



# Mississippi Extended Curriculum Frameworks

## **Elementary School Version**

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

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## Introduction

The Mississippi Extended Curriculum Frameworks (MECF) Elementary School Version includes curriculum content that students with significant cognitive disabilities in grades 3 through 5 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 13-17).

# 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 3 – 5**

**Reading Strand**

<b>MECF ELA Competencies</b>	<b>Rating scale item #</b>	<b>MECF Objectives/Rating Scale Items</b>
<b>1. Use word recognition and vocabulary (word meaning) skills and strategies to communicate.</b>	<b>Cluster 1A. Concepts of Print</b>	
	<b>R1A.a</b>	Student locates print and interprets the message/meaning (common symbols and signage, environmental print).
	<b>R1A.b</b>	Student follows text and demonstrates directionality: left-to-right and top-to-bottom; 1-1 matching of words spoken to words in print.
	<b>R1A.b1</b>	Student locates where to begin reading a text.
	<b>R 1A.c</b>	Student recognizes or locates the key parts of a book: front and back, print, illustrations, title, and author.
	<b>R 1A.d</b>	Student recognizes that sentences in print are made of separate words.
	<b>R 1A.e</b>	Student distinguishes between letters, words, and sentences.
	<b>R1A.e1</b>	Student identifies dialogue in text.
	<b>R1A.e2</b>	Student distinguishes dialogue from text.
	<b>R 1A.f</b>	Student reads high frequency words (e.g., familiar names, personal interests).
	<b>Cluster 1B. Phonological Awareness</b>	
	<b>R1B.a</b>	Student matches letters and sounds.
	<b>R1B.b</b>	Student uses letter-sound relationships to blend phonemes to make words.
	<b>R1B.c</b>	Student recognizes pairs of rhyming words.
	<b>R1B.d</b>	Student recognizes the number of syllables in one- and two-syllable words.
	<b>Cluster 1C. Word Identification, Vocabulary, and Decoding Strategies</b>	
	<b>R1C.a</b>	Student demonstrates comprehension of safety words, symbols, or pictures.
	<b>R1C.b</b>	Student demonstrates an understanding of positional words.
	<b>R1C.c</b>	Student uses pictures for context clues.
	<b>R1C.d</b>	Student demonstrates comprehension of words that depict emotions.
	<b>R1C.e</b>	Student identifies roots and affixes (choose 2: un-, re-, -less, -ful).
	<b>R1C.f</b>	Student uses roots and affixes to decode and understand words (choose 2: un-, re-, -less, -ful).
	<b>R1C.g</b>	Student classifies words as nouns or verbs.
	<b>R1C.h</b>	Student reads simple sentences fluently.
	<b>R1C.i</b>	Student recognizes words that are synonyms and antonyms.
	<b>R1C.j</b>	Student matches print words to objects.
<b>R1C.k</b>	Student recognizes and reads basic sight words from a recommended word list.	
<b>R1C.l</b>	Student identifies when a word does not make sense in the context used.	
<b>R1C.m</b>	Student determines the correct meaning of a multiple meaning word in a given context.	

**MAAECF ELA – Grades 3 – 5**

**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>	<b>Cluster 2A. Using Text Features and Text Structures</b>	
	<b>R2A.a</b>	Student locates or names text features in different texts (e.g., caption, illustrations, key on map, bold text, diagram, glossary).
	<b>R2A.b</b>	Student makes basic inferences from a text using text features (e.g., pictures, illustrations, captions, bar graph).
	<b>R2A.c</b>	Student uses the information found in the text features to answer questions (e.g., caption, illustrations, key on map, bold text, diagram).
	<b>R2A.d</b>	Student identifies correct sequence within a given text (story/narrative text and procedural texts, such as directions).
	<b>R2A.e</b>	Student matches cause with effect from a text, when cause or effect is given.
	<b>Cluster 2B. Reading Comprehension</b>	
	<b>R2B.a</b>	Student matches words or symbols to show understanding of common school and community places or events.
	<b>R2B.b</b>	Student describes or retells story events when presented with a prompt.
	<b>R2B.c</b>	Student composes simple statements on a topic learned about by reading or listening to text read aloud.
	<b>R2B.d</b>	Student identifies main idea from what he/she reads or hears read aloud.
	<b>R2B.e</b>	Student answers who, what, and where questions about a text read or heard read aloud.
	<b>R2B.f</b>	Student identifies literary elements (character, setting, problem, solution) after reading a story or hearing it read aloud.
	<b>R2B.g</b>	Student classifies information from an informational text as fact or opinion.
	<b>R2B.h</b>	Student paraphrases a message read or from text read aloud.
<b>R2B.i1</b>	Student reads a variety of texts and identifies author's purpose (e.g., inform, entertain, persuade).	

**MAAECF ELA – Grades 3 – 5**

**Writing Strand**

MECF ELA Competencies	Rating scale item #	MECF Objectives/Rating Scale Items
<b>3. Express, communicate, evaluate, or exchange ideas effectively.</b>	<b>Cluster 3A. The Writing Process</b>	
	<b>W3A.a</b>	Student produces purposeful drawing.
	<b>W3A.b</b>	Student completes a graphic organizer to plan and write on a topic.
	<b>W3A.c</b>	Student completes a graphic organizer to plan and write a story.
	<b>W3A.d</b>	Student generates words, simple sentences, pictures, signs, or objects to convey a message or idea.
	<b>Cluster 3B. Audience and Purpose</b>	
	<b>W3B.a</b>	Student describes a personal object or retells a personal event when presented with a prompt.
	<b>W3B.b</b>	Student writes notes to peers, parents, and others for a variety of purposes.
	<b>W3B.c</b>	Student selects appropriate words or phrases to add details to a report or story.
	<b>W3B.d</b>	Student identifies appropriate word choices for particular audiences.
<b>W3B.e</b>	Student identifies possible purpose for reading or writing.	
<b>4. Apply Standard English to communicate.</b>	<b>Cluster 4A. Writing Mechanics</b>	
	<b>W4A.a</b>	Student demonstrates understanding of capital letters by matching upper and lower case letters.
	<b>W4A.b</b>	Student composes simple complete sentences.
	<b>W4A.c</b>	Student differentiates punctuation marks (period, question mark, exclamation point) from other letters and symbols.
	<b>W4A.d</b>	Student uses common spelling patterns to make and spell new words (-at, cat, bat).
	<b>W4A.e</b>	Student accurately spells words from a recommended word list.
	<b>W4A.f</b>	Student uses capital letters correctly for people’s names and at the beginning of sentences, days, and months.
	<b>W4A.g</b>	Student recognizes punctuation marks by name (period, question mark, exclamation point); and correctly matches punctuation marks with their meaning/use.
<b>W4A.h</b>	Student correctly uses punctuation marks (period, question mark, exclamation).	

# 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 Facts
- Cluster 1C. Money

**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 Recognition

**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 4C. 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. Calendar and Time

Cluster 4B. Weight and Length

**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 3 – 5**

**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 rote counts from memory (at minimum) from 0 to 10.	
	<b>MN1A.b</b>	Student identifies numerals (at minimum) 0 to 10.	
	<b>MN1A.c</b>	Student lists three whole numbers in proper numerical order.	
	<b>MN1A.d</b>	Student determines the number of objects in a set.	
	<b>MN1A.e</b>	Student demonstrates 1-to-1 correspondence in a variety of contexts.	
	<b>MN1A.f</b>	Student determines “first” through “tenth” (ordinal numbers), “next” and “last” positions.	
	<b>MN1A.g</b>	Student recognizes place value of ones, tens, and hundreds places.	
	<b>MN1A.g1</b>	Student identifies place value of ones and tens.	
	<b>MN1A.h</b>	Student composes and decomposes 2- and 3-digit whole numbers using standard expanded form, words, or models.	
	<b>MN1A.i</b>	Student rounds two- and three-digit whole numbers to the nearest hundred.	
	<b>MN1A.j</b>	Student compares whole numbers using terms and symbols (>, <, =).	
		<b>Cluster 1B. Basic Facts</b>	
	<b>MN1B.a</b>	Student adds single-digit numbers.	
	<b>MN1B.a1</b>	Student matches sets of 2–4 objects and/or pictures to sets of objects with the equivalent number.	
	<b>MN1B.a2</b>	Student will create a fact family with sums equal to or less than 10 using numbers, objects, and/or pictures.	
	<b>MN1B.b</b>	Student subtracts single-digit numbers.	
	<b>MN1B.b1</b>	Student subtracts single-digit numbers from double-digit numbers using a calculator.	
	<b>MN1B.b2</b>	Student subtracts single-digit numbers from double-digit numbers without the use of a calculator.	
	<b>MN1B.c</b>	Student adds double-digit numbers.	
	<b>MN1B.c1</b>	Student adds double-digit numbers using a calculator.	
	<b>MN1B.c2</b>	Student adds three or more numbers using a calculator.	
	<b>MN1B.d</b>	Student subtracts double-digit numbers and justifies answer.	
	<b>MN1B.e</b>	Student estimates sums and differences of whole numbers.	
	<b>MN1B.e1</b>	Student determines whether addition or subtraction has taken place by indicating when an object has been added to or removed from a set of 2–5 objects.	
	<b>MN1B.f</b>	Student identifies that 0.50 is equivalent to $\frac{1}{2}$ .	

**MAAECF Mathematics – Grades 3 – 5**

**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> (Continued)	<b>MN1B.f1</b>	Student distinguishes between whole objects and their parts using models or pictures.
	<b>MN1B.f2</b>	Student identifies or demonstrates that two-halves, three-thirds, and four-fourths equal one whole.
	<b>MN1B.g</b>	Student identifies and models representations of fractions with denominators of 2, 3, 4, 5, 6, 8, and 10.
	<b>MN1B.h</b>	Student models multiplication using arrays, equal-sized groups, area models, or equal-sized moves on the number line, etc.
	<b>MN1B.h1</b>	Student multiplies single- and double-digit numbers using a calculator.
	<b>MN1B.i</b>	Student uses symbols (+, =) and vocabulary (add, plus, sum, total) of addition and symbols (–, =) and vocabulary (subtract, minus, difference) of subtraction.
	<b>MN1B.i1</b>	Student locates and uses the following symbols accurately on a calculator: +, –, X, <b><u>and</u></b> =.
	<b>Cluster 1C. Money</b>	
	<b>MN1C.a</b>	Student identifies different coins and currency by name.
	<b>MN1C.b</b>	Student identifies value of coins and currency.
	<b>MN1C.c</b>	Student adds money amounts up to \$5.00.
	<b>MN1C.c1</b>	Student adds the value of 2 or more coins up to \$1.
<b>Algebra Strand</b>		
<b>2. Explain, analyze, and generate patterns, relationships, and functions using numerals, symbols, words, and/or manipulatives.</b>	<b>Cluster 2A. Pattern Recognition</b>	
	<b>MA2A.a</b>	Student matches a pattern of objects or pictures.
	<b>MA2A.b</b>	Student sorts objects into categories and identifies the rule for sorting (e.g., same color, same shape).
	<b>MA2A.c</b>	Student creates a variety of repeating patterns (e.g., auditory: tap, clap; tactile or visual: XOXO; AABBAABB; numeric: 1, 2, 1, 2).
	<b>MA2A.d</b>	Student uses number patterns to skip count by 2's, 3's, 5's, and 10's.
	<b>MA2A.e</b>	Student models, identifies, and demonstrates inverse relationships between addition and subtraction.
<b>MA2A.f</b>	Student extends patterns of numbers or symbols and states the rule.	

