



# Mississippi Extended Curriculum Frameworks

## **Middle School Version**

Language Arts, Mathematics, & Science  
for  
Students with Significant Cognitive Disabilities

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## Introduction

The Mississippi Extended Curriculum Frameworks (MECF) Middle School Version includes curriculum content that students with significant cognitive disabilities in grades 6 through 8 are expected to access and learn during the course of their instructional programs. The primary purpose of this document is to share the prioritized academic content with teachers, family members, and other educational stakeholders, and to guide the development of high-quality alternate assessments that assess the knowledge and skills representative of these extended standards.

Teachers should use this document to plan instruction and collect student work samples (e.g., documented teacher observations, student work products, recorded media) that can be used to establish a baseline about what students know and can do at the beginning of the school year and to measure progress on the same skills and concepts on the final assessment later in the school year. These student work samples can then be used as part of the submission for the Mississippi Alternate Assessment of Extended Curriculum Frameworks (MAAECF).

Designed specifically for students with significant cognitive disabilities, the MAAECF is a portfolio assessment that is aligned with the Mississippi Extended Curriculum Frameworks for Language Arts (Reading and Writing), Mathematics, and Science. The assessment measures student performance based on alternate achievement standards.

The MAAECF portfolio is a collection of student work from throughout the school year. Teachers select appropriate objectives for assessing students. Students are initially assessed on these objectives through baseline activities developed by the teacher. The teacher then provides instruction on the selected objectives throughout the school year. The teacher assesses these same objectives through final activities that he or she has developed. Student work samples from both the baseline and final activities are submitted in the student's portfolio. This student work is utilized to determine the student's performance level and the level of complexity at which the student is working.

This document provides the curriculum frameworks that bring the prioritized grade-level content standards to life for language arts, mathematics, and science instruction. It is expected that teachers working with students with significant cognitive disabilities will incorporate instruction of all identified competencies at every grade level in the grade span. The alternate assessment tasks will be drawn from clusters and objectives most appropriate for specific individual students and their learning strengths and needs based upon the Data Collection Requirements document that outlines the allowable assessment objectives at each grade level. The learning objectives within each cluster were developed to provide a range of breadth and complexity, so that all students can access and demonstrate learning of each grade-level competency.

There is an overview of the competencies and clusters for each content area at the beginning of each section of this document:

- Language Arts (pages 4-7),
- Mathematics (pages 8-12), and
- Science (pages 13-16).

## LANGUAGE ARTS EXTENDED CURRICULUM FRAMEWORKS

**Reading Strand:** Students use reading skills and strategies to decode and interpret symbols, words, and larger blocks of text. Students demonstrate the ability to use reading to acquire new information, refine perspectives, respond to the needs and demands of society and the workplace, and provide for personal fulfillment.

**Competency 1: Use word recognition and vocabulary (word meaning) skills and strategies to communicate.**

Cluster 1A. Concepts of Print

Cluster 1B. Phonological Awareness

Cluster 1C. Word Identification, Vocabulary, and Decoding Strategies

**Competency 2: Apply strategies and skills to comprehend, respond to, interpret, and evaluate texts.**

Cluster 2A. Using Text Features and Text Structures

Cluster 2B. Reading Comprehension

**Writing Strand:** Students develop a working knowledge of language as well as grammatical structures, diction and usage, punctuation, spelling, layout, and presentation. Students develop the ability to express personal ideas, understandings, desires, and needs in writing.

