help teachers and other educators start and expand their standards-based instruction for students who take alternate assessments. The National Center and State Collaborative (NCSC), a project led by five centers and 24 states to build an alternate assessment system, included in its work the creation of curricular resources to promote learning of state standards by students with significant cognitive disabilities. The shared goal of NCSC was for students with significant cognitive disabilities to achieve increasingly higher academic outcomes and leave high school ready for post-secondary options. Several NCSC briefs provide more extensive coverage of standards-based instruction for students in alternate assessment (www.ncscpartners.org/resources).

A wealth of resources from NCSC was created specifically for planning instruction for students with significant cognitive disabilities. These can be found at https://wiki.ncscpartners.org. This manual offers a path through some of the NCSC resources, most directly related to planning lessons for students to learn English language arts and mathematics that aligns with their grade level.

Set a Goal: *Set a goal for what you would like to be able to do after reading this manual.*

Case Studies

This manual was written by educators who created the NCSC resources and field tested them with teachers and students in schools across the United States. While providing a path through the resources, the manual gives examples of how the resources might apply to students of varying abilities. The case studies described here are fictitious, but based on composites of students who participated in these field tests. Any similarity of a case study to an actual student is purely coincidental.

Elementary Level Case Studies (Grades 3-5)

Getting to Know Tara: Tara is beginning third grade at age 8. She has cerebral palsy with spasticity and limited use of her arms and legs. She relies on a wheelchair for mobility. Tara also is legally blind. She can perceive some enlarged images. Although Tara's intellectual level is uncertain, she currently is diagnosed as having a severe intellectual disability. Tara's strength is her social ability. Despite having limited communication skills, she will gain attention with laugher and smiles. She indicates confusion with a puzzled look and protests with frowns and a loud "ooo." Tara loves read-aloud stories and has learned to show recall by selecting between

two objects placed on her laptray by moving her arm right or left. She also has learned to make simple sets in math by pushing large checkers across a line. One of Tara's interests is dogs. Her parents hope that someday she might learn to work with a therapy dog. Because Tara loves people, she gets excited and tries hard when she has a chance to work with peers in general education. Her teacher worries about how Tara will perform in her first experience with the state's alternate assessment this spring. Tara also will need a lot of adaptations in the form of objects to supplement the assessment materials.

Getting to Know Sam: Sam is beginning the 5th grade at age 10. He has Down syndrome and has been diagnosed as having a moderate intellectual disability. Sam communicates primarily by talking, but sometimes has to repeat himself to be understood due to articulation challenges. Sam has benefited from outstanding academic instruction from both his prior teachers and tutors that his parents hire. Sam can read passages at late first grade or early second grade levels. Last year, he was able to comprehend some 4th grade text read aloud, but performed better if materials were simplified and summarized. Sam can write simple sentences and does some text typing on his tablet. He can find his favorite websites online. In math, Sam has shown his strongest ability. He can do two-digit addition and subtraction if there is no regrouping. He has some multiplication skills of single-digit numbers. If a math word problem involves addition, he can usually find the answer. Sam is in a 5th grade general education class fulltime. Sam has a lot of interests, but his passion is playing soccer. Sam's IEP team decided the state's alternate assessment was the best option for him. At the meeting, his parents asked that his academic instruction to be as close to 5th grade standards as possible.

Middle School Case Studies (Grades 6-8)

Getting to Know Jerome: Jerome is starting the 8th grade at age 13. Jerome loves computers and has a tablet that he uses to communicate. He knows about 30 symbols that relate to social, academic, and personal needs. He can find the right page on his tablet to initiate a communication (e.g., "Let's Talk," "My Personal Needs," "Math Class"). Jerome is paraplegic and uses a wheelchair. He performs best with a touch screen and does not manipulate objects well. He also can use his eyes to choose between symbols or objects. He does not speak. Jerome did not receive reading instruction when he was a child. His IEP includes trying an adapted beginning reading program with him this year that will also include some writing using a software program that involves clicking and selecting words. Jerome also has had minimal math instruction beyond identifying coins. His math skills include identifying numbers to 10. He does not consistently match a number to a set. Jerome is a member of the middle school concert band. He uses his touch screen to activate music loops that provide background rhythm. Jerome is always highly motivated if a lesson has a musical component.

Getting to Know Carlos: Carlos is an 11-year old boy with autism entering 6th grade in middle school. Carlos speaks both English and Spanish at home, but learns in English at school. He is estimated to have a moderate intellectual disability. Carlos has strong decoding skills and can read text as high as 4th grade level aloud, but with minimal comprehension. His elementary teacher found Carlos needed text written at about a 2nd grade level and a lot of practice to identify what the text meant. He learned to use a graphic organizer to identify the main idea and some details of informational text or to show the characters and key events of a story. Carlos responds to instruction in English, but will speak Spanish when he wants a translation.

Carlos likes math and asks for worksheets to do both in his free time and at home. He can add and subtract single-digit numbers and recognize geometric figures and simple fractions. He likes to match sets of numbers to 20. Carlos' special interest is cars. He will talk about the types of cars and parts of cars for long periods of time if not interrupted.

Getting to Know Chris: Chris is a 12-year-old in 7th grade who has significant physical disabilities. He is in a wheelchair and has no use of his arms or legs. He has a high number of seizures that sometimes take away from his ability to respond to instruction. Chris missed over two months of 6th grade due to hospitalizations. Chris has vision and will sometimes make an "ee" sound for yes. His teacher has asked for an assistive technology evaluation for Chris to obtain more options for his communication. Meanwhile he has been working hard with Chris to get him to move his eyes right or left to indicate an answer using pictures or objects or to vocalize "ee" when he taps the right answer. Chris has a head switch to use to operate the computer, but has not mastered doing so without physical guidance. To date, Chris has shown minimal responses to either read-aloud stories or any math work. He received the lowest possible raw scores on last year's state alternate assessment. In contrast, the teacher has already been surprised the first week of school to see how Chris will sometimes watch him closely as he teaches. He thinks Chris might have more interest and ability than has been discovered so far.

High School Case Studies (Grades 9-12)

Getting to Know Dave: Dave is a 16-year-old entering 10th grade who has autism. He spent an extra year in middle school because of his size and social maturity. Dave is still extremely small for his age. Although he can speak, he usually will gesture for items he wants and rarely talks.

He will respond to an array of picture selections to answer a question, but will not initiate an answer. Dave can read and comprehend passages at about a first grade level. He has learned to answer comprehension questions about text read aloud that is adapted to the third grade level, but mostly can answer literal recall questions. He learned the counting up strategy to do simple addition problems, but does not necessarily know what his answer means. Dave loves anything mechanical and will watch the operation of any machine for hours. He keeps a set of pictures of various machines in his pocket. He sometimes will sit and stare at one of them while perfectly imitating the sound (e.g., of a printer or blender). Dave responds best to one-to-one instruction, but will tolerate a small group. If overwhelmed by classroom noise or the demands of a task, Dave will engage in self-injurious behavior (slapping himself) and has to have the opportunity to go to a separate room for a period of silence.