**MAAECF Mathematics – Grades 3 – 5**

**Geometry Strand**

<b>MECF Mathematics Competencies</b>	<b>Rating scale item #</b>	<b>MECF Objectives/Rating Scale Items</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 basic 2-dimensional shapes (square, triangle, rectangle, and circle).
	<b>MG3A.a1</b>	Student matches 3-dimensional figures to 2-dimensional shapes or common objects.
	<b>MG3A.b</b>	Student sorts basic 2-dimensional shapes into groups (circle, triangle, square, rectangle, rhombus, and trapezoid) by number of sides.
	<b>MG3A.c</b>	Student sorts 2-dimensional shapes into groups and describes the characteristics.
	<b>Cluster 3B. Relational Concepts</b>	
	<b>MG3B.a</b>	Student uses positional words (in, above, below, over, under, and beside) to describe the location of an object.
	<b>MG3B.b</b>	Student uses positional words (in, above, below, over, under, beside, left, and right) to describe the location of an object on a simple map.
	<b>Cluster 3C. Understanding Lines and Angles</b>	
	<b>MG3C.a</b>	Student identifies parallel and intersecting lines and perpendicular lines.
<b>MG3C.b</b>	Student identifies a right angle, acute angle, and obtuse angle.	
<b>Measurement Strand</b>		
<b>4. Understand and use different forms and units of measurement in a variety of contexts.</b>	<b>Cluster 4A. Calendar and Time</b>	
	<b>MM4A.a</b>	Student understands basic calendar use.
	<b>MM4A.b</b>	Student tells time to the hour and ½ hour.
	<b>MM4A.c</b>	Student tells time to the ¼ hour and 5 minute intervals.
	<b>Cluster 4B. Weight and Length</b>	
	<b>MM4B.a</b>	Student distinguishes between concepts of more or less in an appropriate context.
	<b>MM4B.b</b>	Student sorts and classifies objects based on size, length, or weight.
	<b>MM4B.c</b>	Student selects appropriate tools and units to accurately measure in a given situation.
	<b>MM4B.c1</b>	Student uses nonstandard units ( <u>e.g.</u> , paper clips, unifix cubes, paper cutouts, etc.) and standard units ( <u>e.g.</u> , inches, centimeters) to measure length.
	<b>MM4B.c2</b>	Student compares weight and/or mass of objects using a balance scale with and without nonstandard units.
<b>MM4B.d</b>	Student measures with a ruler, tape measure, or yardstick.	
<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 creates a table, tally, chart, pictograph, or bar graph to report findings.
	<b>MD5A.a1</b>	Student identifies the title and the labels on a given graph and a table/chart.
	<b>MD5A.b</b>	Student interprets and compares data represented in a graph, table or chart.
	<b>MD5A.c</b>	Student makes a prediction, answers a question, or solves a problem using data from a table, tally, chart, pictograph, line graph, or bar graph.

# 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 and other objects in space.**

Cluster 2A. Planets

Cluster 2B. Earth's Structure

**Competency 3: Identify and describe weather and weather patterns.**

Cluster 3A. Weather

### **Life Science Strand**

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

Cluster 4A. Plants and Animals

Cluster 4B. Environmental Factors

**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 3 – 5**

**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 follows a set of simple procedures to answer a testable question (e.g., which car will go faster?).
	<b>SI1A.c</b>	Student collects and records data as part of an experiment (e.g., tally, draw/select and label, measure length, weigh mass, calculate density).
	<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.b</b>	Student predicts outcomes based on observations or 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 a graph, chart, or other visual representation (e.g., labeled drawing, diagram, model) to communicate the results on an investigation.
	<b>SI1C.c</b>	Student uses multiple sources of information (print and/or other media) to answer science-related questions.
	<b>SI1C.d</b>	Student uses science vocabulary from instruction to ask questions, connect predictions to explanations, and communicate ideas.

**Earth & Space Science Strand**

<b>2. Identify and describe features of the Earth and other objects in space.</b>	<b>Cluster 2A. Planets</b>	
	<b>SE2A.a</b>	Student identifies the sun as a star and Earth as a planet.
	<b>SE2A.b</b>	Student observes and identifies objects in the sky (e.g., clouds, stars, sun, planets, moon).
	<b>SE2A.c</b>	Student classifies heavenly objects seen in the day and nighttime skies.
	<b>SE2A.d</b>	Student identifies planets other than Earth.
	<b>SE2A.e</b>	Student uses a model to show Earth's rotation on its axis and to show day and night.
	<b>SE2A.f</b>	Student uses a model to show Earth's revolution around the sun and to show to show a year.
	<b>SE2A.g</b>	Student distinguishes between heavenly bodies that radiate light (sun, stars) and those that reflect light (moon, planets).

**MAAECF Science – Grades 3 – 5**

**Earth & Space Science Strand**

MECF Science Competencies	Rating scale item #	MECF Objectives/Rating Scale Items
<b>2. Identify and describe features of the Earth and other objects in space.</b> (Continued)	<b>Cluster 2B. Earth's Structure</b>	
	SE2B.a	Student identifies the three major layers of the Earth (crust, mantle, core) using a model or diagram.
	SE2B.b	Student sorts and classifies rocks and minerals by physical features.
	SE2B.c	Student identifies and compares various land forms (mountain, delta, valley, plateau, plains).
	SE2B.d	Student identifies and compares various bodies of water (lake, river, stream, ocean, fresh and salt water).
<b>3. Identify and describe weather and weather patterns.</b>	<b>Cluster 3A. Weather</b>	
	SE3A.a	Student compares and contrasts the seasons.
	SE3A.b	Student distinguishes between and among different forms of precipitation (e.g., rain, snow, sleet, hail).
	SE3A.c	Student makes weather instruments in order to observe and describe how they work (e.g., barometer, wind vane, thermometer, rain gauge).
	SE3A.d	Student identifies different instruments used to collect weather data (thermometer, wind vane, and rain gauge) and uses them to record weather conditions over time.
	SE3A.e	Student uses a variety of media to locate weather information and weather patterns.
SE3A.f	Student compares Mississippi weather with weather of other regions of the country.	
<b>Life Science Strand</b>		
<b>4. Identify and describe animals and plants and their environments.</b>	<b>Cluster 4A. Plants and Animals</b>	
	SL4A.a	Student classifies living and non-living entities.
	SL4A.b	Student recognizes that the Sun is the major source of the Earth's energy.
	SL4A.c	Student identifies the parts of a plant (i.e., stem, root, leaves, seeds, flowers).
	SL4A.d	Student groups plants by common observable features (e.g., color, size, habitat).
	SL4A.e	Student groups animals by common observable features (e.g., color, size, habitat).
	SL4A.f	Student classifies plants using given scientific criteria (e.g., with and without seeds; flowering and non-flowering, coniferous and deciduous trees; compound/simple leaves).
	SL4A.g	Student classifies animals using given scientific criteria (e.g., vertebrates – invertebrates; fish/bird/amphibian, reptile, mammal).
	SL4A.h	Student sequences life stages of plants or animals and compares the life stages of different organisms.
	SL4A.i	Student identifies basic needs of plants and animals (i.e., water, food, air, and shelter).
	SL4A.j	Student develops a food chain using pictures or other media.
SL4A.k	Student uses a food chain model to identify organisms and their roles (producers make food, consumers eat food, and decomposers break down matter).	

**MAAECF Science – Grades 3 – 5**

**Life Science Strand**

<b>MECF Science Competencies</b>	<b>Rating scale item #</b>	<b>MECF Objectives/Rating Scale Items</b>
<b>4. Identify and describe animals and plants and their environments.</b> (Continued)	<b>Cluster 4B. Environmental Factors</b>	
	<b>SL4B.a</b>	Student identifies ways the environment is affected by natural events (i.e., floods, fires, drought, hurricanes).
	<b>SL4B.b</b>	Student explains why recycling is important.
	<b>SL4B.c</b>	Student classifies objects as recyclables or trash.
	<b>SL4B.d</b>	Student identifies reasons that animals or plants might become endangered (e.g., loss of habitat, over hunting or fishing, pollution, climate change, over populating).
<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 identifies the 5 senses.
	<b>SL5A.b</b>	Student matches the body systems (skeletal, respiratory, digestive, circulatory, and excretory) with various functions within the body.
	<b>SL5A.c</b>	Student identifies or matches organs (e.g., heart, lungs, bones/skull, tongue, stomach, intestines, kidneys) with appropriate body system.
	<b>SL5A.c1</b>	Student identifies body organs ( <u>e.g.</u> , heart, lungs, stomach, eyes, ears, mouth, tongue, esophagus, intestines, kidneys, bones).
<b>SL5A.c2</b>	Student identifies the functions of organs ( <u>e.g.</u> , heart, lungs, stomach, eyes, ears, mouth, tongue, esophagus, intestines, kidneys, bones).	
<b>Physical Science Strand</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>	Students predict and test predictions about whether objects will sink or float in water.
	<b>SP6A.b</b>	Students recognize that all things are made up of matter.
	<b>SP6A.c</b>	Students classify objects and materials as gases, solids, or liquids.
	<b>SP6A.d</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).

**MAAECF Science – Grades 3 – 5**

**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> (Continued)	<b>Cluster 6B. Force and Motion</b>	
	<b>SP6B.a</b>	Student identifies activities using force to push or pull objects (e.g., push swing or door, pull door or shade down).
	<b>SP6B.b</b>	Student identifies simple machines in their environment (e.g., lever, pulley, wheel and axle).
	<b>SP6B.c</b>	Student explores, measures, and records the motion of an object.
	<b>Cluster 6C. Forms of Energy</b>	
	<b>SP6C.a</b>	Student identifies and groups objects that will be attracted/not attracted by a magnet.
	<b>SP6C.b</b>	Student identifies uses of electricity/electrical energy in their environment.
	<b>SP6C.c</b>	Student identifies different forms of energy (e.g., sound coming from musical instrument, light from flashlight or sun, heat from hairdryer or sun, electricity).
	<b>SP6C.d</b>	Student identifies examples of kinetic and potential forms of energy.
	<b>SP6C.e</b>	Student creates a simple circuit (using battery, insulated wire, and light or bell) to light a light or ring a bell.

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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).

Flowers, C., Browder, D., Wakeman, S., & Karvonen, M. (2007). "Links for Academic Learning: The Conceptual Framework." National Alternate Assessment Center (NAAC) and the University of North Carolina at Charlotte.

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.

No Child Left Behind Act of 2001, Pub. L. No. 107-110, 115 Stat. 1425 (2002).

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

**Mississippi**  
**Extended Curriculum Frameworks**  
Elementary School Version

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



The Mississippi Department of Education does not discriminate on the basis of sex, race, religion, age, national origin, ancestry, creed, pregnancy, marital or parental status, sexual orientation, or physical, mental, emotional or learning disability.

Revised ~~October 2008~~ August 2012 by Mississippi Educators in collaboration with the Office of Student Assessment and Measured Progress

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## Introduction

The Mississippi Extended Curriculum Frameworks (MECF) Elementary School Version includes curriculum content that students with significant cognitive disabilities in grades 3 through 5 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. In this document, we provide a rationale for alternate assessment content standards and the curriculum frameworks that bring these content standards to life for language arts, mathematics, and science instruction. and (c) some resources to support implementation in classrooms across Mississippi. This revised version of the MECF also includes additional guidance for teachers by including a number of sample “age-appropriate” classroom activities and possible support skills that can be used to plan classroom instruction that stimulates the development and use of the desired academic knowledge and skills.

Revised guidelines and protocols for collecting high quality evidence to support MAAECF ratings are still under development by the state at this time; however, Teachers should ~~can~~ begin to 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.

It is anticipated that rating scales and data collection protocols *could be* revised in the following ways:

This document provides the curriculum frameworks that bring the prioritized grade-level content standards to life for language arts, mathematics, and science instruction. suggested resources to support implementation in classrooms; and additional guidance for teachers by including a number of sample “age-appropriate” classroom activities and possible support skills that can be used to plan instruction that stimulates the development and use of the desired academic knowledge and skills. 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 tha outlines the allowable assessment objectives for 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 7-10), Mathematics (pages 11-16), and science (pages 17-21).

## ***Introduction***

~~The Mississippi Extended Curriculum Frameworks (MECF) Elementary School Version includes curriculum content that students with significant cognitive disabilities in grades 3 through 5 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. In this document, we provide: (a) a rationale for alternate assessment content standards; (b) the curriculum frameworks that bring these content standards to life for language arts, mathematics, and science instruction; and (c) some resources to support implementation in classrooms across Mississippi. This revised version of the MECF also includes additional guidance for teachers by including a number of sample “age-appropriate” classroom activities and possible support skills that can be used to plan classroom instruction that stimulates the development and use of the desired academic knowledge and skills.~~

~~**Revised guidelines and protocols for collecting high-quality evidence to support MAAECF ratings are still under development by the state at this time;** however, teachers can begin to 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 now (at the beginning of the school year) and to measure progress on the same skills and concepts later in the school year. It is anticipated that rating scales and data collection protocols *could be* revised in the following ways:~~

- ~~• Currently, one rating scale is used in the Mississippi Alternate Assessment of Extended Curriculum Frameworks (MAAECF) to evaluate student performance. It combines accuracy and independence into the same scale. The revised rating scales will likely include two separate rating scales in order to assess accuracy and independence separately on each assessment task. This is an approach currently used by many states’ alternate assessments and has been found to be a much more reliable and valid way to interpret student~~

performance and to measure student progress across the school year. Teachers should begin to document both aspects—accuracy achieved on the task and level of independence in completing the task—when collecting assessment evidence.