**Competency 3: Express, communicate, evaluate, or exchange ideas effectively.**

Cluster 3A. The Writing Process

Cluster 3B. Audience and Purpose

**Competency 4: Apply Standard English to communicate.**

Cluster 4A. Writing Mechanics

**MAAECF ELA – Grades 6 - 8**

**Reading Strand**

MECF ELA Competencies	Rating scale item #	MECF Objectives/Rating Scale Items
<b>1. Use word recognition and vocabulary (word meaning) skills and strategies to communicate.</b>	<b>Cluster 1A. Concepts of Print</b>	
	R1A.a	Student locates print and interprets the message/meaning (common symbols and signage, environmental print).
	R1A.b1	Student identifies or locates where to begin reading a variety of texts (e.g., books, stories, articles, letters).
	<b>Cluster 1B. Phonological Awareness</b>	
	R1B.a	Student uses letter-sound relationships to blend phonemes to make words.
	R1B.b	Student deletes phonemes in one-syllable words (e.g., Say crust. Say crust without the c.).
	R1B.c1	Student identifies the number of syllables in words with more than two syllables.
	<b>Cluster 1C. Word Identification, Vocabulary, and Decoding Strategies</b>	
	R1C.a	Student identifies when a word does not make sense in the context used.
	R1C.b	Student uses pictures for context clues.
	R1C.c	Student recognizes and uses affixes, base words, and roots to determine the meaning of words (choose from under-, sub-, ex-, -or/-er, -ist, -ance).
	R1C.c1	Student recognizes regular plural endings (-s, -es, -ies) and applies them to make words.
	R1C.c2	Student recognizes regular past tense endings (-d, -ed) and applies them to make past tense words.
	R1C.d	Student identifies and uses synonyms and antonyms appropriately.
	R1C.e	Student recognizes and reads basic sight words and simple sentences.
R1C.f	Student uses grade-appropriate content vocabulary to sort words by categories, observable features, or function.	
R1C.g	Student identifies homonyms (e.g., to, two, too; no, know) and their correct uses.	
R1C.h	Student interprets intended meanings of new words using semantic context cues, such as restatement, example, or contrast.	
R1C.i	Student interprets and organizes words having shades of meaning.	
<b>2. Apply strategies and skills to comprehend, respond to, interpret, and evaluate texts.</b>	<b>Cluster 2A. Using Text Features and Text Structures</b>	
	R2A.a	Student uses text features for identifying key ideas in text or general meaning (e.g., uses illustrations, titles, subheadings, key word searches, bold print).
	R2A.b	Student uses text features to answer questions after reading informational texts (e.g., schedules, charts, maps, magazine article, news story).
	R2A.c	Student reads a variety of texts and identifies author's purpose.
	R2A.d	Student identifies the conflict and solution in a literary text.
	R2A.e	Student sequences main parts of a story using transition cues and key words.
R2A.f	Student matches cause with effect from literary and informational texts.	

**MAAECF ELA – Grades 6 - 8**

**Reading Strand**

<b>MECF ELA Competencies</b>	<b>Rating scale item #</b>	<b>MECF Objectives/Rating Scale Items</b>
<b>2. Apply strategies and skills to comprehend, respond to, interpret, and evaluate texts.</b> (Continued)	<b>Cluster 2B. Reading Comprehension</b>	
	<b>R2B.a</b>	Student answers appropriately to comprehension questions from both literary and informational text.
	<b>R2B.b</b>	Student predicts logical events from what he/she read or has heard and confirms predictions after reading or listening.
	<b>R2B.c</b>	Student identifies character, plot, and setting of a story.
	<b>R2B.d</b>	Student describes the emotions and motivation of characters in a text.
	<b>R2B.e</b>	Student makes basic inferences from literary and informational text.
	<b>R2B.f</b>	Student identifies the main idea and supporting details within a text.
	<b>R2B.g</b>	Student classifies information from an informational text as fact or opinion.
	<b>R2B.h</b>	Student identifies the figurative and literal meaning of idioms.
	<b>R2B.i</b>	Student interprets print and non-print media to determine the type of propaganda technique being used.

**MAAECF ELA – Grades 6 - 8**

**Writing Strand**

<b>MECF ELA Competencies</b>	<b>Rating scale item #</b>	<b>MECF Objectives/Rating Scale Items</b>
<b>3. Express, communicate, evaluate, or exchange ideas effectively.</b>	<b>Cluster 3A. The Writing Process</b>	
	<b>W3A.a</b>	Student uses grade-appropriate reference materials to use new words in their writing (e.g., thesaurus, glossary – dictionary).
	<b>W3A.b</b>	Student uses words, pictures, signs, objects, or sentences to create a text.
	<b>W3A.c</b>	Student composes a friendly letter.
	<b>W3A.d</b>	Student develops a message or focused text which incorporates a clear beginning, middle, and end and important details.
	<b>W3A.e</b>	Student outlines ideas for composing a text.
	<b>W3A.f</b>	Student revises text using a writer’s checklist.
	<b>Cluster 3B. Audience and Purpose</b>	
	<b>W3B.a</b>	Student uses formal and informal language based on audience and purpose.
	<b>W3B.b</b>	Student gathers and organizes relevant information on a topic to answer specific questions of interest.
	<b>4. Apply Standard English to communicate.</b>	<b>Cluster 4A. Writing Mechanics</b>
<b>W4A.a</b>		Student accurately spells grade-appropriate high-frequency words.
<b>W4A.b</b>		Student applies rule and edits for capitalizations for proper nouns and initial words of a sentence.
<b>W4A.c</b>		Student recognizes contractions in isolation and in connected text.
<b>W4A.d</b>		Student correctly uses and edits for basic punctuation marks: end marks, quotations, abbreviations.
<b>W4A.e</b>		Student understands and uses contractions.
<b>W4A.f</b>		Student composes a variety of simple and compound sentences on a given topic by combining words and phrases.
<b>W4A.g</b>	Student edits a variety of simple and compound sentences on a given topic applying basic capitalization, punctuation, grammar, or spelling rules.	