Getting to Know Liz: Liz is a 15-year-old entering the 10th grade. She has Angelman Syndrome, no speech, and walks with difficulty in balance. She has a severe intellectual disability. Liz's strength is her social skill. She will seek out interaction through walking to someone, showing materials, and vocalizing a calling sound. She is used to working in small groups for instruction, but sometimes has to be reminded to keep her hands on her own materials and focus on the teacher. Liz has emerging literacy and numeracy skills. Neither was emphasized in her school career so she is entering high school with a minimal foundation in academics. She shows interest in literacy by carrying magazines or books to people in her surroundings so they will read aloud to her, but she only sustains attention for about 5 minutes. She will move or tap one of two pictures to show some understanding of big ideas. She especially likes humorous stories and poems and will sometimes show understanding by laughing when something absurd

happens. Liz has only done math embedded in a daily routine like finding three cups to set a table. She can put one cup with one plate (one-to-one correspondence). Liz loves anything loud such as social-pep rallies, physical education class, school dances, watching sports teams, and marching bands.

Planning What to Teach

The first step in planning what to teach is to identify the student's assigned grade level based on chronological age and the corresponding grade-appropriate content. This is not likely to be the student's reading or math level.

The first step to plan what to teach is to identify the content for the student's assigned grade level.

For example, **Liz** is assigned to the 10th grade because she is 15 years old, but she is on an emergent literacy level. For Liz, the teacher will need to identify exactly what the 10th grade content will be. Information on how to make the 10th grade content accessible is in the next section on *Planning How to Teach*.

One of the challenges in identifying the content of the student's grade level is that many special education teachers have not had extensive professional development or preservice education in English language arts or mathematics. Collaboration with general education teachers who do have this background is always a great place to begin. General education teachers not only know what content is most important for the grade level, but often have developed activities and hands on materials that can be adapted for students with significant cognitive disabilities. If the student is in general education, the best way to begin may be in working with the teacher to create lesson plans universally designed to include

all students in the classroom, including those with significant cognitive disabilities. Some excellent examples of these types of lesson plans can be found on the NCSC Wiki site under UDL Instructional Units.

(https://wiki.ncscpartners.org/index.php/UDL_Instructional_Units).

Collaboration with the general education teacher is key in planning the content.

In **Sam's** 5th grade general education math class, the teacher is introducing how to round decimals to the nearest tenth. For example, she wants the class to be able to round 245.623 to 245.6. Her lesson plan includes a review of decimals, a demonstration of rounding, and some video clips from the Internet demonstrating rounding. Then students will work in groups to round decimals for 20 number problems. Following the group work, students will complete a worksheet on rounding decimals to show their understanding. Sam has strong knowledge of numbers, but no understanding of decimals. The special education teacher did some warm up work with Sam the day before to show how decimals are part of the whole using strips separated into blocks of 10. Then she showed how each block of 10 could be further divided into 10 each. She asks the general education teacher to review this concrete illustration of decimals at the start of the lesson because other students may also be unclear on what the decimal means. Sam will participate in this part of the lesson and the video clips needing no special accommodations. When the small group work begins, Sam may not be able to articulate his answer clearly. Sam's group will work with a computer tablet that has the numbers. When it is Sam's turn, he will change the number to show how to round it with the help of a peer who will then read it aloud. Sam's worksheet will have numbers with a mix of those to round up and down but using numbers to the hundredths so he only has to attend to one number when

rounding up or down (e.g., 23.46, 17.82). This last number will be highlighted and Sam will use a visual reminder whether to round up if the number is 5-9 or keep it the same if it is 0-4.

If not working directly from general education teacher's lessons, the special education teacher will need to determine how to prioritize and adapt the grade level content. Sometimes it helps to begin by understanding the content in more depth. Some of the NCSC Wiki resources can help with this. There are Instructional Families that show how content links across the grades. Seeing how content relates and builds across grade levels can be helpful when planning for a group of students in multiple grades (e.g., 3rd-5th graders). NCSC Element Cards provide ideas for how to teach the content. These include understanding the most basic concepts needed to address the content, which can be helpful for a student like Liz or Chris. For example, there is an element card in geometry for 7th graders that might be helpful in planning for **Chris**. https://wiki.ncscpartners.org/index.php/Element_Cards_Geometry

Resources for gaining understanding about language arts and math content can be found at wiki.ncscpartners.org.

There is a large gap between the grade level expectation to solve real-world problems involving area, volume, and surface area and Chris' lack of the most basic numeracy skills. What the element card shows is that the Concrete Understanding needed for this skill is to identify the base and height of a figure. This can build to understanding how to multiply base x height. To make the lesson have a purpose, the teacher will use an activity in which the students need to find the surface area, such as choosing which sheet of wrapping paper will be large enough to wrap the gift.

Because Chris has begun to watch the teacher closely with his eyes, the teacher is going to use an enlarged object (large cylinder like a tube that holds tennis balls or new socks) and

have Chris look toward the base as the teacher points to it. Then Chris will lift his head to indicate the height. The teacher will then show Chris two pictures, one showing the base and one showing something else, and have him turn his eyes toward the base. Because he is not sure what Chris understands, he will then show him the radius (r). He will check understanding by having Chris nod when he outlines the radius. Finally, the teacher will have Chris watch as another student calculates the surface area of the can by plugging the numbers into the formula on the whiteboard screen. As Chris' understanding of the math concept and ability to manipulate objects on the screen using a switch increase, the teacher will help Chris show the surface area. To build Chris' numeracy skills, the teacher will also have him communicate the first number in the radius (2.45) and the height (8.45) by having him choose between one of two numbers with his eyes (e.g., 2 and 4).

If the teacher needs more information on the academic concept itself, the content modules can be helpful. **Sam**'s teacher was not sure about a state standard for 5th graders on text structure. She decided to become better informed before collaborating with the 5th grade teacher and went to the content module: https://wiki.ncscpartners.org/index.php/Text_Structure_Content_Module. After studying the map, Sam's teacher realized that for narrative text (e.g., stories), she would need to teach Sam concepts like plot, setting, characters, point of view, and theme. For informational text, she would focus on description, sequence, cause and effect, problem, and solution. Now that Sam's teacher has some idea of what text structure is, she is ready to help plan lessons with the 5th grade language arts teacher.

Mr. Kerry was a new high school English language arts teacher in a system that had been using standards-based instruction for students in alternate assessments for several years. He wanted an overview of what students might have learned and what would be coming next. He also wanted a quick reference to see what content might be addressed. A fellow teacher said referred him to the Curriculum Resource Guides https://wiki.ncscpartners.org/index/php/Curriculum_Resource_Guides. Mr. Kerry found it helpful to see the ELA guides. He found the examples from prior grades a good starting point in reviewing IEPs and looking at the prior teachers' materials to know what might have been addressed. For example, one student had learned to select the picture/word for the claims an author makes. Mr. Kerry could build on this in fostering **Dave**'s comprehension. He wants Dave to be able to select evidence to support a conclusion using informational text.