- ~~Currently, the same content objectives are being taught and assessed each year within the same grade span and sometimes even across grade spans. Beginning in 2008-2009, teachers will be focusing their instruction and assessment on different content objectives each year, so that exactly the same content is not being taught year after year. In some cases, such as learning safety rules for science investigations or answering comprehension questions in reading, the same content objective might be required; however, other clusters and specific content objectives will likely be different grade to grade. This change will encourage teachers to focus more instructional time on fewer objectives across the school year and to build on learning from the prior year. Differentiation of content across grades for students with significant disabilities can mean changing depth, breadth, or complexity of content as well new content introduced at later grade levels.~~
- ~~Multiple data collections during the school year will be used to establish a baseline and measure progress on the same content objectives. After a careful review of other states' data collection practices, the state will issue more specific guidelines on the number of data collections required for each content objective within a cluster. It is likely that it will be at least three data collections: one in the fall to establish a baseline for learning, and *at least* one more in the winter and the spring.~~

### ***Legal and Policy Context for Extended Content Standards and Assessments***

~~Three main federal initiatives have significantly influenced special education practices (McDonnell, McLaughlin, & Morison, 1997): the Individuals with Disabilities Education Act (IDEA) in 1997, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990 (ADA). The 1997 IDEA reauthorization mandates that students with disabilities be held to the same educational standards as students without disabilities. These policies converge on two main points: (1) Students with disabilities have the right to a free and appropriate public education, and (2) students with disabilities must be held accountable to the same educational standards as students without disabilities. Educational policies, however, are not often prescriptive as to how students with disabilities are to be provided an education comparable to that of their general education counterparts. Furthermore, since one of the main philosophies of special education is to provide an individualized education program for each student, it is often unclear to what degree students with disabilities should be held to the same educational standards as general education students (McDonnell, et al. 1997).~~

~~For the majority of students with disabilities, participation in state and district assessments involves taking existing standardized tests with testing accommodations. A small percentage of students (an estimated 1%), however, have disabilities that make their participation in general state- and district-wide tests impractical—and likely to result in inaccurate measures of their academic achievement. Alternate assessments are intended for use with students who are unable to participate in general state and district assessment systems even with accommodations. As an important element of each state's assessment system, alternate assessments are required to meet the federal regulations outlined in Title I of the Elementary and Secondary Education Act. Title I mandates that “state assessment shall be aligned with the state's challenging content and student performance standards and provide coherent information about student attainment of such standards” (§1111[b][3][B]).~~

~~In 2002, the No Child Left Behind Act (NCLB) increased the federal government's emphasis on assessment and accountability systems to include requirements for annual statewide assessments of all students in Grades 3-8 and high school in reading/language arts, mathematics, and (by 2007) science. In addition, NCLB requires a disaggregated annual reporting of students' performance to insure that all groups (including~~

students with disabilities) are making adequate progress toward the goal of having all students declared “proficient” on statewide assessments within the next 12 years. Recent interpretations of NCLB requirements by the United States Department of Education (USDOE, 2003) also allow that up to 1% of students in states and school districts may be counted as “proficient” toward federal accountability goals through participation in statewide alternate assessment.

The development and implementation of standards-based alternate assessments represents a promising strategy for increasing the inclusion and achievement of students with significant disabilities; however, it is not without challenges. The first critical challenge facing the state of Mississippi in once again redesigning its alternate assessment system was to ensure that the academic content to be included as language arts, mathematics, and science content was indeed academic and aligned to Mississippi’s grade-level content standards. Academic content has been underrepresented in past instruction and research with students with significant cognitive disabilities; therefore extended curriculum frameworks in these curricular areas needed close analysis and revision. According to the National Alternate Assessment Center/NAAC, “to be inclusive of students with the most significant disabilities, states sometimes target Foundational Skills for assessment. These skills are commonly embedded in academic instruction and *are important and appropriate* to capture early academic achievement; but these skills are *not* aligned to academic content, because they are outside the general education construct (NAAC, 2007). Only a small portion of the overall extended curriculum frameworks should include foundational skills. Using the NAAC definition, Foundational Skills are skills that are *the assumed competence at all grade levels* specific to an academic context, such as orienting a book or turning a page as precursors to learning to read; or learning to follow a direction as a precursor to conducting a science investigation.

### ***Defining What Content Alternate Assessments Should Measure***

— IDEA 1997 clearly states that students with disabilities should have access to the general education curriculum and academic standards. Moreover, this legislation requires that all students have opportunities and instruction allowing them to make progress in acquiring and mastering the skills and concepts included in state and district academic standards. This emphasis on attaining academic achievement represents a change from the previous focus on curriculum and inclusion practices traditionally provided to many students with significant disabilities. Although the law still maintains the right of each student with disabilities to an individually referenced curriculum, outcomes linked to the general education program have become the optimal target. It is no longer enough for students with disabilities to be present in a general education classroom. Students with significant disabilities also must have instruction, modifications, and accommodations that promote their progress toward the educational expectations of the larger student population.

A related concern has been the focus of each state’s alternate assessment processes and protocols. Specifically, test developers and policymakers must establish that assessments for students who are unable to take the general assessment: use age-appropriate contexts (e.g., modified grade-level texts or materials), provide flexibility when applying accommodations or modifications so that students with a range of disabilities can demonstrate what they have learned, and should be accessible to students who have not yet fully developed symbolic communication. If alternate assessments are intended to be part of a larger accountability system and to measure progress towards the same educational expectations as desired of the larger student population, then a state’s general education academic standards should form the foundation for the alternate assessment. This is the case in Mississippi.

## *Planning Instruction Using the Extended Content Standards*

As previously stated, this document provides the curriculum frameworks that bring the prioritized grade-level content standards to life for language arts, mathematics, and science instruction; suggested resources to support implementation in classrooms; and additional guidance for teachers by including a number of sample “age appropriate” classroom activities and possible support skills that can be used to plan instruction that stimulates the development and use of the desired academic knowledge and skills. 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. 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 (page 7), Mathematics (pages 16-17), and science (page 27). It is expected that teachers will include several objectives from each cluster when planning instruction and provide opportunities for students to use skills they are working on in one content area to other content areas and other learning goals. For example, students working on data collection and measurement in mathematics will benefit from applying those skills to science inquiry tasks. Students developing their reading comprehension skills and breadth of vocabulary can apply that learning to mathematics, science, and other everyday learning tasks.

# LANGUAGE ARTS EXTENDED CURRICULUM FRAMEWORKS

## 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 3 – 5

Reading Strand

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

Cluster 1A. Concepts of Print

R1A.a

Student locates print and interprets the message/ meaning (common symbols and signage, environmental print).  
~~Student finds common symbols and signs around the school (e.g., exit, lunch room, office) in a scavenger hunt.~~  
~~Student matches a common symbol or sign to its word (e.g., McDonald's) or meaning (e.g., food)~~  
~~Student follows a picture schedule~~  
~~Student can identify weather on a chart by choosing the appropriate symbol (clouds, sun)~~  
~~Student follows text and demonstrates directionality: left to right and top to bottom; 1-1 matching of words spoken to words in print)~~  
~~Student matches a word to a word (or symbol to a symbol) as teacher reads.~~  
~~Student looks at and uses eye gaze to follow teacher's reading (and tracking of text) in a "big book."~~  
~~Student follows along by touching pictures in a student copy of modified text while teacher reads.~~  
~~Student recognizes or locates the key parts of a book: front and back, print, illustrations, title, and author~~  
~~Student will respond yes-no when asked, "is this the title?" etc.~~  
~~Given a model, student will touch the title of a book, the author's name, etc.~~  
~~Student recognizes that sentences in print are made of separate words.~~  
~~Using a word wall, student will find individual words from a sentence.~~  
~~Student distinguishes between letters, words, and sentences~~  
~~Using plastic letters, student will locate individual letters in a word (e.g., students' name) by taking the word apart and putting it back together~~  
~~Using a word wall, student will find individual words to make a sentence.~~  
~~Student reads high frequency words (e.g., familiar names, personal interests).~~  
~~Student delivers mail to specific mailboxes/rooms~~  
~~Student matches written names to pictures~~  
~~Student returns student work to peers~~  
~~Given picture and name cards of people, student matches them to school or home~~  
~~Student draws and labels pictures of people or things~~  
~~Using communication system~~

Fine motor skills

Turn pages of book

One-to-one correspondence

Following directions

Visual discrimination

Turn attention toward another person

Vocabulary development

	<p>Social interactions</p> <p>Turn taking</p> <p>Sight word recognition</p> <p>Reaching across midline</p> <p>Auditory discrimination</p>
<b>R1A.b</b>	Student follows text and demonstrates directionality: left-to right and top-to bottom; 1-1 matching of words spoken to words in print).
<b>R1A.b1</b>	Student locates where to begin reading a text.
<b>R 1A.c</b>	Student recognizes or locates the key parts of a book: front and back, print, illustrations, title, and author.
<b>R 1A.d</b>	Student recognizes that sentences in print are made of separate words.
<b>R 1A.e</b>	Student distinguishes between letters, words, and sentences.
<b>R1A.e1</b>	Student identifies dialogue in text.
<b>R1A.e2</b>	Student distinguishes dialogue from text.
<b>R 1A.f</b>	Student reads high frequency words (e.g., familiar names, personal interests).
<b>Cluster 1B. Phonological Awareness</b>	
<b>R 1B.a</b>	<p>Student matches letters and sounds.</p> <p><del>Student plays bingo for beginning sounds</del></p> <p><del>Student hears sounds and chooses the correct letter from a magnet board, VOD, or on a keyboard</del></p> <p><del>Student matches letters to objects or pictures with the same initial/middle/ ending sound</del></p> <p><del>Student hears sound and identifies object with the same initial/middle/ending sound</del></p> <p><del>Student uses letter-sound relationships to blend phonemes to make words</del></p> <p><del>Student uses letter tiles to sound out new words</del></p> <p><del>When presented with a rime (e.g., -at, -et), student uses letter tiles or magnets to make new words</del></p> <p><del>Student recognizes pairs of rhyming words.</del></p> <p><del>Student responds yes-no when hearing two words read aloud, "does ____ rhyme with ____?"</del></p> <p><del>Student makes a rhyming word by replacing initial sounds</del></p> <p><del>Student recognizes the number of syllables in one- and two-syllable words.</del></p> <p><del>Student will clap, tap, stomp, or blink with each syllable</del></p> <p><del>Student will move a token each time he/she hears a syllable</del></p> <p>Communication system</p> <p>Using organizing strategies</p> <p>Making choices</p> <p>Sight word recognition</p>

		<del>Visual discrimination</del>
	<b>R 1B.b</b>	<del>Student uses letter-sound relationships to blend phonemes to make words.</del>
	<b>R 1B.c</b>	<del>Student recognizes pairs of rhyming words.</del>
	<b>R 1B.d</b>	<del>Student recognizes the number of syllables in one- and two-syllable words.</del>
<b>1. Use word recognition and vocabulary (word meaning) skills and strategies to communicate (continued)</b>	<b>Cluster 1C Word Identification, Vocabulary, and Decoding Strategies</b>	
	<b>R 1C.a</b>	<p>Student demonstrates comprehension of safety words, symbols, or pictures.</p> <p><del>Student matches a safety word picture with a picture of the action (e.g., stop, walk)</del></p> <p><del>Student completes an obstacle course where he/she acts out different safety signs as he/she comes to them</del></p> <p><del>Student demonstrates an understanding of positional words.</del></p> <p><del>Student follows directions involving positional words (e.g., go to the next desk, move the figure to the right two squares)</del></p> <p><del>Student draws or moves objects or symbols in different positions as directed by a worksheet or laminated work-mat.</del></p> <p><del>Student uses pictures for context clues.</del></p> <p><del>Student chooses the correct picture that goes with a text heard or read</del></p> <p><del>Student uses pictures in familiar text to remind him/her of the words</del></p> <p><del>Student read a story with rebus/pictogram cues to support decoding of more difficult words</del></p> <p><del>Student demonstrates comprehension of words that depict emotions.</del></p> <p><del>Student matches emotion words with pictures depicting that emotion</del></p> <p><del>Student explains how a character feels based on what the character did (Stanley Yelnats cried — he was sad)</del></p> <p><del>Student identifies roots and affixes (choose 2: un-, re-, less-, ful)</del></p> <p><del>Student will use wiki sticks to underline prefix or suffix</del></p> <div style="text-align: center;"> </div> <p><del>Student will match prefix or suffix to its meaning using pictures, words or objects (e.g., un- = not )</del></p> <p><del>Student uses roots and affixes to decode and understand words (choose 2: un-, re-, less-, ful)</del></p> <p><del>Student will match words with prefix or suffix to a picture/object representing the meaning of that word (e.g., untie to an untied shoe)</del></p> <p><del>Student classifies words as nouns or verbs</del></p> <p><del>Student uses a graphic organizer to place pictures into categories of people, place or thing</del></p> <p><del>Student identifies verbs and nouns in a short sentence</del></p> <p><del>Student reads simple sentences fluently.</del></p> <p><del>Student reads simple stories describing classmates, family, self.</del></p> <p><del>Student reads simple sentences about his/her day</del></p> <p><del>Student recognizes words that are synonyms and antonyms</del></p> <p><del>Student touches objects that represent synonyms or antonyms</del></p> <p><del>Student matches words/pictures that words/pictures that mean the same or opposite.</del></p> <p><del>Student matches print words to objects.</del></p> <p><del>Student plays sight word bingo</del></p> <p><del>Student matches word cards to objects ( Words may be visually presented or in Braille)</del></p> <p><del>Student recognizes and reads basic sight words from a recommended word list.</del></p> <p><del>Student plays sight word bingo</del></p>