# MATHEMATICS

## EXTENDED CURRICULUM FRAMEWORKS

**Number and Operations Strand:** Students recognize, represent, understand, and apply mathematical concepts and processes to situations within and outside of school. The definition of Number and Operations includes a range of skills including: rote counting; using pictures, objects, and symbols to denote meaning from numbers and quantities; and demonstrating an understanding of numbers as quantities that can be added, subtracted, multiplied, and divided.

**Competency 1: Understand relationships among numbers and basic operations. Compute fluently and make reasonable estimates.**

Cluster 1A. Counting and Numbers

Cluster 1B. Basic Operations

Cluster 1C. Fractions, Decimals, and Percentages

**Algebra Strand:** Students will use symbolic forms to represent, model, and demonstrate understanding of mathematical situations and apply mathematical concepts and processes to situations within and outside of school. Patterns, Functions, and Algebra include such skills as discrimination, sorting, matching, and sequencing.

**Competency 2: Explain, analyze, and generate patterns, relationships, and functions using numerals, symbols, words, and/or manipulatives.**

Cluster 2A. Pattern Analysis

Cluster 2B. Functions and Relationships

**Geometry Strand:** Students will use representation, visualization, spatial reasoning, and symmetry to solve problems. Geometry and Spatial Relations includes demonstrated understanding of size, shape, and location, applied for a variety of purposes and to a variety of situations.

**Competency 3: Recognize, describe, and compare basic shapes and other geometric and spatial details.**

Cluster 3A. Shape Recognition

Cluster 3B. Relational Concepts

Cluster 3C. Understanding Lines and Angles



**Measurement Strand:** Students use a variety of tools and techniques of measurement to problem solve. Measurement includes a demonstrated understanding of such concepts as time, distance, area and volume, applied for a variety of purposes and to a variety of situations. At a lower level, measurement is being broadly defined to include the concept of more than, less than, and other comparatives.

**Competency 4: Understand and use different forms and units of measurement in a variety of contexts.**

Cluster 4A. Time

Cluster 4B. Measuring Objects and Using Information

**Data Analysis and Probability Strand:** Students will interpret data and make predictions using methods of exploratory data analysis and basic notions of probability. Data Analysis and Probability includes categorization, making choices, and logical reasoning about events or situations.

**Competency 5: Collect and report data. Read and understand basic charts, graphs, and tables.**

Cluster 5A. Collecting and Reporting Data

**MAAECF Mathematics – Grades 6 – 8**

**Numbers and Operations Strand**

<b>MECF Mathematics Competencies</b>	<b>Rating scale item #</b>	<b>MECF Objectives/Rating Scale Items</b>
<b>1. Understand relationships among numbers and basic operations. Compute fluently and make reasonable estimates.</b>	<b>Cluster 1A. Counting and Numbers</b>	
	<b>MN1A.a</b>	Student identifies place value of ones, tens, and hundreds.
	<b>MN1A.b</b>	Student identifies place value of decimals to the hundredths.
	<b>MN1A.c</b>	Student lists three rational numbers in proper numerical order.
	<b>MN1A.d</b>	Student compares and orders rational numbers using symbols ( $>$ , $<$ , $=$ ).
	<b>Cluster 1B. Basic Operations</b>	
	<b>MN1B.a</b>	Student adds double-digit numbers with or without regrouping.
	<b>MN1B.a1</b>	Student uses a calculator to solve addition problems involving two or three double-digit numbers and regrouping.
	<b>MN1B.b</b>	Student subtracts double-digit numbers with or without regrouping.
	<b>MN1B.b1</b>	Student uses a calculator to subtract double-digit numbers with or without regrouping.
	<b>MN1B.b2</b>	Student uses a calculator to subtract double- and triple-digit numbers and uses a calculator to justify the answer.
	<b>MN1B.c</b>	Student applies the basic operations of addition and subtraction in problem solving (e.g., word problems; authentic tasks).
	<b>MN1B.d</b>	Student solves problems involving multiplication or division.
	<b>MN1B.d1</b>	Student solves multiplication and division word problems using a calculator.
	<b>MN1B.d2</b>	Student describes or models (using objects or pictures) the multiplication/division inverse relationship.
	<b>MN1B.e</b>	Student completes problem-solving activities in real-life situations using (+, -) or ( $\times$ , $\div$ ).
	<b>Cluster 1C. Fractions, Decimals, and Percentages</b>	
	<b>MN1C.a</b>	Student identifies and models improper and mixed fractions.
	<b>MN1C.a1</b>	Student compares fractions with denominators 2–10 using models, pictures, <u>or</u> fraction numerals.
	<b>MN1C.a2</b>	Student orders fractions with denominators 2–10 using models, pictures, <u>or</u> fraction numerals.
	<b>MN1C.b</b>	Student identifies and models percents appropriately.
<b>MN1C.c</b>	Student identifies equivalent fractions and percents.	
<b>MN1C.d</b>	Student uses money appropriately in real-life activities (making change, determining sales tax, determining unit price).	