While reviewing resources, it may be helpful to make a chart on priority content to teach for each grade level to plan for a year's instruction. Table 1 gives an example of a form to use for this planning. Note that the teacher selected novels with each of the grade level teachers, but will use one novel with all her students. While using the novel, she will differentiate expectations for students at each grade level.

The priorities shown in this table are examples based on what this school system prioritized in its pacing charts used by general education teachers. When planning the year's priorities, it is important to anchor these to one's own state and school system's requirements.

Table 1. A Sample Form for Planning the Year's Priority Academic Instruction for Students in Middle Grades

ELA PLANNER	**6th Grade Priorities**	**7th Grade Priorities**	**8th Grade Priorities**
1st Quarter Theme: Self Awareness Novel: Freak the Mighty Informational text and poems that focus on self awareness	Determine main idea And cite evidence from text. Summarize plot Write an argument Determine word meaning	Identify theme and locate text evidence to support it. Provide summary of plot to build a book report. Write an argument and select reasons to support it. Determine word meaning.	Cite evidence that best supports analysis of text including theme and main idea Provide summary across genres of text. Write an argument with clear reasons to support it. Determine word meaning.
2nd Quarter Theme: Find and Use My Voice Novel: The Outsiders Poems and true stories about heroes	Outline how plot unfolds and how each character responds. Write a paragraph about a life experience. Engage in discussions about literature.	Compare and contrast characters using text evidence. Write explanatory paragraph about why did something. Engage in discussion about literature. Determine word meaning.	Identify how plot, setting, characters convey theme. Research a hero. Present claims about hero and findings that support it. Engage in discussion about literature. Determine word meaning.
3rd Quarter Theme: Speak the Truth Novel: Roll of Thunder, Hear My Cry Texts: Information on Civil Rights movement; songs about justice	Summarize chapters. Compare characters. Gather information. Write an informative paragraph. Present topic to the class. Determine word meaning.	Summarize chapter and give reason for character's action citing text evidence. Use technology to research topic. Produce coherent summary of information found. Determine word meaning.	Summarize chapters. Compare characters across novels read to date. Use technology to research topic related to novel's themes. Produce coherent summary with two or more paragraphs. Determine word meaning.
4th Quarter Theme: Perseverance Literature: Diary of Ann Frank Informational text on Holocaust; poems and	Compare text across media (play, movie) Outline plot of a play and show how characters respond. Summarize play as a	Determine two central ideas in the text and cite evidence to support them. Write explanations of why characters respond as they do.	Contrast the author's purpose across genres of text on same theme (e.g., play, poem, informational article on Holocaust). Cite evidence from each.

true stories on perseverance	simple story. Evaluate an argument as having support or not. Engage in collaborative discussions.	Write an argument with clear reasons. Determine word meaning. Engage in collaborative discussions.	Write argument with clear reason and evidence from research. Determine word meaning. Engage in collaborative discussions.

Application: *Make a priority planning chart like the one shown in Table 1 using information you glean from the NCSC resources and information found on line about your state's priorities for each grade level. These priorities are sometimes listed as "Power Standards." Some schools or states have pacing guides that outline these by quarter.*

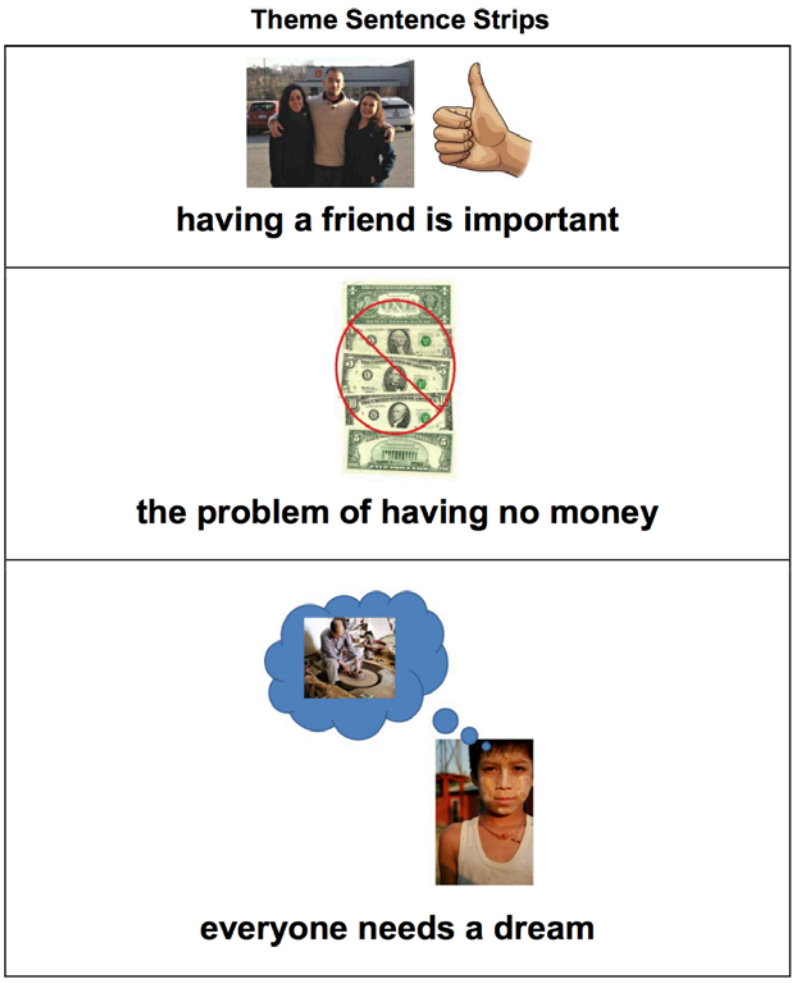
CONTENT AREA	GRADE LEVEL	GRADE LEVEL	GRADE LEVEL
1st Quarter			
2nd Quarter			
3rd Quarter			
4th Quarter			

Case Study Example. Ms. Johnson is the middle school teacher for **Jerome**, **Chris**, and **Carlos**. In her school, the special education teachers specialize in teaching either English language arts or mathematics. Ms. Johnson is the English language arts teacher. Reviewing Table 1, she realizes each student will need to be able to summarize the novels they read and identify the main idea and theme. She will be creating an adapted version of the novel to simplify and abbreviate the text for her students. She decides to write her adaptation for each chapter at about the 4th grade level so Carlos will be able to read it independently. She will use

a variety of ways to read the text aloud each day. Sometimes she will read it, have Carlos read it, or prompt Jerome to use text-to-speech technology. Ms. Johnson also will use prompting to help Chris activate text-to-speech using a head switch.