~~Student has a “reading bee” with classmates where each team tries to read the most words presented by the teacher~~  
~~Student identifies when a word does not make sense in the context used~~  
~~Student selects from two words or objects that makes a statement true.~~  
~~Student determines the correct meaning of a multiple meaning word in a given context.~~  
~~Given a sentence with a multiple meaning word, student will choose the picture definition that best matches that word~~

(e.g., I saw the game. [ -  ])  
~~Following directions~~

~~Using an augmentative communication device~~

~~One-to-one correspondence~~

~~Social interactions~~

~~Vocabulary development~~

~~Sight word recognition~~

~~Understanding emotions~~

~~Following directions~~

~~Using an augmentative communication device~~

~~One-to-one correspondence~~

~~Social interactions~~

~~Auditory discrimination~~

~~Sight word recognition~~

~~Vocabulary development~~

**R 1C.b** Student demonstrates an understanding of positional words.

**R 1C.c** Student uses pictures for context clues.

**R 1C.d** Student demonstrates comprehension of words that depict emotions.

**R 1C.e** Student identifies roots and affixes (choose 2: un-, re-, -less, -ful).

	<b>R 1C.f</b>	<u>Student uses roots and affixes to decode and understand words (choose 2: un-, re-, -less, -ful).</u>
	<b>R 1C.g</b>	<u>Student classifies words as nouns or verbs.</u>
	<b>R 1C.h</b>	<u>Student reads simple sentences fluently.</u>
	<b>R 1C.i</b>	<u>Student recognizes words that are synonyms and antonyms.</u>
	<b>R 1C.j</b>	<u>Student matches print words to objects.</u>
	<b>R 1C.k</b>	<u>Student recognizes and reads basic sight words from a recommended word list.</u>
	<b>R 1C.l</b>	<u>Student identifies when a word does not make sense in the context used.</u>
	<b>R 1C.m</b>	<u>Student determines the correct meaning of a multiple meaning word in a given context.</u>

**MAAECF ELA – Grades 3 – 5**

**Reading Strand**

MECF ELA Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <b>Possible classroom learning activities/resources</b> <b>Possible support skills to integrate with academic instruction</b>
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**2. Apply strategies and skills to comprehend, respond to, interpret, and evaluate texts**

<b>Cluster 2A Using Text Features and Text Structures</b>		
<b>2. Apply strategies and skills to comprehend, respond to, interpret, and evaluate texts</b>	<b>R 2A.a</b>	<p>Student locates or names text features in different texts (e.g., caption, illustrations, key on map, bold text, diagram, glossary).</p> <p><del>Student will point to the caption of a picture</del></p> <p><del>Student will follow along with teacher to find the map and its key in a text</del></p> <p><del>Student will find the index or glossary of a book</del></p> <p><del>Student makes basic inferences from a text using text features (e.g., pictures, illustrations, captions, bar graph)</del></p> <p><del>Student chooses the picture showing phrase that is the best inference (e.g., Sally saw a puddle in the street. Sally went home soaking wet. Choose the picture/sentence that makes the most sense, "Sally fell in the puddle." "Sally walked around the puddle.")</del></p> <p><del>Student uses the information found in the text features to answer questions (e.g., caption, illustrations, key on map, bold text, diagram)</del></p> <p><del>Student uses a simple diagram to show parts (e.g., parts of a flower)</del></p> <p><del>Student uses the picture glossary to find a word meaning</del></p> <p><del>Student identifies correct sequence within a given text (story/narrative text and procedural texts, such as directions)</del></p> <p><del>Student underlines, points to, eye gazes time order words (e.g., first, second, next last)</del></p> <p><del>Student matches words to picture (first, second, last)</del></p> <p><del>Student sequences objects or tactile cues representing events in narrative text</del></p> <p><del>Student sequences 2 or 3 pictures representing correct science procedure</del></p> <p><del>Student matches words to picture (first, second, last)</del></p> <p><del>Student matches cause with effect from a text, when cause or effect is given</del></p> <p><del>Student uses picture cards to match cause and effect from a text</del></p> <p><del>Student completes a graphic organizer with cause and effect from a text (e.g., using pictures, words, tactile cues, objects)</del></p> <p><b>Communication system</b></p>

	<p>Fine-motor skills</p> <p>Visual discrimination</p> <p>Vocabulary development</p>
R 2A.b	Student makes basic inferences from a text using text features (e.g., pictures, illustrations, captions, bar graph).
R 2A.c	Student uses the information found in the text features to answer questions (e.g., caption, illustrations, key on map, bold text, diagram).
R 2A.d	Student identifies correct sequence within a given text (story/narrative text and procedural texts, such as directions).
R 2A.e	Student matches cause with effect from a text, when cause or effect is given.
<b>Cluster 2B Reading Comprehension</b>	
R 2B.a	<p>Student matches words or symbols to show understanding of common school and community places or events.</p> <p><del>Student matches a book to the word library</del></p> <p><del>Student matches pictures of merchandise to the name of a retailer</del></p> <p><del>Student describes or retells story events when presented with a prompt.</del></p> <p><del>Using objects representing an event, the student sequences them into a cohesive essay or summary</del></p> <p><del>Student composes simple statements on a topic learned about by reading or listening to text read aloud.</del></p> <p><del>Student completes cloze sentence using newly learned vocabulary</del></p> <p><del>After learning about planets, student writes an essay by choosing true statements from a choice of statements</del></p> <p><del>Student identifies main idea from what he/she reads or hears read aloud.</del></p> <p><del>Given three objects/pictures that represent the main idea of a story, student will choose the one that illustrates the main idea.</del></p> <p><del>Student draws a picture of the main idea</del></p> <p><del>Student answers who, what, and where questions about a text read or heard read aloud.</del></p> <p><del>Student answers basic comprehension questions about a text.</del></p> <p><del>Student uses pictures from the story to indicate his or her answer to the questions</del></p> <p><del>Student uses augmentative communication device to answer yes/no questions about a story (e.g., Was Pippi the main character?)</del></p> <p><del>Student identifies literary elements (character, setting, problem, solution) after reading a story or hearing it read aloud.</del></p> <p><del>Student places pictures in a graphic organizer or story map to identify characters, problem/solution, and setting</del></p> <p><del>Student classifies information from an informational text as fact or opinion</del></p> <p><del>Using a T-Chart, student sorts information as fact or opinion.</del></p> <p><del>Student identifies key words that signal opinion (like, think, believe, etc.)</del></p> <p><del>Student places an "F" next to facts and an "O" next to opinions</del></p> <p><del>Student paraphrases a message read or from text read aloud.</del></p> <p><del>Student practices "active listening" to a peer by paraphrasing what the peer read aloud or what was seen in video message.</del></p> <p><del>Student listens to a story and then retells it to a friend.</del></p> <p>Sight word recognition</p> <p>Matching</p>

		<p>Understanding emotions</p> <p>Motor skills</p> <p>Classifying information</p>
	R 2B.b	<u>Student describes or retells story events when presented with a prompt.</u>
	R 2B.c	<u>Student composes simple statements on a topic learned about by reading or listening to text read aloud.</u>
	R 2B.d	<u>Student identifies main idea from what he/she reads or hears read aloud.</u>
	R 2B.e	<u>Student answers who, what, and where questions about a text read or heard read aloud.</u>
	R 2B.f	<u>Student identifies literary elements (character, setting, problem, solution) after reading a story or hearing it read aloud.</u>
	R 2B.g	<u>Student classifies information from an informational text as fact or opinion.</u>
	R 2B.h	<u>Student paraphrases a message read or from text read aloud.</u>
	<b>R2B.i1</b>	<u><b>Student reads a variety of texts and identifies author's purpose (e.g., inform, entertain, persuade).</b></u>

MAAECF ELA – Grades 3 – 5		
Writing Strand		
<b>3. Express, communicate, evaluate, or exchange ideas effectively.</b>	<b>Cluster 3A The Writing Process</b>	
	<b>W3A.a</b>	<p>Student produces purposeful drawing.</p> <p><del>Student creates a drawing or other symbol(s) to express an idea or opinion</del></p> <p><del>Student completes a graphic organizer to plan and write on a topic</del></p> <p><del>Student uses pictures, objects, or words to complete a graphic organizer to plan a report on a favorite animal.</del></p> <p><del>Student completes a graphic organizer to plan and write a story</del></p> <p><del>Student uses pictures, objects, or words to complete a beginning, middle, and end graphic organizer to outline a story or describe a character.</del></p> <p><del>Student generates words, simple sentences, pictures, signs, or objects to convey a message or idea.</del></p> <p><del>Student uses an augmentative communication device to convey an idea</del></p> <p><del>Student writes a letter to a relative telling about his/her day.</del></p> <p><del>Student chooses picture symbols to describe a field trip</del></p> <p>Communication system</p> <p>Using a computer/switch</p> <p>Making choices</p> <p>Social interactions</p>
	<b>W 3A.b</b>	<u>Student completes a graphic organizer to plan and write on a topic.</u>
	<b>W 3A.c</b>	<u>Student completes a graphic organizer to plan and write a story.</u>

	<b>W 3A.d</b>	<u>Student generates words, simple sentences, pictures, signs, or objects to convey a message or idea.</u>
	<b>Cluster 3B Audience and Purpose</b>	
	<b>W 3B.a</b>	<p>Student describes a personal object or retells a personal event when presented with a prompt.</p> <p><del>Student chooses descriptive pictures that describe a personal object</del></p> <p><del>Using objects representing an event, the student sequences them into a cohesive essay</del></p> <p><del>Student writes notes to peers, parents, and others for a variety of purposes.</del></p> <p><del>Student chooses picture symbols to complete a get-well card for a sick friend or a thank-you note.</del></p> <p><del>Student uses objects to complete cloze sentences asking a parent to come to school for parent/teacher night.</del></p> <p><del>Student selects appropriate words or phrases to add details to a report or story</del></p> <p><del>Student selects pictures, objects, or words to describe a favorite animal or event.</del></p> <p><del>Student uses pictures, objects, or words to describe a story character.</del></p> <p><del>Student identifies appropriate word choices for particular audiences</del></p> <p><del>Student compares the greeting and salutation for a friendly and a business letter</del></p> <p><del>Student reads a text and identifies intended audience (teacher, peers, etc)</del></p> <p><del>Student identifies possible purpose for reading or writing</del></p> <p><del>Student lists purposes of writing or reading (to inform, to entertain, to persuade)</del></p> <p><del>Student matches pictures representing purposes of writing/reading the terms</del></p> <p><del>Communication system</del></p> <p><del>Using organizing strategies</del></p> <p><del>Making choices</del></p>
	<b>W 3B.b</b>	<u>Student writes notes to peers, parents, and others for a variety of purposes.</u>
	<b>W 3B.c</b>	<u>Student selects appropriate words or phrases to add details to a report or story</u>
	<b>W 3B.d</b>	<u>Student identifies appropriate word choices for particular audiences</u>
	<b>W 3B.e</b>	<u>Student identifies possible purpose for reading or writing</u>
<b>4. Apply Standard English to Communicate</b>	<b>Cluster 4A Writing Mechanics</b>	
	<b>W 4A.a</b>	<p>Student demonstrates understanding of capital letters by matching upper and lower case letters.</p> <p><del>Given two boxes, student will put lower cases letters in one box and upper case letters in another</del></p> <p><del>Using plastic letters, student will match upper case letters with lower case letters</del></p> <p><del>Student composes simple complete sentences.</del></p> <p><del>Student uses objects, symbols, pictures, or words to express complete thoughts (subject + predicate).</del></p> <p><del>Student differentiates punctuation marks (period, question mark, exclamation point) from other letters and symbols.</del></p> <p><del>Student looks at/touches the correct punctuation mark when prompted, "show me the period, etc."</del></p> <p><del>Student points to the period at the end of a sentence.</del></p> <p><del>Student organizes symbols as punctuation marks vs. not a punctuation mark.</del></p> <p><del>Student uses common spelling patterns to make and spell new words (- at, cat, bat)</del></p> <p><del>Student chooses the correct letter tile or card to complete a word (e.g., _____at).</del></p> <p><del>Student draws a house with word family on the roof and writes/places words inside the house</del></p> <p><del>Student accurately spells words from a recommended word list.</del></p> <p><del>Student types his/her new vocabulary words</del></p>