**MAAECF Mathematics – Grades 6 – 8**

**Algebra Strand**

<b>MECF Mathematics Competencies</b>	<b>Rating scale item #</b>	<b>MECF Objectives/Rating Scale Items</b>
<b>2. Explain, analyze, and generate patterns, relationships, and functions using numerals, symbols, words, and/or manipulatives.</b>	<b>Cluster 2A. Pattern Analysis</b>	
	<b>MA2A.a</b>	Student creates, describes, and extends a growing pattern.
	<b>MA2A.b</b>	Student identifies and extends numeric patterns when presented with a task.
	<b>MA2A.c</b>	Student completes input/output function table when given the rule.
	<b>Cluster 2B. Functions and Relationships</b>	
	<b>MA2B.a</b>	Student completes and creates number sentences to demonstrate understanding of multiplication.
	<b>MA2B.b</b>	Student completes and creates number sentences to demonstrate understanding of division.
	<b>MA2B.c</b>	Student applies the commutative and associative properties of addition and multiplication to solve problems.
	<b>MA2B.c1</b>	Student describes or models the commutative property of addition using objects, pictures, numbers, or letters.
	<b>MA2B.c2</b>	Student describes or models the associative property of addition using objects, pictures, numbers, or letters.
	<b>MA2B.c3</b>	Student applies the commutative and associative properties of addition to solve problems.
	<b>MA2B.c4</b>	Student describes or models the commutative property of multiplication using objects, pictures, numbers, or letters.
	<b>MA2B.c5</b>	Student describes or models the associative property of multiplication using objects, pictures, numbers, or letters.
	<b>MA2B.c6</b>	Student applies the commutative and associative properties of multiplication to solve problems.
<b>Geometry Strand</b>		
<b>3. Recognize, describe, and compare basic shapes and other geometric and spatial details.</b>	<b>Cluster 3A. Shape Recognition</b>	
	<b>MG3A.a</b>	Student identifies 2-dimensional and 3-dimensional objects/shapes.
	<b>MG3A.a1</b>	Student uses manipulatives or pictures to compose 2-dimensional or 3-dimensional shapes.
	<b>MG3A.a2</b>	Student recognizes and identifies at least 5 of the following polygons (rhombus, square, triangle, trapezoid, rectangle, pentagon, hexagon, and/or octagon) according to number of sides and/or number of angles.
	<b>MG3A.b</b>	Student identifies and explains how shapes are congruent or symmetrical.
	<b>Cluster 3B. Relational Concepts</b>	
	<b>MG3B.a</b>	Student identifies and locates elements of a coordinate plane.
	<b>MG3B.b</b>	Student identifies circumference, diameter, and radius of a circle.
	<b>Cluster 3C. Understanding Lines and Angles</b>	
	<b>MG3C.a</b>	Student identifies angles (right, acute, and obtuse) in everyday objects.
	<b>MG3C.a1</b>	Student uses a protractor to measure angles from 0 to 180 degrees.
	<b>MG3C.b</b>	Student identifies perpendicular, parallel and intersecting lines in everyday objects (e.g., maps, patterns in clothing, furniture).