She creates a page for Jerome's computer tablet that can be used across texts and chapters to summarize the story elements including the setting, characters, problem, and resolution. Ms. Johnson will use a similar chart for all the students in her class as she teaches. She also will use a chart for sequencing what happened first, second, and last. She will have each student identify the main event of the chapter and how it relates to the theme. For Jerome, he will select a picture for the main event and a phrase for the theme. He will then select from options of events from the story that support the theme using short phrases activated using text-to-speech features. Carlos can write, so he will fill out a worksheet after each chapter for these same elements of the story. While Jerome selected answers, the goal is for Carlos to generate them to fill in his graphic organizer. For Chris, Ms. Johnson will work on essential understanding. She will have him identify characters by indicating who was in the story using two choices presented to his right and left. She will then wait for him to move his head toward the correct answer. Ms. Johnson also will ask him what the story is about using a theme word and highly illogical distractor (e.g., "friendship" or "tables"). If he does not eye gaze, she will present the choice again and try to get him to use his "ee" for yes when she gets to the correct choice. She will build on this by having him select between two picture options she places on a graphic organizer for him. Figure 1 shows how Theme strips might be configured from one of the NCSC Wiki resources.

Figure 1. Language Arts Activities for Scripted Systematic Instruction (LASSI) Materials for Middle School Narrative Text

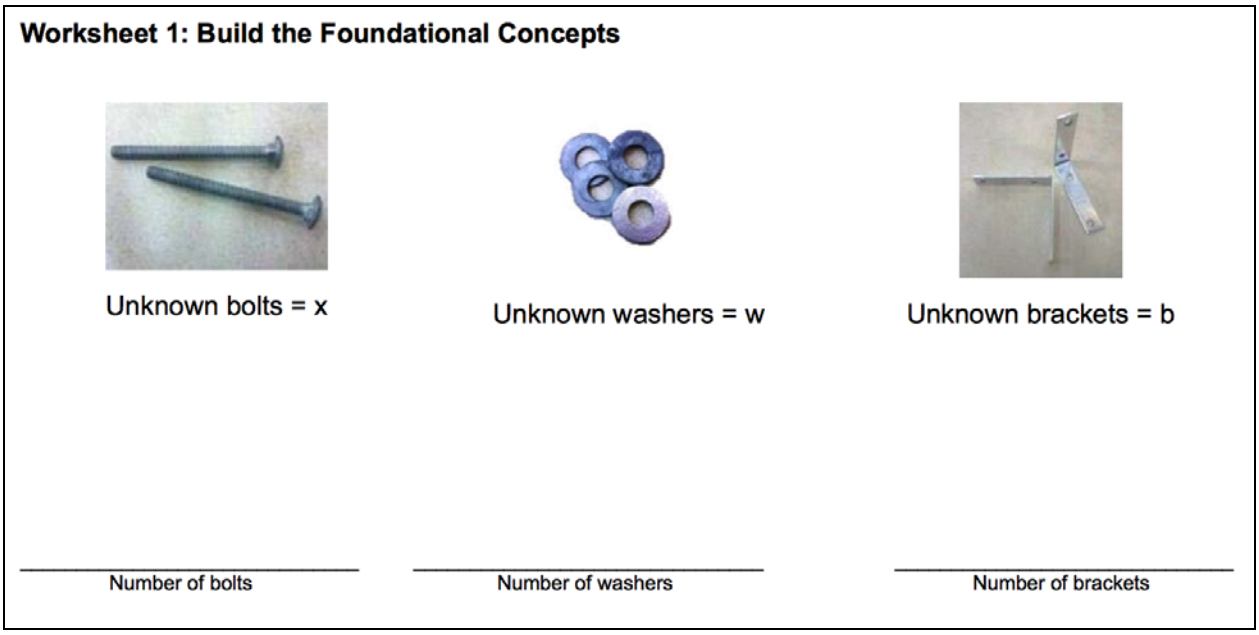


Mr. Gomez teaches mathematics at the high school level to both **Dave** and **Liz**. Liz is taking high school algebra. Mr. Gomez wants to find a way to make writing mathematical equations meaningful for her given her limited numeracy skills. He uses the ideas found in the Mathematical Activities for Scripted Systematic Instruction (MASSI) found at https://wiki.ncscpartners.org/index.php/High_Equations_MASSI. In this sample lesson, equation formation is taught using a vocational activity of working at a hardware store.

The MASSI provides a suggested goal for building the essential understanding of creating sets. He tells Liz that her job is to set up bags of some number of bolts and writes (5x) for five bags of bolts. The x means they do not know how many bolts go in each bag yet. They will make four bags of washers (4w) and 6 bags of brackets (6b). He has Liz help to create the equation by selecting numbers to put on the equation: 5x+4w+6b.

Mr. Gomez sets up the task of getting the bolts ready for sale by setting up bags of five. Liz can count with one-to-one correspondence, so Mr. Gomez uses a large number line and puts a block over the numbers after six. Liz puts a bolt on each number 1-5 to create the first set. Liz then scoops the bolts into a bag. He helps her repeat this for five sets of bolts. Washers are sold in sets of eight, so Mr. Gomez uses a similar procedure to have Liz count out sets of 8. He has Liz make four bags with 8 bolts. Finally, they do sets with three brackets. They make six sets of brackets. Each day, Mr. Gomez will repeat this task using different numbers for the sets to build Liz's counting and number concept skills.

To scaffold Liz toward the high school expectation of creating the equation, he now has her complete the equation 5 bags with (5) bolts+ 4 bags with (8) washers + 6 bags with (3) brackets. Finally she fills in the mathematical summary 5(5)+4(8)+6(3).



Worksheet 1: Build the Foundational Concepts

Unknown bolts = x

Unknown washers = w

Unknown brackets = b

_____
Number of bolts

_____
Number of washers

_____
Number of brackets

Worksheet URL:
https://wiki.ncscpartners.org/images/e/ec/Worksheet_1_Building_Foundational_Concepts_and_Generalization.pdf

Mr. Gomez sets a higher expectation for **Dave** because he has a stronger concept of numbers. Dave also loves the hardware task when shown the parts are used for creating machine parts. He wants Dave to learn to simplify the mathematical expression, which more closely aligns with the grade level expectation. Because Dave does not always understand his answer in mathematics, he has him fill bags similar to what Liz did except Dave can count out his sets without a number line. He then teaches Dave to set out the number of bags he will need using the equation as a guide. For example, if given 3x+4b+2w, Dave is able to set out 3 bags for bolts, 4 for brackets, and 2 for washers. After a few days when Dave can do this with almost any number Mr. Gomez puts in the equation, he tells Dave he needs to keep inventory of how many bags are sold for all customer orders. The first order is 4b+2w. The second order is

3b+6w. He needs to simplify 4b+2w+3b+6w to understand he has sold a total of 7 bags of brackets and 8 bags of washers. See MASSI Worksheet 3 for High School Equations.