	<p><del>Student spells orally presented words</del></p> <p><del>Student uses capital letters correctly for people's names and at the beginning of sentences, days, and months.</del></p> <p><del>Student uses capital letters when writing her/his own name using computer and keyboard.</del></p> <p><del>Student uses capital letters at the beginning of a sentence or for own name using magnetic letters or tiles.</del></p> <p><del>Student writes the date with correct capitalization</del></p> <p><del>Student recognizes punctuation marks by name (period, question mark, exclamation point); and correctly matches punctuation marks with their meaning/use.</del></p> <p><del>Student looks at/touches the correct punctuation mark when prompted, "show me the period, etc."</del></p> <p><del>Student points to the period at the end of a sentence.</del></p> <p><del>Student matches correct punctuation mark (period, question mark, exclamation point) to picture cue of speaker questioning, speaker excited, or speaker making statement.</del></p> <p><del>Student correctly uses punctuation marks (period, question mark, exclamation).</del></p> <p><del>Student matches correct mark to sentence (statement, question, exclamation point).</del></p> <p><del>Communication system</del></p> <p><del>Visual discrimination</del></p>
<b>W 4A.b</b>	<u>Student composes simple complete sentences.</u>
<b>W 4A.c</b>	<u>Student differentiates punctuation marks (period, question mark, exclamation point) from other letters and symbols.</u>
<b>W 4A.d</b>	<u>Student uses common spelling patterns to make and spell new words (-at, cat, bat)</u>
<b>W 4A.e</b>	<u>Student accurately spells words from a recommended word list.</u>
<b>W 4A.f</b>	<u>Student uses capital letters correctly for people's names and at the beginning of sentences, days, and months.</u>
<b>W 4A.g</b>	<u>Student recognizes punctuation marks by name (period, question mark, exclamation point); and correctly matches punctuation marks with their meaning/use.</u>
<b>W 4A.h</b>	<u>Student correctly uses punctuation marks (period, question mark, exclamation).</u>

# MATHEMATICS

## EXTENDED CURRICULUM FRAMEWORKS

### 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 Facts

Cluster 1C Money

**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 Recognition

**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 4C 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 Calendar and Time

Cluster 4B Weight and Length

**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.**

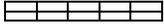
Cluster 5A Collecting and Reporting Data

**MAAECF Mathematics – Grades 3 – 5**

**Numbers and Operations Strand**

MECF Mathematics Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <b>Possible classroom learning activities/resources</b> <b>Possible support skills to integrate with academic instruction</b>
<p><b>1. Understand relationships among numbers and basic operations. Compute fluently and make reasonable estimates.</b></p>	<p><b>Cluster 1A. Counting and Numbers</b></p>	
	<p><b>MN1A.a</b></p>	<p>Student rote counts from memory (at minimum) from 0 to 10.</p> <p><del>Student eye-gazes numbers in rote order</del>  <del>Student points to numbers in order</del>  <del>Student identifies numerals (at minimum) 0 to 10.</del>  <del>Toss a beanbag at the correct number stated</del>  <del>Toss a beanbag and state the number that the bean bag hits</del>  <del>Student lists three whole numbers in proper numerical order.</del>  <del>Given three whole numbers, student will place the numbers in the correct sequence</del>  <del>Given a whole number, student will identify the numbers that comes before and after the given number</del>  <del>Student determines the number of objects in a set.</del>  <del>Student will count the number of manipulatives in a group.</del>  <del>Student counts groups on a worksheet.</del>  <del>Given three numerals and a group items student matches the correct numeral to the number of items</del>  <del>Student demonstrates 1-to-1 correspondence in a variety of contexts.</del>  <del>Student passes out one item per person</del>  <del>Student determines “first” through “tenth” (ordinal numbers), “next” and “last” positions.</del>  <del>Given objects, picture, people in a line, student will identify first, second, next, and last.</del>  <del>Student recognizes place value of ones, tens, and hundreds places.</del>  <del>Student can place digits on a prepared place value chart.</del>  <del>Student can point to the ones, tens, and hundreds place in a presented number.</del>  <del>When presented with a number, student can use manipulatives (Cuisenaire rods, base ten blocks, bundles of straws, etc.) to represent that number.</del>  <del>Student composes and decomposes 2- and 3-digit whole numbers using standard expanded form, words, or models.</del>  <del>When presented with a number, student can use manipulatives (Cuisenaire rods, base ten blocks, bundles of straws, etc.) to represent that number in expanded format.</del>  <del>Student rounds two- and three-digit whole numbers to the nearest hundred.</del>  <del>Using a number line, hundreds chart, etc. and given a 2 or 3-digit number, the student will round the number to the nearest hundred</del>  <del>Student compares whole numbers using terms and symbols (&gt;, &lt;, =)</del>  <del>Given numbers paired with sets of objects, student will identify which number is greater than/more, which number is less than/less, and/or equal to/same.</del>  <b>Large numbers</b></p>

	<p><del>Embedded communication skills (Picture communication symbols; tactile representations, switches, voice output devices, yes/no, eye gaze, etc.)</del></p> <p><del>Reach and grasp</del></p> <p><del>Reach, grasp, and release</del></p>
<b>MN1A.b</b>	<u>Student identifies numerals (at minimum) 0 to 10.</u>
<b>MN1A.c</b>	<u>Student lists three whole numbers in proper numerical order.</u>
<b>MN1A.d</b>	<u>Student determines the number of objects in a set.</u>
<b>MN1A.e</b>	<u>Student demonstrates 1-to-1 correspondence in a variety of contexts.</u>
<b>MN1A.f</b>	<u>Student determines “first” through “tenth” (ordinal numbers), “next” and “last” positions.</u>
<b>MN1A.g</b>	<u>Student recognizes place value of ones, tens, and hundreds places.</u>
<b>MN1A.g1</b>	<u>Student identifies place value of ones <b>and</b> tens.</u>
<b>MN1A.h</b>	<u>Student composes and decomposes 2- and 3-digit whole numbers using standard expanded form, words, or models.</u>
<b>MN1A.i</b>	<u>Student rounds two- and three-digit whole numbers to the nearest hundred.</u>
<b>MN1A.j</b>	<u>Student compares whole numbers using terms and symbols (&gt;, &lt;, =).</u>
<b>Cluster 1B. Basic Facts</b>	
<b>MN1B.a</b>	<p>Student adds single-digit numbers.</p> <p><del>Student uses manipulatives to add</del></p> <p><del>Student uses a number line to add</del></p> <p><del>Student uses Touch Math to add</del></p> <p><del>Student subtracts single digit numbers.</del></p> <p><del>Student uses manipulatives to subtract</del></p> <p><del>Student uses a calculator to subtract</del></p> <p><del>Student uses a number line to subtract</del></p> <p><del>Student adds double-digit numbers.</del></p> <p><del>Student uses straws 1 = 1 straw as ones and groups of 10 as tens) to add.</del></p> <p><del>Student uses base ten blocks to add</del></p> <p><del>Student subtracts double-digit numbers and justifies answer</del></p> <p><del>Student uses straws 1 = 1 straw as ones and groups of 10 as tens) to subtract.</del></p> <p><del>Student uses base ten blocks to subtract</del></p> <p><del>Student estimates sums and differences of whole numbers.</del></p> <p><del>Given math problems, student uses rounding to estimate the sum or difference.</del></p> <p><del>Given math problems, student uses composing/decomposing strategies to estimate sum or difference (e.g., 32 + 12, 30+10 is 40, 2 +2 is 4, answer is 44)</del></p>

	<p>Student identifies that 0.50 is equivalent to <math>\frac{1}{2}</math>.</p> <p>Using hundreds chart, student cuts chart in half, then identifies how many units out of 100 are in half.</p> <p>Student matches <math>\frac{1}{2}</math> to the appropriate representation of .50 using hundreds blocks (units, rods, and mats)</p> <p>Student identifies and models representations of fractions with denominators of 2, 3, 4, 5, 6, 8, 10.</p> <p>Student plays fraction bingo</p> <p>Student matches flashcards of fractions with picture representations of the fractions</p> <p>Student creates models of fractions using student drawn models, folding paper, manipulatives, etc.</p> <p>Student models multiplication using arrays, equal-sized groups, area models, or equal-sized moves on the number line, etc.</p> <p>Student uses unifix cubes to model multiplication arrays.</p> <p>Student uses graph paper to color multiplication arrays.</p> <p>Student matches multiplication arrays to a given number sentence (<math>2 \times 5 = \underline{\hspace{2cm}}</math>)</p> <p>Student uses symbols  (+, =) and vocabulary (add, plus, sum, total) of addition and symbols (−, =) and vocabulary (subtract, minus, difference) of subtraction.</p> <p>Given a situation (word problem) student identifies word that represents +, = (e.g., more, total, combined, in all, etc.)</p> <p>Given a situation, student identifies word that represents −, = (e.g., take away, loses, subtracts, less, difference, etc.)</p> <p>Reach and grasp</p> <p>Cross midline</p> <p>Following directions (Task Analyze steps)</p> <p>Embed mode of communication Increase vocabulary</p> <p>Embed Mode of communication</p>
<b><u>MN1B.a1</u></b>	Student matches sets of 2–4 objects <b>and/or</b> pictures to sets of objects with the equivalent number.
<b><u>MN1B.a2</u></b>	Student will create a fact family with sums equal to or less than 10 using numbers, objects, <b>and/or</b> pictures.
<b><u>MN1B.b</u></b>	Student subtracts single digit numbers.
<b><u>MN1B.b1</u></b>	Student subtracts single-digit numbers from double-digit numbers using a calculator.
<b><u>MN1B.b2</u></b>	Student subtracts single-digit numbers from double-digit numbers without the use of a calculator.
<b><u>MN1B.c</u></b>	Student adds double-digit numbers.
<b><u>MN1B.c1</u></b>	Student adds double-digit numbers using a calculator.
<b><u>MN1B.c2</u></b>	Student adds three or more numbers using a calculator.
<b><u>MN1B.d</u></b>	Student subtracts double-digit numbers and justifies answer.
<b><u>MN1B.e</u></b>	Student estimates sums and differences of whole numbers.
<b><u>MN1B.e1</u></b>	Student determines whether addition <b>or</b> subtraction has taken place by indicating when an object has been

	added to <b>or</b> removed from a set of 2–5 objects.
<b>MN1B.f</b>	Student identifies that 0.50 is equivalent to $\frac{1}{2}$ .
<b>MN1B.f1</b>	Student distinguishes between whole objects <b>and</b> their parts using models <b>or</b> pictures.
<b>MN1B.f2</b>	Student identifies <b>or</b> demonstrates that two halves, three thirds, <b>and</b> four fourths equal one whole.
<b>MN1B.g</b>	Student identifies and models representations of fractions with denominators of 2, 3, 4, 5, 6, 8, 10[SA2].
<b>MN1B.h</b>	Student models multiplication using arrays, equal-sized groups, area models, or equal –sized moves on the number line, etc.
<b>MN1B.h1</b>	Student multiplies single- <b>and</b> double-digit numbers using a calculator.
<b>MN1B.i</b>	Student uses symbols (+, =) and vocabulary (add, plus, sum, total) of addition and symbols (–, =) and vocabulary (subtract, minus, difference) of subtraction.
<b>MN1B.i1</b>	Student locates <b>and</b> uses the following symbols accurately on a calculator: +, –, X, <b>and</b> =.
<b>Cluster 1C. Money</b>	
<b>MN1C.a</b>	<p>Student identifies different coins and currency by name.</p> <p><del>Student sorts coins and bills by denomination.</del></p> <p><del>Student uses play money to demonstrate ability to identify coins and currency.</del></p> <p><del>Student plays money bingo.</del></p> <p><del>Student identifies value of coins and currency.</del></p> <p><del>Student matches coins to their value</del></p> <p><del>Given a coin or currency, student states the value</del></p> <p><del>Given a value, student points the coin or currency representing that value</del></p> <p><del>Student adds money amounts up to \$5.00.</del></p> <p><del>Use sales advertisements or catalogs to find 2 amounts and add them.</del></p> <p><del>Increase content vocabulary</del></p>
<b>MN1C.b</b>	Student identifies value of coins and currency.
<b>MN1C.c</b>	Student adds money amounts up to \$5.00.
<b>MN1C.c1</b>	Student adds the value of 2 or more coins up to \$1.