**MAAECF Mathematics – Grades 6 – 8**

**Measurement Strand**

<b>MECF Mathematics Competencies</b>	<b>Rating scale item #</b>	<b>MECF Objectives/Rating Scale Items</b>
<b>4. Understand and use different forms and units of measurement in a variety of contexts.</b>	<b>Cluster 4A. Time</b>	
	<b>MM4A.a</b>	Student applies time-related terms and concepts (responds to questions, estimates) in relation to real-life situations and problem solving.
	<b>Cluster 4B. Measuring Objects and Using Information</b>	
	<b>MM4B.a</b>	Student measures an object to the nearest inch, foot, yard, or centimeter using the appropriate tool.
	<b>MM4B.b</b>	Student reads a thermometer and uses the information to make practical decisions.
	<b>MM4B.c</b>	Student uses appropriate tools to compare lengths, weights, or temperature, of common objects and materials.
	<b>MM4B.d</b>	Student identifies basic units of measurement in customary and metric systems.
	<b>MM4B.e</b>	Student measures fluids using customary and metric system units of measure.
	<b>MM4B.e1</b>	Student compares the capacity of various containers in standard units (e.g., ounce, cup, pint, quart, gallon, and/or liter, etc.).
<b>MM4B.e2</b>	Student sorts and classifies containers based on capacity.	
<b>Data Analysis and Probability Strand</b>		
<b>5. Collect and report data. Read and understand basic charts, graphs, and tables.</b>	<b>Cluster 5A. Collecting and Reporting Data</b>	
	<b>MD5A.a</b>	Student constructs and labels a pie graph from data on a table and chart.
	<b>MD5A.b</b>	Student identifies the mean, median, mode, and range of a set of data.
	<b>MD5A.c</b>	Student predicts and models the number of different combinations of 2 or more objects.
	<b>MD5A.d</b>	Student constructs, interprets, and explains data using a graph, table, or chart.
	<b>MD5A.e</b>	Student uses basic probability concepts to make predictions about an event.
<b>MD5A.e1</b>	Student identifies whether an outcome of an event is “more likely” or “less likely” to occur.	