Worksheet 3: Simplifying Expressions (Writing equations in multiple forms)




Nala needs 8 bags of bolts and 3 bags of washers. Wally needs 1 bag of bolts and 6 bags of washers. Simplify this expression.

$$8b + 3w + 1b + 6w$$




Pierre needs 1 bag of washers and 3 bags of brackets. Adara needs 4 bags of washers and 5 bags of brackets. Simplify this expression.

$$1w + 3b + 4w + 5b$$

Worksheet 3: Generalization




Hans needs 4 bags of washers and 2 bags of brackets. Fredericka needs 2 bags of washers and 6 bags of brackets. Write the expression that represents this problem. Use the letter w to represent the number of washers in a bag and the letter b to represent the number of brackets in a bag.

Now simplify the expression.

Worksheet URL:
https://wiki.ncscpartners.org/images/7/75/Worksheet_3_Simplifying_Expressions_and_Generalization.pdf

Planning How to Teach

Standards-based instruction requires planning both what to teach and how to teach. From research on teaching academic content to students with significant cognitive disabilities, it is possible to identify the teaching methods that are most likely to promote student progress (Spooner et al., 2012). These are called evidence-based practices. Most evidence-based practices for students with significant cognitive disabilities are based on principles of applied behavior analysis in which a target response is defined so that it is observable and measurable. The teacher then uses systematic prompting and feedback to help the student learn to make this target response. The NCSC Instructional Resource Guide describes and illustrates these practices. https://wiki.ncscpartners.org/index.php/Instructional_Resource_Guide

Using instructional strategies gleaned from research can promote student progress.

The Instructional Resource Guide provides help for deciding the response mode the student will use to show what he or she knows during academic lessons. While some students have speech and can answer a question, others may need to have options presented as words or pictures in an array. For students with emerging skills like Liz, Tara, and Chris, the teacher might begin with only two or three options. Students may make their selection by using their eyes to focus on one of the two answers when the teacher holds the options at eye level. Others might touch the response when the options are placed on the table or shown on computer screen. Others may need to use an assistive technology switch to click the correct

option. Some students can write or type responses, others may need to select an answer to "write." Before beginning any academic lesson, it is critical to determine how the student will make the target response.

Before beginning instruction it is important to determine how the student will make the target response:

- **Say the answer**
- **Type or write**
- **Select from an array by**
  - **Pointing**
  - **Eye gaze**
  - **Using a switch**
- **Select object**

Application: *Make a list of the students in your classroom. How will each student answer a question about a story? Show a number in math? Complete a worksheet?*

When presenting the academic concept to be learned, the teacher will want to avoid relying on lectures about the content. Students with significant cognitive disabilities need frequent opportunities to respond. One way to present a new concept that is illustrated in the Instructional Resource Guide is to use **Model, Lead, Test**. The teacher begins with a simple statement of what is to be learned, such as "Today, we are going to learn to measure with a ruler." It also helps to relate the lesson to an activity the student understands. For example, "We need to measure the paper to cover our new books" (or wrap a gift). The teacher models how to measure with a ruler and read the number of the length. Then, the teacher helps the student measure the length and say the number (doing it together). Finally, the teacher has the student demonstrate how to do it to check for understanding.

The LASSIs and MASSIs suggest several ways to use this interactive instruction. Look for theses symbols:


EXAMPLE/NON-EXAMPLE


MODEL/LEAD/TEST

Another way to introduce a new concept is to use **Example/Non-example Training**. If the teacher is introducing the concept of "greater than," he or she might start by saying, "Today we are going to learn which set is greater than the other. Greater than means more." To ground the lesson in a familiar activity, the teacher might show two sets of appealing objects (e.g., stickers, marbles, candies) and ask which one the students would like to have. Likely the answer will be the set that has more. If not, the teacher can say he or she wants the set that is greater than the other one. Then the teacher shows two sets and says, "This one is greater than." All the students point to and say "greater than" (remember this can be done using assistive technology). This is repeated with several sets of objects. Then the teacher says, "This one is NOT greater than" while pointing to the smaller set. The students repeat this. To test, the teacher shows two sets and says, "Find the one that is greater than the other." This lesson can be used to scaffold into using the "greater than" symbol (>). There are many examples of Example/Non-example using Model-Lead-Test in the MASSIs and LASSIs shown in the NCSC Wiki (https://wiki.ncscpartners.org) and a script for how to do both of these procedures in the Instructional Resource Guide.

Lectures are not usually effective for students with significant cognitive disabilities. Instead, introduce new concepts using an interactive strategy like Model/Lead/Test or Example/Non-example.

Application: *What is an academic concept in either math or English language arts that you might teach using either Model/Lead/Test or Example/Non-example? What will you say when you teach it?*

Besides identifying the student's response mode and introducing the lesson in an interactive format, a third strategy to make instruction more effective is to use **systematic prompting with feedback**. Two options that are especially applicable to academic content instruction are time delay and the system of least intrusive prompting.

Time delay works well whenever there is a word, number, or symbol to recognize. It also works well to teach students matching, like putting a set of objects with the number or the definition with the word.

To use time delay, the teacher has to decide first how the student will respond. If the student can speak and will read the symbol, the teacher's prompt will be a verbal model. To promote errorless learning, the teacher first presents each word or symbol with an immediate prompt. For example, "Read 'setting'" while holding up the word "setting." The student simply repeats the word "setting" while looking at the flash card. The teacher praises correct responding. The teacher then repeats this for all the words in the set to be learned (e.g., setting, character, problem, resolution). To fade the student's reliance on this verbal model, the teacher now inserts a small amount of time between showing the flash card and giving the verbal model. She shows the flash card, waits 4 seconds for the student to respond, and if there is no response, models reading "setting." If the student anticipates the correct answer before the prompt, the teacher provides enthusiastic praise "Terrific! You read 'setting' by yourself." If the student guesses a wrong answer, the teacher reminds the student "Don't guess if you're not sure. Wait and I'll help you with the answer."

Time delay is an effective strategy to teach students to identify words, numbers or symbols or to do matching like words to definitions.

A similar strategy is used for students who need to respond by making a selection from an array by pointing, eye gazing, or using a switch. The teacher places the array on the table or electronic device (setting, character, problem, solution), says the target word "setting," and immediately points to the correct answer "setting." The student then selects "setting" and the teacher praises correct responding. The teacher repeats this for all words in the set. Then, the teacher fades reliance on the pointing prompt by waiting a few seconds after showing the array. For example, he or she displays the array (character, problem, setting, solution), says the target word "setting" and waits 4 seconds for the student to respond. After 4 seconds, the teacher points to the correct response, then the student imitates finding the answer, and the teacher praises this correct response. If the student finds the correct answer before the prompt, the teacher gives enthusiastic praise, "Wow! You found 'setting' by yourself! Good job!" If the student points to the wrong answer, the teacher reminds the student not to guess.