**MAAECF Mathematics – Grades 3 – 5**

**Algebra Strand**

MECF Mathematics Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <b>Possible classroom learning activities/resources</b> <b>Possible support skills to integrate with academic instruction</b>
<p><b>2. Explain, analyze, and generate patterns, relationships, and functions using numerals, symbols, words, and/or manipulatives.</b></p>	<p align="center"><b>Cluster 2A. Pattern Recognition</b></p>	
	<p><b>MA2A.a</b></p>	<p>Student matches a pattern of objects or pictures.</p> <p><del>Given a pattern of objects or pictures, student will choose the matching pattern from multiple choices</del></p> <p><del>Given a worksheet with different patterns, student will draw a line to the matching pattern</del></p> <p><del>Shown two patterns, student will indicate if the pattern is the same</del></p> <p><del>Student sorts objects into categories and identifies the rule for sorting (e.g., same color, same shape).</del></p> <p><del>Given a variety of animal pictures (objects, etc.) the student will sort based on an attribute and explain (fur vs. feather or two-footed vs. four-footed, etc)</del></p> <p><del>Given two different shapes in two different colors and sizes, student will sort into groups and identify “rule” (all circles and triangles, or all red and green, or all large and small, etc.)</del></p> <p><del>Student creates a variety of repeating patterns (e.g., auditory: tap, clap; tactile or visual: XOXO; AABBAABB; numeric:1,2,1,2).</del></p> <p><del>Student creates a simple color pattern (red, blue, red, blue).</del></p> <p><del>Given a variety of shapes, student creates a repeating shape pattern (triangle, square, circle, triangle, square, circle, etc.)</del></p> <p><del>Student uses number patterns to skip count by 2’s, 3’s, 5’s, and 10’s.</del></p> <p><del>Student uses hundreds chart and skip counts by marking every other number of the chart; by marking every 5<sup>th</sup> number, etc.</del></p> <p><del>Student skip counts by 2’s counting pennies, by 5’s counting nickels, and by 10’s using dimes.</del></p> <p><del>Student counts coins by using Touch Points and counting by 5’s</del></p> <p><del>Student models, identifies, and demonstrates inverse relationships between addition and subtraction.</del></p> <p><del>Given an addition problem, student will identify the subtraction problem that represents the inverse relationship and solve it.</del></p> <p><del>Given an addition problem, student will write the subtraction problem that represents the inverse relationship and solve it.</del></p> <p><del>Student will use addition to check the correctness of subtraction and vice versa.</del></p> <p><del>Student extends patterns of numbers or symbols and states the rule.</del></p> <p><del>Student uses a number line or hundreds chart to determine the pattern, state the rule and extend the pattern (1,4,7,10; rule is +3; extend with 13, 16, 19)</del></p> <p><del>Understanding same and different</del></p> <p><b>Number recognition</b></p> <p><b>Matching numbers</b></p> <p><b>Counting</b></p>

MAAECF Mathematics – Grades 3 – 5		
Algebra Strand		
MECF Mathematics Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <b>Possible classroom learning activities/resources</b> <b>Possible support skills to integrate with academic instruction</b>
		<b>Basic Addition</b>
	<b>MA2A.b</b>	<u>Student sorts objects into categories and identifies the rule for sorting (e.g., same color, same shape).</u>
	<b>MA2A.c</b>	<u>Student creates a variety of repeating patterns (e.g., auditory: tap, clap; tactile or visual: XOXO; AABBAABB; numeric:1, 2,1,2).</u>
	<b>MA2A.d</b>	<u>Student uses number patterns to skip count by 2's, 3's, 5's, and 10's.</u>
	<b>MA2A.e</b>	<u>Student models, identifies, and demonstrates inverse relationships between addition and subtraction.</u>
	<b>MA2A.f</b>	<u>Student extends patterns of numbers or symbols and states the rule.</u>

MAAECF Mathematics – Grades 3 – 5		
Geometry Strand		
MECF Mathematics Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <b>Possible classroom learning activities/resources</b> <b>Possible support skills to integrate with academic instruction</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>	<p>Student identifies basic 2-dimensional shapes (square, triangle, rectangle, circle)</p> <p><del>When given a shape, student states the name</del></p> <p><del>When given the name of a shape, student points to the correct shape</del></p> <p><del>Student plays shape bingo</del></p> <p><del>Student sorts basic 2-dimensional shapes into groups (circle, triangle, square, rectangle, rhombus, trapezoid) by number of sides.</del></p> <p><del>Given a table labeled with number of sides (3 sides, 4 sides, 5 sides, etc.) student places pictures of the shapes in the correct column of the table</del></p> <p><del>Students sort 2-dimensional shapes into groups and describes the characteristics</del></p> <p><del>Given a variety of shapes, student sorts the shapes into groups and explains their reasoning.</del></p> <p><del>Given a variety of shapes and a graphic organizer, student sorts shapes based on the organizer and identifies the characteristics from a choice (sorts objects according to color coded graphic organizer, then given the choices: objects sorted by color, shape or size, student identifies color)</del></p> <p><del>Increase content vocabulary</del></p> <p><del>Embed mode of communication</del></p> <p><del>Reach/grasp/release</del></p> <p><del>Match same/different</del></p>
	<b>MG3A.a1</b>	<u>Student matches three-dimensional figures to two-dimensional shapes <b>or</b> common objects.</u>

**MAAECF Mathematics – Grades 3 – 5**

**Geometry Strand**

MECF Mathematics Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <del>Possible classroom learning activities/resources</del> <del>Possible support skills to integrate with academic instruction</del>
	<b>MG3A.b</b>	<del>Student sorts basic 2-dimensional shapes into groups (circle, triangle, square, rectangle, rhombus, trapezoid) by number of sides.</del>
	<b>MG3A.c</b>	<del>Students sort 2-dimensional shapes into groups and describes the characteristics.</del>
	<b>Cluster 3B. Relational Concepts</b>	
	<b>MG3B.a</b>	Student uses positional words (in, above, below, over, under, beside) to describes the location of an object. <del>Student places an object (e.g., a ball) on, under, beside a table or other object.</del> <del>Student uses picture symbols representing positional words and points to the correct symbol as it relates to the position of an object.</del> Student uses positional words (in, above, below, over, under, beside, left, right) to describes the location of an object on a simple map. <del>Student describes where a specified person or thing is using a classroom map (e.g., Suzie is on my right)</del> <del>Increase content vocabulary</del>  Follow directions
	<b>MG3B.b</b>	<del>Student uses positional words (in, above, below, over, under, beside, left, right) to describes the location of an object on a simple map.</del>
	<b>Cluster 3C. Understanding Lines and Angles</b> <sub>[SA3]</sub>	
	<b>MG3C.a</b>	Student identifies parallel and intersecting lines and perpendicular lines. <del>Student identifies parallel and intersecting lines in everyday objects (e.g., train tracks, fence posts)</del> <del>Student identifies parallel and intersecting lines in letters and symbols.</del> <del>Student identifies a right angle, acute angle, and obtuse angle.</del> <del>Student uses a graphic organizer and sorts shapes as having right, acute, or obtuse angles.</del> <del>Increase content vocabulary</del>  Visual discrimination
	<b>MG3C.b</b>	<del>Student identifies a right angle, acute angle, and obtuse angle.</del>

MAAECF Mathematics – Grades 3 – 5		
Measurement Strand		
MECF Mathematics Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <b>Possible classroom learning activities/resources</b> <b>Possible support skills to integrate with academic instruction</b>
<b>4. Understand and use different forms and units of measurement in a variety of contexts.</b>	<b>Cluster 4A. Calendar and Time</b>	
	<b>MM4A.a</b>	<p>Student understands basic calendar use.</p> <p><del>Student identifies months of year and days of week.</del></p> <p><del>Student finds the day of the week based on the given date.</del></p> <p><del>Student identifies yesterday, today, and tomorrow on a calendar based on current date.</del></p> <p><del>Student tells time to the hour and ½ hour.</del></p> <p><del>Student moves the hands of a clock to represent hour/half hour time presented.</del></p> <p><del>Given a clock representation of a time to the hour or half hour, student identifies the correct written time from given choices</del></p> <p><del>Student tells time to the ¼ hour and 5 minute intervals.</del></p> <p><del>Student moves the hands of a clock to represent ¼ hour and 5 minute interval time presented.</del></p> <p><del>Given a clock representation of a time to the ¼ hour or 5 minute interval, student identifies the correct written time from given choices</del></p> <p>Number recognition</p> <p>Skip counting</p> <p>Schedule use</p> <p><del>Embed mode of communication</del></p>
	<b>MM4A.b</b>	<del>Student tells time to the hour and ½ hour.</del>
	<b>MM4A.c</b>	<del>Student tells time to the ¼ hour and 5 minute intervals.</del>
	<b>Cluster 4B. Weight and Length</b>	
	<b>MM4B.a</b>	<p>Student distinguishes between concepts of more or less in an appropriate context.</p> <p><del>Given a graphic organizer labeled with the picture symbols of more and less, student sorts sets of objects as more/less, given two sets at a time.</del></p> <p><del>Given a situation, student determines if they need more or less based on the situation (e.g., student passes out supplies and determines if they need more or less pencils to assure everyone has one)</del></p> <p><del>Student sorts and classifies objects based on size, length, or weight.</del></p> <p><del>Student uses EdMark Milkey &amp; Bailey math program to distinguish sizes.</del></p> <p><del>Student can arrange a variety of objects based on their size (tallest/longest to shortest)</del></p> <p><del>Student can arrange a variety of objects based on weight (heaviest to lightest)</del></p> <p><del>Student can sort objects as taller/shorter, heavier/lighter into labeled baskets, graphic organizer, etc. when presented two at a time.</del></p> <p><del>Student selects appropriate tools and units to accurately measure in a given situation.</del></p> <p><del>Given a specified task, student will choose the tool and unit to complete the task (e.g., Measure how tall your</del></p>

MAAECF Mathematics – Grades 3 – 5		
Measurement Strand		
MECF Mathematics Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <del>Possible classroom learning activities/resources</del> <del>Possible support skills to integrate with academic instruction</del>
		<del>teacher is; measure the length of your pencil)</del> <del>Student selects the appropriate tool and units to measure water needed to make lemonade, given choices (e.g., a liquid measuring cup, a gallon jar, and tablespoon).</del> <del>Student measures with a ruler, tape measure, or yardstick.</del> <del>Students measure each others height.</del> <del>Student measures a variety of objects in the classroom.</del> <del>Identify numbers</del>  <del>Embed mode of communication</del>  <del>Follow Directions</del>  <del>Increase content vocabulary</del>  <del>Make choices</del>
	<b>MM4B.b</b>	<u>Student sorts and classifies objects based on size, length, or weight.</u>
	<b>MM4B.c</b>	<u>Student selects appropriate tools and units to accurately measure in a given situation.</u>
	<b><u>MM4B.c1</u></b>	<u>Student uses nonstandard units (e.g., paper clips, unifix cubes, paper cutouts, etc.) <b>and</b> standard units (e.g., inches, centimeters) to measure length.</u>
	<b><u>MM4B.c2</u></b>	<u>Student compares weight <b>and/or</b> mass of objects using a balance scale with <b>and</b> without nonstandard units.</u>
	<b>MM4B.d</b>	<u>Student measures with a ruler, tape measure, or yardstick.</u>

MAAECF Mathematics – Grades 3 – 5		
Data Analysis and Probability Strand		
MECF Mathematics Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <del>Possible classroom learning activities/resources</del> <del>Possible support skills to integrate with academic instruction</del>
<b>5. Collect and report data. Read and understand basic charts, graphs, and</b>	<b>Cluster 5 A. Collecting and Reporting Data</b>	
	<b>MD5A.a</b>	<del>Student creates a table, tally, chart, pictograph, or bar graph to report findings.</del> <del>Student creates a pictograph (e.g., using pictures of suns, clouds, rain) to label and then report the weather data collected over a period of time (week, month, etc.).</del> <del>Student conducts a survey and uses a tally chart to record responses</del> <del>Student creates a bar graph based on data collected (number of different color M&amp;Ms found in a bag, number of people who prefer cheese pizza or pepperoni pizza, etc.)</del>

**MAAECF Mathematics – Grades 3 – 5**

**Data Analysis and Probability Strand**

MECF Mathematics Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <b>Possible classroom learning activities/resources</b> <b>Possible support skills to integrate with academic instruction</b>
<b>tables.</b>		<p><del>Student interprets and compares data represented in a graph, table or chart.</del>  <del>Student answers yes/no questions based on data presented in a graph.</del>  <del>Student answers fill in the blank questions based on data presented in a chart.</del>  <del>Student makes a prediction, answers a question, or solves a problem using data from a table, tally, chart, pictograph, line graph, or bar graph.</del>  <del>Student uses data table or tally chart to answer questions about favorite foods or pets of peers.</del>  <del>Student makes a prediction about typical weather of MS in a given month using data from prior year by selecting picture.</del>  <del>Student uses data collected in a science investigation to answer questions about results.</del>  <del>Embed mode of communication</del></p> <p><del>Basic counting</del></p> <p><del>Sorting/classifying</del></p>
	<b><u>MD5A.a1</u></b>	<u>Student identifies the title <b>and</b> the labels on a given graph <b>and</b> a table/chart.</u>
	<b><u>MD5A.b</u></b>	<u>Student interprets and compares data represented in a graph, table or chart.</u>
	<b><u>MD5A.c</u></b>	<u>Student makes a prediction, answers a question, or solves a problem using data from a table, tally, chart, pictograph, line graph, or bar graph.</u>