# SCIENCE

## EXTENDED CURRICULUM FRAMEWORKS

### **Inquiry Strand**

**Competency 1: Use tools and instruments to plan, conduct, and evaluate simple science experiments.**

Cluster 1A. Conducts Experiment

Cluster 1B. Interprets Data

Cluster 1C. Communicates Findings

### **Earth and Space Systems Strand**

**Competency 2: Identify and describe features of the Earth, the Earth's structure, and other objects in space.**

Cluster 2A. Planets and the Solar System

Cluster 2B. Earth's Structure

**Competency 3: Identify and describe living and nonliving factors that affect the environment.**

Cluster 3A. Factors Affecting the Environment

### **Life Science Strand**

**Competency 4: Identify and describe animals and plants and their environments.**

Cluster 4A. Plants and Animals

**Competency 5: Identify and describe structures of living systems and their functions.**

Cluster 5A. Structures of Living Systems

### **Physical Sciences Strand**

**Competency 6: Demonstrate an understanding of basic concepts regarding matter, energy, motion.**

Cluster 6A. Matter and Changes

Cluster 6B. Force and Motion

Cluster 6C. Forms of Energy

**MAAECF Science – Grades 6 - 8**

**Inquiry Strand**

<b>MECF Science Competencies</b>	<b>Rating scale item #</b>	<b>MECF Objectives/Rating Scale Items</b>
<b>1. Use tools and instruments to plan, conduct, and evaluate simple science experiments.</b>	<b>Cluster 1A. Conducts Experiment</b>	
	<b>SI1A.a</b>	Student recognizes safety rules for science experiment and/or laboratory (e.g., wear goggles, wash hands after handling materials, do not taste unknown materials).
	<b>SI1A.b</b>	Student chooses appropriate tools for completing a task (e.g., simple measuring devices metric and standard units, balance scale, spring scale, dissecting microscope, telescope).
	<b>SI1A.c</b>	Given a testable question, student chooses a plan or plans steps to investigate the question.
	<b>SI1A.d</b>	Student conducts a simple experiment to address a question or problem.
	<b>Cluster 1B. Interprets Data</b>	
	<b>SI1B.a</b>	Student identifies observable features or traits (e.g., shape, texture, size, color, number) of objects and organisms.
	<b>SI1B.a1</b>	Student sorts or sequences objects and organisms based on given criteria.
	<b>SI1B.b</b>	Student predicts outcomes based on observations and previous experience.
	<b>SI1B.c</b>	Student interprets data collected as part of an experiment (e.g., makes an accurate statement based on data; identifies a trend or result).
	<b>Cluster 1C. Communicates Findings</b>	
	<b>SI1C.a</b>	Student communicates understanding of concepts or results by choosing correct or appropriate outcome/summary.
	<b>SI1C.b</b>	Student develops graphs, charts, or other visual representations to communicate the results on an investigation.
	<b>Earth &amp; Space Science Strand</b>	
<b>2. Identify and describe features of the Earth and other objects in space.</b>	<b>Cluster 2A. Planets and the Solar System</b>	
	<b>SE2A.a</b>	Student identifies features of the solar system, including the Earth, sun, other planets, and asteroid belt.
	<b>SE2A.b</b>	Student demonstrates Earth’s orbit around the Sun and the Moon’s orbit around the Earth.
	<b>SE2A.c</b>	Student distinguishes between heavenly bodies that radiate light (sun, stars) and those that reflect light (moon, planets).
	<b>SE2A.d</b>	Student identifies objects seen in the day and nighttime skies, including different phases of the moon.
	<b>Cluster 2B. Earth’s Structure</b>	
	<b>SE2B.a</b>	Student classifies rocks, gems, and minerals according to their characteristics (color, luster, cleavage, streak, hardness).
	<b>SE2B.b</b>	Student identifies and describes how erosion affects the earth.
	<b>SE2B.c</b>	Student identifies the three major layers of the earth (crust, mantle, core) and the atmosphere using a model or diagram.
	<b>SE2B.d</b>	Student examines fossils and identifies whether they are from plants or animals.
	<b>SE2B.e</b>	Student observes and describes teacher demonstration of how rock types are formed (e.g., heat, pressure, or both heat and pressure to form new rocks).
	<b>SE2B.f</b>	Student classifies resources as renewable or non-renewable, including energy sources.

**MAAECF Science – Grades 6 - 8**

**Earth & Space Science Strand**

<b>MECF Science Competencies</b>	<b>Rating scale item #</b>	<b>MECF Objectives/Rating Scale Items</b>
<b>3. Identify and describe living and nonliving factors that affect the environment.</b>	<b>Cluster 3A. Factors that Affect the Environment</b>	
	<b>SE3A.a</b>	Student uses visuals to identify tornados and hurricanes and describe their effects.
	<b>SE3A.b</b>	Student observes teacher designed water cycle activity and describes or orders pictures showing what happened.
	<b>SE3A.c</b>	Student identifies ways in which humans affect living and nonliving things in the environment.
	<b>SE3A.d</b>	Student identifies reasons that animals or plants might become threatened, endangered, or extinct (e.g., loss of habitat, over hunting or fishing, pollution, climate change, over populating).
<b>Life Science Strand</b>		
<b>4. Identify and describe animals and plants and their environments.</b>	<b>Cluster 4A. Plants and Animals: Living Organisms and Adaptation</b>	
	<b>SL4A.a</b>	Student recognizes that the Sun is the major source of the Earth's energy.
	<b>SL4A.b</b>	Student recognizes that all living things are made up of cells.
	<b>SL4A.c</b>	Student identifies the parts of a plant (stem, root, leaves, seeds, flowers) and describes their functions.
	<b>SL4A.d</b>	Student compares and contrasts characteristics of living organisms (e.g., compare parts of plant cells and animal cells).
	<b>SL4A.e</b>	Student explains adaptations (changes that resulted over time) of animals and plants that allow them to survive in their habitats.
	<b>SL4A.f</b>	Student identifies how plants and animals meet their basic needs for water, food, air, and shelter.
	<b>SL4A.g</b>	Student describes characteristics of different aquatic and land ecosystems.
	<b>SL4A.h</b>	Student identifies what plants need in order to make their own food (photosynthesis).
	<b>SL4A.i</b>	Student develops a food web using pictures or other media.
	<b>SL4A.j</b>	Student uses a food web model to identify organisms and their roles (producers make food and consumers eat food, and decomposers break down matter).
	<b>SL4A.k</b>	Student recognizes what carnivores, herbivores, and omnivores eat.
<b>SL4A.l</b>	Student classifies animals using given criteria (e.g., carnivores, herbivores, and omnivores; cold- or warm-blooded; vertebrate-invertebrate).	
<b>5. Identify and describe structures of living systems and their functions.</b>	<b>Cluster 5A. Structures of Living Systems</b>	
	<b>SL5A.a</b>	Student matches the body systems (skeletal, respiratory, circulatory, muscular, nervous, and skin) with various functions within the body.
	<b>SL5A.a1</b>	Student identifies body systems that work together or describes the process for how body systems work together to perform a given action.
	<b>SL5A.b</b>	Student identifies or matches organs (e.g., heart, lungs, brain, spinal cord, skin) with appropriate body system.
	<b>SL5A.c</b>	Student identifies habits that promote good health (e.g., eating healthy foods, exercise, non use of tobacco, drugs, or alcohol).
<b>SL5A.d</b>	Student recognizes different diseases or illnesses associated with various body systems (e.g., heart disease, lung cancer, asthma, diabetes).	