Time delay may involve showing the symbol and modeling the spoken answer or putting the options in an array and pointing to the correct answer. Either prompt is faded by waiting a few seconds for the student to anticipate the correct response.

There are a few tips to remember when using time delay. Remember, always start with a "no delay (zero seconds) prompt" to prevent errors in early learning. Then add time between showing the flash cards and giving the prompt. If the student jumps in with a guess on a no delay prompt, it may mean the teacher is actually waiting a few seconds. Remind the student to wait and be sure to give the prompt right away. If the student

The MASSIs and LASSIs often suggest using time delay. A clock symbol is used to indicate where to use this approach.

makes errors after the prompt is faded to 4 seconds, it may be necessary to do more practice trials using the no delay prompt again. If collecting data, the goal is for students to get the answer with no prompt, so give a + for only the answers that are correct before the prompt.

When using time delay for matching, the teacher models the match at no delay. For example, the teacher may give the definition "when two people do not agree" and the words "agree," "conflict," "solution," and "table" (a nonsensical option helps to know if the student even understands the task). At no delay, the teacher says, "What word means 'when two people do not agree'? 'Conflict,'" and points to the word "conflict." The teacher then points to the word and receives praise. Further instructions for using time delay and additional examples are provided in the NCSC Instructional Resource Guide.

Time delay can be used with matching tasks.

https://wiki.ncscpartners.org/index.php/Instructional_Resource_Guide

Application: *Try the examples above to use time delay to teach vocabulary words and matching to definitions. Then generalize the strategy to teaching number identification.*

Tara's teacher wants to introduce the vocabulary she will need to answer the questions for the story *Because of Winn Dixie.* Tara loves animals and her teacher thinks this will be a great story to get her started on more literacy skills. Because Tara is legally blind, the teacher will not be able to use the picture responses shown in the elementary LASSI for Vocabulary and Acquisition (https://wiki.ncscpartners.org/index.php/Language_Arts_Sample_Systematic_Instruction_Script_(LASSIs):_Elementary_Vocabulary_and_Acquisition). The teacher decides to use small figures

for each word. She chooses a small figurine of a girl for Opal and a man for Preacher. She uses a can to represent the grocery store and a stuffed dog for Winn Dixie. For Florida, she uses a cut out cardboard shape of that state from a puzzle she has in the room. She also cannot simply point to the correct answer as her prompt because Tara will not see it. Instead, her prompt will be to guide Tara's hand to scan the objects in the array and then gently lay Tara's hand on the right object.

To teach the vocabulary, the teacher puts two objects on Tara's tray (girl, dog) and says, "I have two things on your tray. Let's touch each one." (She lets Tara touch each to explore her options). Then the teacher uses a no delay trial by saying, "This is Winn Dixie the dog," while placing Tara's hand on the dog. After Tara puts her hand back in her lap, the teacher checks right away for understanding, "Now you find Winn Dixie the dog." Tara does and the teacher praises her. She repeats this for all the objects. Then just to be sure, the teacher goes through them all again at 4 seconds delay.

Because this works well during story time, Tara's teacher extends this strategy to mathematics. Tara has learned to count out sets by moving large checkers. Her teacher introduces large plastic numbers using time delay. After Tara makes a set of 5 checkers, the teacher has her find the number 5. At first, she puts the 5 and a dissimilar number on the tray (e.g., 1). She tells Tara to touch each number and feel its shape. Then she says, "You made 5, this is 5," while moving her hand to the 5. She immediately checks for understanding, by having Tara put her hands in her lap and then find the 5. This is repeated for several numbers and helps to get Tara ready to do some of the math work in the MASSIs.

Another prompting strategy that works well for academic instruction is the system of least prompts. In this method, the teacher follows a sequence of prompts only giving as many as needed for the student to make the correct response. A popular sequence is to begin with a task direction such as, "Find the title of this book." The teacher then waits a few seconds for the student to respond. If no response, the teacher gives a verbal direction, "Find the title 'Because of Winn Dixie.'" The teacher again waits for a response. If none, the teacher uses a model, "Find the title 'Because of Winn Dixie' like this" as she points to the title. He or she waits again to see whether the student responds. If not, the teacher uses physical guidance, "Find the title 'Because of Winn Dixie' like this," as the teacher gently lifts the student's hand to point to the title.

In Least Intrusive Prompting (LIP), the teacher follows a sequence of prompts like a verbal direction, model, and physical guidance. The teacher only gives as much assistance as needed for the student to make the correct response.

There are additional considerations for using **Least Intrusive Prompting (LIP)**. First, the teacher needs to pick a sequence of prompts that work for the individual student. For **Tara,** the title of her book has been raised using puff paint. She is learning to scan the cover to find the words that are the title. For Tara she may be gaining the general concept of what words are by finding these symbols as they are read. Her prompts might be this. The teacher gives her the book and says, "Find the title." She waits for Tara to explore the book and find the puff painted words. If this does not occur, she gives the first prompt, a verbal directive, "Use your hand and find the title, 'Because of Winn Dixie.'" Tara does not respond, so the teacher uses a partial physical prompt. She says, "Find the title 'Because of Winn Dixie.' Use your hands," and she places Tara's hand on the book under the title. If Tara still does not locate the title, she uses a

full physical prompt, “Find the title, ‘Because of Winn Dixie,’ like this” and guides her hand to the words. She then emphasizes the point by helping her touch each word as she reads, “Because of Winn Dixie.” Whenever Tara finds the title, she gives her praise. If collecting data, give a + only for responses the student makes with no prompts.

Individualize the prompts in Least Intrusive Prompting for the learner.

Some experts say that Least Intrusive Prompting is self-fading when used correctly. That is, if the teacher never gives more prompts than the student needs, the student will eventually respond correctly without a prompt. If this is not occurring, the teacher can only praise responses that are as good, or better, than the day before. Once Tara can find the title with a partial physical, the teacher does not praise her whether she waits for full physical guidance. The teacher may also wait longer before giving the next prompt to see if the student will respond. What is not helpful is to repeat prompts over and over as it confuses the student about when to respond. If the student does not respond to the verbal prompt, give the model instead of saying the verbal prompt over and over. Also, it is not helpful to “beg” students to respond with statements like, “Come on! I know you can! I know you know it.” This can actually reinforce students for NOT responding to get more teacher attention. Another tip is to move to the next prompt immediately if a student begins to make an error. Often the teacher can interrupt the error (e.g., by covering the materials with her hand) and then giving the next prompt.

The MASSIs and LASSIs often suggest using Least Intrusive Prompting. A helper picture is used to indicate when this is used.

Carlos' math teacher decides to use Least Intrusive Prompting to teach Carlos to find the range of numbers shown on a table with bar graphs. She is following the MASSI for Data Analysis for Middle School.