# SCIENCE

## EXTENDED CURRICULUM FRAMEWORKS

### 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 and other objects in space.**

Cluster 2A Planets

Cluster 2B Earth's Structure

**Competency 3: Identify and describe weather and weather patterns.**

Cluster 3A Weather

#### **Life Science Strand**

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

Cluster 4A Plants and Animals

Cluster 4B Environmental Factors

**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 3 – 5**

**Inquiry Strand**

MECF Science Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <del>Possible classroom learning activities/resources</del> <del>Possible support skills to integrate with academic instruction</del>
<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>	<p>Student recognizes safety rules for science experiment and/or laboratory (e.g., wear goggles, wash hands after handling materials, do not taste unknown materials)</p> <p><del>Student gestures (yes/no) when asked or shown, "is this a safe way to work with materials?"</del></p> <p><del>Student sorts pictures into ☺ or ☹ piles to show safe or not safe practices</del></p> <p><del>Student selects pictures that show safe or not safe practices</del></p> <p><del>Have student model appropriate safety.</del></p> <p><del>Student follows a set of simple procedures to answer a testable question (e.g., which car will go faster?)</del></p> <p><del>Labeled photo series of student following simple steps to measure, record, test objects, etc.</del></p> <p><del>Show a student a simple science experiment and ask him/her to repeat procedure</del></p> <p><del>Student collects and records data as part of an experiment (e.g., tally, draw/select and label, measure length, weigh mass, calculate density)</del></p> <p><del>Student uses stamp to mark table with tally.</del></p> <p><del>Student works with lab partner to collect and record data</del></p> <p><del>Embed mode of communication</del></p> <p><del>Follow directions</del></p> <p><del>Apply rules</del></p> <p><del>Motor skills</del></p> <p><del>Reach, grasp, and release</del></p> <p><del>Cross midline</del></p> <p><del>Basic counting</del></p> <p><del>Organizing</del></p>
	<b>SI1A.b</b>	<del>Student follows a set of simple procedures to answer a testable question (e.g., which car will go faster?)</del>
	<b>SI1A.c</b>	<del>Student collects and records data as part of an experiment (e.g., tally, draw/select and label, measure length, weigh mass, calculate density)</del>
	<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.	

**MAAECF Science – Grades 3 – 5**

**Inquiry Strand**

MECF Science Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <del>Possible classroom learning activities/resources</del> <del>Possible support skills to integrate with academic instruction</del>
		<del>Student gestures which items are soft/hard, etc.</del> <del>Student uses Boardmaker pictures with appropriate terms to describe features</del> <del>Student predicts outcomes based on observations or previous experience.</del> <del>Student selects picture of expected outcome after exploration with materials</del> <del>Student draws picture of predicted outcome</del> <del>Student interprets data collected as part of an experiment (e.g., makes an accurate statement based on data; identifies a trend or result)</del> <del>Student uses a switch to answer yes/no or true/false to statements provided about data or results</del> <del>Using "Boardmaker," create pictures to Velcro to a felt board.</del> <del>Watch a science experiment/video and have student describe what he or she observes.</del> <del>Sorting/classifying</del>  <del>Visual discrimination</del>  <del>Tolerate touching different textures</del>
	<b>SI1B.b</b>	<del>Student predicts outcomes based on observations or previous experience.</del>
	<b>SI1B.c</b>	<del>Student interprets data collected as part of an experiment (e.g., makes an accurate statement based on data; identifies a trend or result).</del>
<b>1. Use tools and instruments to plan, conduct, and evaluate simple science experiments. (continued)</b>	<b>Cluster 1C. Communicates Findings</b>	
	<b>SI1C.a</b>	Student communicates understanding of concepts or results by choosing correct or appropriate outcome/summary <del>Student uses a switch to answer yes/no or true/false to statements provided</del> <del>Student uses graphic organizer and objects or pictures to show results</del> <del>Student develops a graph, chart, or other visual representation (e.g., labeled drawing, diagram, model) to communicate the results on an investigation.</del> <del>Student creates a pictograph (e.g., using pictures of suns, clouds, rain) to label and then report the weather data collected over a period of time (week, month, etc.).</del> <del>Student creates a bar graph based on data (e.g., numbers counted)</del> <del>Student uses multiple sources of information (print and/or other media) to answer science-related questions.</del> <del>Student uses pictures, objects, or words to complete a graphic organizer to plan a report</del> <del>Student uses an augmentative communication device to convey an idea on a topic</del> <del>Student uses computer or new media to answer questions</del> <del>Student uses science vocabulary from instruction to ask questions, connect predictions to explanations, and communicate ideas</del> <del>Student chooses picture symbols to describe a science field trip.</del>

MAAECF Science – Grades 3 – 5		
Inquiry Strand		
MECF Science Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <del>Possible classroom learning activities/resources</del> <del>Possible support skills to integrate with academic instruction</del>
		<del>Using “Boardmaker,” create pictures to Velcro to a felt board.</del> <del>Embed mode of communication</del>  <del>Increase content vocabulary</del>  <del>Organizing</del>  <del>Follow directions</del>
	<b>SI1C.b</b>	<del>Student develops a graph, chart, or other visual representation (e.g., labeled drawing, diagram, model) to communicate the results on an investigation.</del>
	<b>SI1C.c</b>	<del>Student uses multiple sources of information (print and/or other media) to answer science-related questions.</del>
	<b>SI1C.d</b>	<del>Student uses science vocabulary from instruction to ask questions, connect predictions to explanations, and communicate ideas</del>

MAAECF Science – Grades 3 – 5		
Earth & Space Science Strand		
MECF Science Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <del>Possible classroom learning activities/resources</del> <del>Possible support skills to integrate with academic instruction</del>
<b>2. Identify and describe features of the Earth and other objects in space.</b>	<b>Cluster 2A. Planets</b>	
	<b>SE2A.a</b>	<del>Student identifies the sun as a star and Earth as a planet.</del> <del>Student uses art materials (e.g., clay, Styrofoam balls) to make models or mobiles of Earth-sun system</del> <del>Student identifies pictures of the sun and Earth.</del> <del>Student identifies a globe as a model of the earth.</del> <del>Student observes and identifies objects in the sky (e.g., clouds, stars, sun, planets, moon).</del> <del>Student records objects in the sky using picture symbols</del> <del>Student classifies heavenly objects seen in the day and nighttime skies.</del> <del>Student sorts pictures into seen at night and seen in daytime</del> <del>Student uses Boardmaker pictures to make poster of day and nighttime skies</del> <del>Student identifies planets other than Earth.</del> <del>Student matches pictures to Earth or other planets.</del> <del>Student uses a model to show Earth’s rotation on its axis and to show day and night.</del>

**MAAECF Science – Grades 3 – 5**

**Earth & Space Science Strand**

MECF Science Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <del>Possible classroom learning activities/resources</del> <del>Possible support skills to integrate with academic instruction</del>
		<p><del>Using a globe, student demonstrates how Earth moves on axis, pointing to which side has day and which has night</del></p> <p><del>Using a flashlight and a globe, student models how the earth's rotation causes day and night.</del></p> <p><del>Student uses a model to show Earth's revolution around the sun and to show to show a year.</del></p> <p><del>Using a globe, student demonstrates how Earth moves around sun</del></p> <p><del>Video of student playing role of sun and then of how Earth moves around sun</del></p> <p><del>Student distinguishes between heavenly bodies that radiate light (sun, stars) and those that reflect light (moon, planets)</del></p> <p><del>Given two boxes, student will put _____ in one box and _____ in another box.</del></p> <p><del>Motor skills</del></p> <p><del>Increase content vocabulary</del></p>
	<b>SE2A.b</b>	<del>Student observes and identifies objects in the sky (e.g., clouds, stars, sun, planets, moon).</del>
	<b>SE2A.c</b>	<del>Student classifies heavenly objects seen in the day and nighttime skies.</del>
	<b>SE2A.d</b>	<del>Student identifies planets other than Earth.</del>
	<b>SE2A.e</b>	<del>Student uses a model to show Earth's rotation on its axis and to show day and night.</del>
	<b>SE2A.f</b>	<del>Student uses a model to show Earth's revolution around the sun and to show to show a year.</del>
	<b>SE2A.g</b>	<del>Student distinguishes between heavenly bodies that radiate light (sun, stars) and those that reflect light (moon, planets).</del>
<b>2. Identify and describe features of the Earth and other objects in space.</b>	<b>Cluster 2B. Earth's Structure</b>	<p><b>SE2B.a</b> Student identifies the three major layers of the Earth (crust, mantle, core) using a model or diagram.</p> <p><del>Student uses simple model of Earth's layers to label them</del></p> <p><del>Student uses various fruits to show 3 layers (peel=crust; meat=mantel; seed = core)</del></p> <p><del>Student makes relief map using library resources and clay</del></p> <p><del>Student sorts and classifies rocks and minerals by physical features</del></p> <p><del>Given two boxes, student will put _____ in one box and _____ in another box.</del></p> <p><del>Student identifies and compares various land forms (mountain, delta, valley, plateau, plains)</del></p> <p><del>Student makes and labels relief map using library resources and clay</del></p> <p><del>Student identifies and compares various bodies of water (lake, river, stream, ocean, fresh and salt water)</del></p> <p><del>Student makes and labels relief map with different bodies of water using library resources</del></p> <p><del>Tolerate touching different textures</del></p> <p><del>Motor skills</del></p> <p><del>Increase content vocabulary</del></p>

MAAECF Science – Grades 3 – 5		
Earth & Space Science Strand		
MECF Science Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <del>Possible classroom learning activities/resources</del> <del>Possible support skills to integrate with academic instruction</del>
	<b>SE2B.b</b>	<u>Student sorts and classifies rocks and minerals by physical features.</u>
	<b>SE2B.c</b>	<u>Student identifies and compares various land forms (mountain, delta, valley, plateau, plains).</u>
	<b>SE2B.d</b>	<u>Student identifies and compares various bodies of water (lake, river, stream, ocean, fresh and salt water).</u>
<b>3. Identify and describe weather and weather patterns.</b>	<b>Cluster 3A. Weather</b>	
	<b>SE3A.a</b>	<del>Students compare and contrast the seasons. Student matches pictures of clothing with different seasonal views Student distinguishes between and among different forms of precipitation (e.g., rain, snow, sleet, hail). Student uses a switch to answer yes/no or true/false to statements provided about each precipitation type. Student makes weather instruments in order to observe and describe how they work (e.g., barometer, wind vane, thermometer, rain gauge). Student observes and describes what happens when simple thermometer is put into refrigerator (red liquid goes down) and then in sunny window sill (red liquid goes up). Student identifies different instruments used to collect weather data (thermometer, wind vane, and rain gauge) and uses them to record weather conditions over time. Teacher demonstrates use of instruments and student repeats use to practice collecting and recording data— student is then asked, “which instrument did we use to ____?” Student uses a variety of media to locate weather information and weather patterns. Collect and “read” symbols on state/local weather maps to identify patterns during different times of the year Student compares Mississippi weather with weather of other regions of the country. Student selects a state to compare data with MS data (e.g., compare two places on US weather map; email relative in other part of country to ask about weather there and compare to MS)</del>
	<b>SE3A.b</b>	<u>Student distinguishes between and among different forms of precipitation (e.g., rain, snow, sleet, hail).</u>
	<b>SE3A.c</b>	<u>Student makes weather instruments in order to observe and describe how they work (e.g., barometer, wind vane, thermometer, rain gauge).</u>
	<b>SE3A.d</b>	<u>Student identifies different instruments used to collect weather data (thermometer, wind vane, and rain gauge) and uses them to record weather conditions over time.</u>
	<b>SE3A.e</b>	<u>Student uses a variety of media to locate weather information and weather patterns.</u>
	<b>SE3A.f</b>	<u>Student compares Mississippi weather with weather of other regions of the country.</u>