**MAAECF Science – Grades 6 - 8**

**Physical Science Strand**

<b>MECF Science Competencies</b>	<b>Rating scale item #</b>	<b>MECF Objectives/Rating Scale Items</b>
<b>6. Demonstrate an understanding of basic concepts regarding matter, motion, and energy.</b>	<b>Cluster 6A. Matter and Changes</b>	
	<b>SP6A.a</b>	Student classifies objects and materials as gases, solids, or liquids.
	<b>SP6A.b</b>	Student identifies activities that involve physical or chemical changes in substances (e.g., physical: squashing, cutting, sharpening, stretching, evaporating; chemical: baking, cooking, burning, rusting).
	<b>SP6A.b1</b>	Student recognizes that the total mass does not change during physical and/or chemical changes.
	<b>SP6A.c</b>	Students identifies the effects of stirring, shaking, or warming up objects in order to dissolve them in water (e.g., will it dissolve faster if I shake it?).
	<b>Cluster 6B. Force and Motion</b>	
	<b>SP6B.a</b>	Student follows simple directions to make and use a simple machine (e.g., pulley, lever, wedge, inclined plane).
	<b>SP6B.b</b>	Student explores, measures, and records the motion of an object (e.g., how amount of force can affect distance or speed of object).
	<b>SP6B.c</b>	Student explores and identifies how different forces affect objects (e.g., equal and opposite forces cause no change in motion; unbalanced forces cause change).
	<b>SP6B.d</b>	Student describes the effect of friction or resistance on an object's motion.
	<b>Cluster 6C. Forms of Energy</b>	
	<b>SP6C.a</b>	Student identifies objects that will be attracted by a magnet, including electromagnets.
	<b>SP6C.b</b>	Student investigates different forms of energy (heat, sound, light, electricity) and describes what happened.
	<b>SP6C.b1</b>	Student identifies properties of light (i.e., reflection, refraction, and absorption).



## References

Individuals with Disabilities Education Act, 20 U.S.C. § 1400 *et seq.*, as amended by the Individuals with Disabilities Education Act Amendments of 1997, Pub. L. No. 105-17, 111 Stat. 37 (1997).

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McDonnell, L. M, McLaughlin, M. J., & Morison, P. (Eds.). (1997). *Educating one and all: Students with disabilities and standards-based reform*. Washington, DC: National Academy Press.

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Thompson, S.J., Johnstone, C.J., & Thurlow, M.L. (2002). *Universal design applied to large-scale assessments (Synthesis Report 44)*. Minneapolis, MN: University of Minnesota, National Center for Educational Outcomes.

Webb, N. L. (1997). *Criteria for alignment of expectations and assessments in mathematics and science education* (NISE Research Monograph No. 6). Madison: University of Wisconsin-Madison, National Institute for Science Education.

### Additional Resources for Alternate Assessments & Making Materials More Accessible

DC CAS Alt/District of Columbia Alternate Assessment. [Online] Available: <http://www.ihdi.uky.edu/ilssa/dc-cas-alt/> or <http://www.ihdi.uky.edu/ilssa/dc-cas-alt/teacherResources/Default.asp> (*online alternate assessment resources for teachers and parents*)

Denham, A. (2004). Pathways to Learning for Students with Cognitive Challenges: Reading, Writing, and Presenting. Human Development Institute. University of Kentucky. [Online] Available: <http://www.ihdi.uky.edu/IEI/Files/Pathways%20to%20learning%20document.pdf> (*ideas for expressive and receptive adaptations to accommodate diverse learning styles*)

Fichleay, K. and Dubuske, S. (2003). Adapting Books Assistive Technology Continuum. Boston Public Schools Access Technology Center. [Online] Available: <http://www.boston.k12.ma.us/teach/technology/emmanuel/ATAdaptBks.pdf> (*ideas for adapting text to accommodate diverse learning styles*)

GA Alternate Assessment. [Online] Available: <http://www.georgiastandards.org/impairment.aspx> - (*Teacher Resource Guide, sample modified texts for ELA, sample assessment activities for mathematics, ELA, science, and social studies*)