Figure 2. Sample Page from Data Analysis MASSI using Least Intrusive Prompts

STUDENT PRACTICE: Give each student the 7th grade election results table (and then the 6th grade) and the "Equation for Range" template. **Now it's your turn. Look at the table and use it to calculate the range.** Use LEAST INTRUSIVE PROMPTS script as needed to help students with each step.

**Note: Have the students write the numbers in the formula, but do not score writing ability. If students are unable to write the number, they can use number stamps or direct the teacher to write it for them.

**Note: In the following problem, students are required to subtract. If students are unable to subtract independently, it is ok to provide them with a calculator or other visual, however they must do the work independently. Be consistent with the type of accommodation provided here.

CHECK AND SCORE

STEP	Teacher Says/Does	Student Response
35.	Give each student the 7th grade election results table and a blank range equation and say **"Find the range for the 7th grade set of data."**	Student writes, stamps, or otherwise identifies the highest value (35) in the corresponding place in the equation.
36.	Wait for students to independently initiate this step or say **"What's next?"**	Student writes, stamps, or otherwise identifies the lowest value (19) in the corresponding place in the equation.
37.	Wait for students to independently initiate this step or say **"Now solve for the range."**	Student subtracts 35-19 to get the correct answer (16) and writes it in the equation.
38.	Give each student the 6th grade election results table and a blank range equation and say **"Good work finding the range for 7th grade, now find the range for the 6th grade set of data."**	Student writes, stamps, or otherwise identifies the highest value (32) in the corresponding place in the equation.
39.	Wait for students to independently initiate this step or say **"What's next?"**	Student writes, stamps, or otherwise identifies the lowest value (21) in the corresponding place in the equation.
40.	Wait for students to independently initiate this step or say **"Now solve for the range."**	Student subtracts 35-19 to get the correct answer (11) and writes it in the equation.

Materials:

8th Grade		7th Grade		6th Grade	
Kamaria	30	Amy	23	Anya	25
Francis	16	Ben	29	Ali	27
Isaac	25	Karim	35	Clara	21
Ming	28	Esperanza	29	Liam	25
Leah	16	Maya	19	Ruby	32

Middle School MASSI on Data Analysis URL:

https://wiki.ncscpartners.org/index.php/Middle_Data_Analysis_MASSI

Carlos has strong knowledge of numbers, but he does not know how to find the range or interpret a bar graph figure. The teacher follows the task analysis steps 35-40. She tells Carlos to find the range. On the first day she modeled one example for Carlos. Now she will use her Least Intrusive Prompting to help him do the next one on his own. "Find the range for the 7th grade set of data." When Carlos does not respond, she gives a verbal directive for the first step, "Show me the 7th grade data." When he does not, she models it by circling the 7th grade with her finger. Then Carlos does so. She waits for him to take the next step. When he does not, she says, "Find the highest score." Carlos waits. She shows him, "Here, 35 is the highest score. Write it in your equation." With this model, Carlos writes "35" in his equation. She waits for him to continue. Carlos looks at his equation and reads, "Lowest score." He looks at his bar graph and finds the "19" and writes it. "Perfect!" the teacher says. "You found the lowest score by yourself." She waits for him to finish. He begins to add the numbers with the calculator and she interrupts by gently putting her hand over the calculator screen and then erasing his answer. She gives the verbal direction, "Subtract to find the range." Carlos says, "Si!" and then subtracts the numbers with his calculator. He writes the answer in the box. After a few more practice problems, she gives Carlos three more examples to do at his desk.

Besides finding the response mode, using interactive instruction, and systematic prompting with feedback, another important consideration is to collect ongoing data for progress monitoring. The MASSIs and LASSIs provide a Progress Monitoring sheet that summarizes every response the student makes in the lesson. The teacher can record the

responses the student makes without help (+) versus with a prompt (P). These data can help the teacher know what steps to review when repeating the lesson the next day and which responses are reliable. Because teachers often use the LASSIs and MASSIs with small groups of students, it may be necessary to collect data on one student each day. This student can serve as the group leader for the day giving the answer first so the teacher can check for understanding. Most students will need the LASSIs and MASSIs repeated for at least a week of lessons, if not across multiple weeks. These scripted lessons offer enough breadth and examples to make this repetition doable. Stop signs within the lessons show possible places to end the day's lesson. The teacher can then recycle through as much of the prior day's lesson as needed before moving forward to a new stop sign.

The MASSIs and LASSIs were written for repetition across days. Stop signs within the lesson plans show possible stopping points for each day. Teachers can use the Progress Monitoring data sheets to track student progress.

Teachers are encouraged to view the Webinars on each set of LASSIs and MASSIs. These include not only instructions for their use, but videos of students and teachers engaged in the activities described in the lesson plans. These can be found in the NCSC Wiki under Educator Professional Development and Parent Resources. https://wiki.ncscpartners.org/index.php/Professional_and_Parent_Resources. Look for the MASSI and LASSI Presentations links.

The NCSC Wiki has Webinars on the LASSIs and MASSIs that give further instructions and show actual students and teachers engaged in theses academic lessons.

Application: *Set a goal to review the LASSI and MASSI webinars. By what date will you have reviewed this online resource?*

Putting it All Together

The LASSIs and MASSIs offer lesson plan examples where all of the concepts in this manual have been combined into scripted lesson plans. These plans focus on content recommended by curricular experts as top priorities, they use evidence-based practices validated by leading researchers. The LASSIs and MASSIs were developed with teachers and students in Charlotte, North Carolina and then field tested with teachers in multiple NCSC states. For some students, teachers may find that they can follow the plans closely as written. For others, some adaptations will be needed to meet unique student needs. The following applications of the case studies provide examples of such adaptations.

Mr. Lim will be teaching **Tara** her mathematics skills. He begins by planning how to teach her the Data Analysis MASSI. The first step is for Tara to sort data that will then be graphed. He thinks Tara will understand and like the provided activity of preparing a graph related to how students get to school, but Mr. Lim cannot use the pictures provided with the MASSI because of Tara's lack of vision. Instead, he uses small figures for walkers, small cars for car riders, and small buses for bus riders. He begins by telling her what each student does and having her find the correct object and put it in a bin. He then helps her to put each bin into an object graph made with small boxes for each bar. Because of Tara's limited movement, he helps her slide the object into the slot. After she has filled a column, he helps her feel the slots to count the numbers with him. For example, "one, two…there are two walkers in Ms. Smith's class." While Tara makes these responses, he has the other students in his small group do the same using the pictures provided with the MASSI. His instruction with objects with Tara helps

the other students know what to do with their pictures. When needed, Mr. Lim uses least intrusive prompting to help either Tara or her classmates complete their graphs. The students then fill in a table to show the number of walkers, bus riders, and car riders. The other students move a number to the table to show each. In the future, the students will look at a number table and then make the bar graph. By making the graph first, Tara is learning what the numbers mean. He has Tara touch one of the two plastic numbers to indicate her answer. This is new for Tara and she will need a lot of prompting in the beginning. Although the MASSI has more content, because Tara is a 3rd grader and these skills are so new for her, he lets her take a break while he works with the rest of the group to check their graphs and tables. He will see how far Tara can progress on future days. For now, Mr. Lim is pleased that she is getting the idea of making sets with more than checkers (her prior skills) and some experience with graphs. He is optimistic that she will do more with systematic instruction.

Sam's 5th grade class will be studying the book *Esperanza Rising*. His special education teacher Ms. Angela uses ideas from the Elementary Narrative Text LASSI to get ideas for how to include Sam in the 5th grade lessons on this novel. She writes summaries of each chapter at an early 2nd grade level that Sam will read independently with a peer when the other students are reading their chapters. He also can practice reading these chapters with his mom and data at home. The teacher gets ideas from the LASSI for comprehension questions a peer or tutor can ask and writes these down. Because of Sam's reading skills, she also puts the vocabulary shown in the LASSI on flash cards that she will teach him as sight words. This is another skill he can practice at home.

In his 5th grade class, the language arts teacher will stress selecting details across the chapters to support the literary theme. Ms. Angela gets ideas from the LASSI about how to simplify finding details to support a theme. She will use this when working one-to-one with Sam. She also sets up a graphic organizer on his tablet where he will keep a list of details related to the theme that "Family is Important to Esperanza." He will type one example each day on this graphic organizer after reading the story. When the teacher asks for examples in class, Sam will share one from his tablet. Sam also will summarize what happens in each chapter by typing simple sentences in his tablet using a 1st, 2nd, 3rd format similar to the way this is shown in the LASSI. He can do this while his classmates are doing more complex writing assignments.

Mr. Kerry is the high school language arts teacher for both **Liz** and **Dave**. He plans to adapt the LASSI for each of these students, realizing that Dave will be able to do more than Liz. He has chosen to teach *Marcelo in the Real World* because the general education class also will be using this novel. He has negotiated some inclusive instruction for Liz and Dave using the novel as a springboard. Each Friday, they will join a 10th grade class that Mr. Kerry will co-teach with the general education teacher.

For Liz, Mr. Kerry is going to use the pictures of the main characters, Marcel, Arturo, and Aurora, and teach her to touch the correct picture using time delay. To simplify the task, he enlarges the pictures and puts them on tongue depressors (so they look like fans). He holds up two fans and asks Liz to "Find Marcelo." At no delay, Mr. Kerry holds the correct fan closer to Liz so she gets the right answer without help. Then to fade this prompt, he holds the fans at equal distance. If she touches the correct option without help, he fans her. Liz loves this and

laughs a lot. Later, Mr. Kerry will ask Liz to use the pictures in answering comprehension questions about the characters.

While character identification is Mr. Kerry's starting point for Liz, he wants Dave to be able to identify all the vocabulary words in the LASSI and to match each to the picture. He lays out three pictures and shows Dave the word, "Marcelo." At zero delay, Mr. Kerry points to the correct answer and Dave imitates him. Then to fade this prompt, Mr. Kerry shows the word "Marcelo" and says "Put this with the correct picture." To Dave this is a classification game, something he likes to do, and he picks up on the vocabulary quickly. Similar to Liz, Dave will need this vocabulary to answer future questions. Interestingly, when Mr. Kerry introduces the word Asperger and says it is a form of autism, Dave says "not me" but matches the word and picture. Mr. Kerry wonders if the Marcelo's story might be a way to help Dave gain some self-awareness and vocabulary to talk about his autism. He also realizes there might be the need to do some disability awareness with the general education class also so that discussions will be respectful of Dave, as well as the character Marcelo.

When Mr. Kerry reads his adapted version of *Marcelo in the Real World* to his class including both Dave and Liz, he frequently pauses to have students help read key lines. Liz will participate by hitting a voice output device to say "in the real world." Dave and others will read aloud key lines that Kerry highlights as they read. As Mr. Kerry reads, he also asks simple recall questions that Dave answers using pictures. Liz answers questions about the characters by touching her picture fans. Other students respond in different ways by speaking the answer or using voice output devices.

Mr. Kerry then follows the LASSI closely to do follow-up comprehension work on the plot and using details to make an inference. When doing a story map with the class, he has Liz help him answer the "who" questions with her picture fans. Other students, including, Dave help him fill in the setting, problem, and resolution. As Mr. Kerry fills these in on an interactive white board at the front of the class, the students copy him by filling in their answers on their own graphic organizer. Liz's job is to highlight each answer on her organizer. He hopes that by doing so, she will begin also to understand the setting, problem, and solution.

Mr. Kerry knows that making an inference will be very difficult for Dave who responds better to literal recall questions. He asks the question, "Why might Marcelo agree to work at the law firm?" He reads key facts from the story as shown in the LASSI and models how to make an inference. Then he leads Dave to make the inference about Marcelo. Finally, he asks the question again and has Dave select the picture to show the answer. Mr. Kerry stops there after the first day. As he continues to read future chapters in the days to come, he will begin doing the activities to find details to support the theme and use context clues for new vocabulary.

Having previewed the first chapters, Mr. Kerry has his class ready for Friday's inclusion class. They will bring their adapted chapters and picture responses. Mr. Kerry will repeat similar activities during the co-taught class, having the whole class identify the characters and fill in the story element organizer. He will repeat the inference activity with the entire class and give Dave a chance to answer as well using his pictures.

Summary

The 21st century has created the need for all students to leave school with higher levels of academic proficiency than prior generations have had to achieve. Students with significant

cognitive disabilities also need the opportunity to prepare for a world where they can access and understand text, use mathematical problem solving, and engage in other academic expectations. Teaching state standards to students who participate in alternate assessments means teachers create educational opportunities for students to learn the content of the assigned grade level. While addressing this same content, differential expectations for achievement are set by prioritizing and simplifying the content and using adaptations for students with significant cognitive disabilities to learn the same concepts. The NCSC Wiki offers a wealth of resources to help teachers start creating lesson plans that align with state standards.

Individualization will always be an important component of special education. This manual offered examples of how to take NCSC resources like the MASSIs and LASSIs and make them responsive to individual student's current level of functioning. Through high expectations and individualization, teachers can help more students meet the higher academic outcomes needed to function in today's world.

References

Hudson, M. E., Browder, D. M., & Wood, L. (2013). Review of experimental research on academic learning by students with moderate and severe intellectual disability in general education. *Research and Practice for Persons with Severe Disabilities, 38,* 17-29.

Spooner, F., Knight, V. F., Browder, D. M., & Smith, B. R. (2012). Evidence-based practices for teaching academics to students with severe developmental disabilities. *Remedial and Special Education*, *33*, 374-387.