Hess, K. (2008). "Tools & Strategies for Developing and Using Learning Progressions." Presentation at the FAST-SCASS meeting, Atlanta, GA 2/6/08 [online] PowerPoint and article available: [www.nciea.org](http://www.nciea.org)

Hess, K. (2008). "Teaching and Assessing Understanding of Text Structures across Grades." [online] available: [www.nciea.org](http://www.nciea.org)

MA Alternate Assessment Teacher Resource Guide. [Online] Available: <http://www.doe.mass.edu/mcas/alt/resources.html> (*online alternate assessment resources for teachers*)

NJ Alternate Assessment/APA. [Online] Available: <http://pem.ncspearson.com/nj/apa> (*online alternate assessment resources for teachers*)

Pro Teacher website for Hands-on Science Activities. [Online] Available: <http://www.proteacher.com/cgi-bin/outside.cgi?id=274&external=http://www.energyquest.ca.gov/projects/index.html&original=http://www.proteacher.com/110053.shtml&title=Energy%20Science%20Projects> (*online resources for teaching science*)

*Science Saurus: A Student Handbook* – teacher or student resource for looking up science concepts, examples, and diagrams. Great Source Education Group, Houghton Mifflin Company ISBN# 0-669-48192-0 6/8




The Internet Picture Dictionary. (2003). [Online] Available: [www.pdictionary.com](http://www.pdictionary.com) (*picture dictionary available in several languages which can be used to make worksheets, games, etc.*)

Texas School for the Blind. (undated). Functional Academics and Functional Skills Department. [Online] Available: <http://www.tsbvi.edu> (*ideas and materials for adapting academic content for students with visual impairments*)

Utah State University. (2003). National Library of Virtual Manipulatives [Online] Available: [http://www.matti.usu.edu/nlvm/nav/topic\\_t\\_2.html](http://www.matti.usu.edu/nlvm/nav/topic_t_2.html) (*virtual manipulatives that can be arranged online to solve or illustrate math problems – includes measurement, geometry, and algebra*)

## What do we mean by “reading” for the MS Alternate Assessment?

Students who have significant cognitive disabilities may be accessing and responding to information in a different way than typical students. For students taking the alternate assessment, “reading” may be defined as follows:

Student listens <i>and follows</i> along with text	Romeo and Juliet fell in love.	<a href="http://bookbuilder.cast.org/">http://bookbuilder.cast.org/</a>
Student listens <i>and follows</i> along with pictures	 Romeo and Juliet danced and talked.	<a href="http://www.ric.edu/sherlockcenter/dsi/romeo.pdf">http://www.ric.edu/sherlockcenter/dsi/romeo.pdf</a>
Student listens <i>and follows</i> along with objects	Romeo and Juliet fell in love. 	Denham, A. (2004). Pathways to Learning for Students with Cognitive Challenges: Reading, Writing and Presenting. Interdisciplinary Human Development Institute, University of Kentucky. [Online] Available: <a href="http://www.ihdi.uky.edu/IEI/">http://www.ihdi.uky.edu/IEI/</a>
Student listens <i>and follows</i> along with tactile cues	 Romeo and Juliet fell in love.	<a href="http://www.tsbvi.edu/Education/vmi/images/love.jpg">http://www.tsbvi.edu/Education/vmi/images/love.jpg</a>

The grade-appropriate texts may be adapted by:

- Condensing information
- Shortening the text
- Presenting a synopsis of the text
- Highlighting important information
- Pairing text with pictures, objects, or tactile cues
  - When pairing text with pictures it may be a one-to-one correspondence (one picture for each word) or it may be one picture that summarizes the text
- Translating the text to Braille
- Chunking relevant information
- Creating a story bag that corresponds to the text (using representative objects for main characters/ideas from the text)
- Rewriting using different vocabulary

## What do we mean by “writing” for MS Alternate Assessment?

Students who have significant cognitive disabilities may be accessing and responding to information in a different way than typical students. For students taking the alternate assessment, “writing” may be defined as the ordering of information and representing a complete thought. For some students, representing a complete thought is done on a word-by-word basis; for other students, it may be represented more holistically by an object or picture. Students may write by:

- Using stamps
- Using pictures
- Using objects
- Using written words
- Using Braille
- Using tactile cues
- Using a voice output device or other augmentative communication devices (e.g., to complete a cloze sentence, choose main ideas and/or supporting details to write a text)
- Ordering sentences (words, objects, pictures, tactile cues) into an essay
- Completing cloze sentences
- Using a computer with writing software (speech to text, picture writing, etc.)
- Using a pen, pencil, or other writing utensil