**MAAECF Science – Grades 3 – 5**

**Life Science Strand**

MECF Science Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <b>Possible classroom learning activities/resources</b> <b>Possible support skills to integrate with academic instruction</b>
<p><b>4. Identify and describe animals and plants and their environments.</b></p>	<p><b>Cluster 4A. Plants and Animals</b></p>	
	<p><b>SL4A.a</b></p>	<p>Student classifies living and non-living entities.  <del>Student finds pictures and constructs 2 mobiles — one of living/one of nonliving things</del>  <del>Student recognizes that the Sun is the major source of the Earth's energy.</del>  <del>Student uses a switch to answer yes/no or true/false to statements provided</del>  <del>Student identifies the parts of a plant (i.e., stem, root, leaves, seeds, flowers).</del>  <del>Student matches parts of real plants to a labeled diagram</del>  <del>Student groups plants by common observable features (e.g., color, size, habitat)</del>  <del>Given two boxes, student will put _____ in one box and _____ in another box.</del>  <del>Student groups animals by common observable features (e.g., color, size, habitat)</del>  <del>Given two boxes, student will put _____ in one box and _____ in another box.</del>  <del>Student classifies plants using given scientific criteria (e.g., with and without seeds; flowering and non-flowering, coniferous and deciduous trees; compound/simple leaves)</del>  <del>Student uses library and Internet resources to locate examples to make bulletin board display</del>  <del>Student uses a school/community field trip to find examples of coniferous and deciduous tree or simple/compound leaves for a plant scrapbook</del>  <del>Student classifies animals using given scientific criteria (e.g., vertebrates — invertebrates; fish/bird/amphibian, reptile, mammal)</del>  <del>Use library and Internet resources to look up and complete T-chart or table with examples</del>  <del>Use field trip to find and photograph examples of each vertebrate/invertebrate to be charted</del>  <del>Student sequences life stages of plants or animals and compare the life stages of different organisms.</del>  <del>Use photos of lab experiment to grow plants from seeds to sequence stages</del>  <del>Use photos of family members</del>  <del>Student identifies basic needs of plants and animals (i.e., water, food, air, and shelter)</del>  <del>Student uses a switch to answer yes/no or true/false to statements about what living things need</del>  <del>Care for living organisms over time and use “daily jobs” to list what they need.</del>  <del>Select pictures of plants and animals showing which did/did not get what they need</del>  <del>Student develops a food chain using pictures or other media.</del>  <del>Starting with a picture of a food eaten by students, make a food chain to trace its path</del>  <del>Use visuals to build variety of food chains, all having sun and plants at the start</del>  <del>Student uses a food chain model to identify organisms and their roles (producers make food, consumers eat food, and decomposers break down matter)</del>  <del>Student uses BINGO game to match roles with organisms</del>  <del>Embed mode of communication</del></p> <p><b>Following directions</b></p>

**MAAECF Science – Grades 3 – 5**

**Life Science Strand**

MECF Science Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <del>Possible classroom learning activities/resources</del> <del>Possible support skills to integrate with academic instruction</del>
		<p><del>Motor skills</del></p> <p><del>Reach, grasp, and release</del></p> <p><del>Cross midline</del></p> <p><del>Basic counting</del></p> <p><del>Sorting/classifying</del></p> <p><del>Visual discrimination</del></p> <p><del>Sorting/classifying</del></p> <p><del>Sequencing</del></p>
	<b>SL4A.b</b>	<del>Student recognizes that the Sun is the major source of the Earth's energy.</del>
	<b>SL4A.c</b>	<del>Student identifies the parts of a plant (i.e., stem, root, leaves, seeds, flowers).</del>
	<b>SL4A.d</b>	<del>Student groups plants by common observable features (e.g., color, size, habitat).</del>
	<b>SL4A.e</b>	<del>Student groups animals by common observable features (e.g., color, size, habitat).</del>
	<b>SL4A.f</b>	<del>Student classifies plants using given scientific criteria (e.g., with and without seeds; flowering and non-flowering, coniferous and deciduous trees; compound/simple leaves).</del>
	<b>SL4A.g</b>	<del>Student classifies animals using given scientific criteria (e.g., vertebrates – invertebrates; fish/bird/amphibian, reptile, mammal).</del>
	<b>SL4A.h</b>	<del>Student sequences life stages of plants or animals and compare the life stages of different organisms.</del>
	<b>SL4A.i</b>	<del>Student identifies basic needs of plants and animals (i.e., water, food, air, and shelter)</del>
	<b>SL4A.j</b>	<del>Student develops a food chain using pictures or other media.</del>
	<b>SL4A.k</b>	<del>Student uses a food chain model to identify organisms and their roles (producers make food, consumers eat food, and decomposers break down matter)</del>
<b>4. Identify and describe animals and plants and</b>	<b>Cluster 4B. Environmental Factors</b>	
	<b>SL4B.a</b>	<p>Student identifies ways the environment is affected by natural events (i.e., floods, fires, drought, hurricanes).</p> <p><del>Student selects pictures that show results of floods, fires, drought, hurricanes</del></p> <p><del>Student explains why recycling is important.</del></p> <p><del>Student selects pictures that show results of recycling (e.g., metal cans melted to make other objects) or not</del></p>

**MAAECF Science – Grades 3 – 5**

**Life Science Strand**

MECF Science Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <b>Possible classroom learning activities/resources</b> <b>Possible support skills to integrate with academic instruction</b>		
<b>their environments.</b> (continued)		<del>recycling (e.g., litter, piles of garbage in landfill)</del> <del>Student classifies objects as recyclables or trash.</del> <del>Given two boxes, student will put _____ in one box and _____ in another box.</del> <del>Using a recycling bin and trash bin in classroom or school, student identifies and lists objects that can be used again/not used again</del> <del>Student identifies reasons that animals or plants might become endangered (e.g., loss of habitat, over hunting or fishing, pollution, climate change, over populating)</del> <del>Student crosses out pictures on a chart that are not reasons that animals might become endangered.</del> <del>Sorting/classifying</del>  <del>Visual discrimination</del>		
	SL4B.b	<del>Student explains why recycling is important.</del>		
	SL4B.c	<del>Student classifies objects as recyclables or trash.</del>		
	SL4B.d	<del>Student identifies reasons that animals or plants might become endangered (e.g., loss of habitat, over hunting or fishing, pollution, climate change, over populating)</del>		
<b>5. Identify and describe structures of living systems and their functions.</b>	<b>Cluster 5A. Structures of Living Systems</b>			
	SL5A.a	<del>Student identifies the 5 senses.</del> <del>Point to body parts as directed by teacher</del> <del>Student points to the picture that represents each sensory organ (e.g. nose for smelling).</del> <del>Student matches the body systems (skeletal, respiratory, digestive, circulatory, and excretory) with various functions within the body.</del> <del>Student plays game to match functions with systems</del> <del>Student identifies or matches organs (e.g., heart, lungs, bones/skull, tongue, stomach, intestines, kidneys) with appropriate body system</del> <del>Student's body is traced to make shape and pictures of body parts are added to show where they are located</del> <del>Student identifies body organs (e.g., heart, lungs, stomach, eyes, ears, mouth, tongue, esophagus, intestines, kidneys, bones).</del>  <del>Student identifies the functions of organs (e.g., heart, lungs, stomach, eyes, ears, mouth, tongue, esophagus, intestines, kidneys, bones).</del>		<del>Embed mode of communication</del>  <del>Increase content vocabulary</del>
	SL5A.b	<del>Student matches the body systems (skeletal, respiratory, digestive, circulatory, and excretory) with various functions within the body.</del>		
	SL5A.c	<del>Student identifies or matches organs (e.g., heart, lungs, bones/skull, tongue, stomach, intestines, kidneys) with appropriate body system</del>		

MAAECF Science – Grades 3 – 5		
Life Science Strand		
MECF Science Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <b>Possible classroom learning activities/resources</b> <b>Possible support skills to integrate with academic instruction</b>
	<b>SL5A. c1</b>	<u>Student identifies body organs (e.g., heart, lungs, stomach, eyes, ears, mouth, tongue, esophagus, intestines, kidneys, bones).</u>
<b>5. Identify and describe structures of living systems and their functions.</b>	<b>SL5A.c2</b>	<u>Student identifies the functions of organs (e.g., heart, lungs, stomach, eyes, ears, mouth, tongue, esophagus, intestines, kidneys, bones).</u>

MAAECF Science – Grades 3 – 5		
Physical Science Strand		
MECF Science Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <b>Possible classroom learning activities/resources</b> <b>Possible support skills to integrate with academic instruction</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>	<p>Students predict and test predictions about whether objects will sink or float in water.</p> <p><del>Student first predicts and then tests and charts which items float or sink.</del></p> <p><del>Student summarizes results of predictions and testing using table or bar graph</del></p> <p><del>Students recognize that all things are made up of matter</del></p> <p><del>Student weighs solids, liquids, and gases (e.g., air in balloon) to show that all are made of matter</del></p> <p><del>Student uses a switch to answer yes/no or true/false to statements provided</del></p> <p><del>Students classify objects and materials as gases, solids, or liquids.</del></p> <p><del>Student observes ice melting to become liquid water, and then heated to become steam and identifies the three stages of water.</del></p> <p><del>Student charts common household objects as S-L-G.</del></p> <p><del>Student identifies activities that involve physical or chemical changes in substances (e.g., physical: squashing, cutting, sharpening, stretching, evaporating; chemical: baking, cooking, burning, rusting)</del></p> <p><del>Students cook simple foods to show how they change due to chemical change; students also cut, break,</del></p>

**MAAECF Science – Grades 3 – 5**

**Physical Science Strand**

MECF Science Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <del>Possible classroom learning activities/resources</del> <del>Possible support skills to integrate with academic instruction</del>
		<del>and stretch foods to show physical changes</del> <del>Embed mode of communication</del>  <del>Following directions</del>  <del>Motor skills</del>  <del>Reach, grasp, and release</del>  <del>Cross midline</del>  <del>Basic counting</del>
	<b>SP6A.b</b>	<del>Students recognize that all things are made up of matter.</del>
	<b>SP6A.c</b>	<del>Students classify objects and materials as gases, solids, or liquids.</del>
	<b>SP6A.d</b>	<del>Student identifies activities that involve physical or chemical changes in substances (e.g., physical: squashing, cutting, sharpening, stretching, evaporating; chemical: baking, cooking, burning, rusting).</del>
	<b>Cluster 6B Force and Motion</b>	
	<b>SP6B.a</b>	<del>Student identifies activities using force to push or pull objects (e.g., push swing or door, pull door or shade down).</del> <del>Student locates examples of push-pull on a school scavenger hunt.</del> <del>Student identifies simple machines in their environment (e.g., lever, pulley, wheel and axle).</del> <del>Student matches picture of common object with each simple machine (e.g., Lever— handles; Pulleys— Paper towel holder, etc.)</del> <del>Student constructs and uses simple machines</del> <del>Student explores, measures, and records the motion of an object</del> <del>Student works with partner to measure and record how far an objects travels when the ramp height changes</del> <del>Sorting/classifying</del>  <del>Visual discrimination</del>
	<b>SP6B.b</b>	<del>Student identifies simple machines in their environment (e.g., lever, pulley, wheel and axle).</del>
	<b>SP6B.c</b>	<del>Student explores, measures, and records the motion of an object.</del>
<b>6. Demonstrate</b>	<b>Cluster 6C Forms of Energy</b>	
	<b>SP6C.a</b>	Student identifies and groups objects that will be attracted/not attracted by a magnet.

**MAAECF Science – Grades 3 – 5**

**Physical Science Strand**

MECF Science Competencies	Rating scale item #	MECF Objectives/Rating Scale Items <b>Possible classroom learning activities/resources</b> <b>Possible support skills to integrate with academic instruction</b>
<b>an understanding of basic concepts regarding matter, motion, and energy.</b> (continued)		<p><del>Student uses a switch to answer yes/no or true/false to statements provided</del></p> <p><del>Student identifies uses of electricity/electrical energy in their environment.</del></p> <p><del>Student creates a pictograph (e.g., using pictures of suns, clouds, rain) to label and then report the weather data collected over a period of time (week, month, etc.).</del></p> <p><del>Student creates a bar graph based on data (e.g., numbers counted)</del></p> <p><del>Student identifies different forms of energy (e.g., sound coming from musical instrument, light from flashlight or sun, heat from hairdryer or sun, electricity)</del></p> <p><del>Student uses pictures, objects, or words to complete a graphic organizer to plan a report</del></p> <p><del>Student uses an augmentative communication device to convey an idea on a topic</del></p> <p><del>Student identifies examples of kinetic and potential forms of energy</del></p> <p><del>Student uses object (e.g., toy car or ball on ramp) to show potential (not moving) and kinetic energy (moving)</del></p> <p><del>Student chooses and sorts picture symbols of objects at rest (potential) and moving (kinetic) energy</del></p> <p><del>Student creates a simple circuit (using battery, insulated wire, and light or bell) to light a light or ring a bell.</del></p> <p><del>Student activates switch to indicate when circuit is completed</del></p> <p><del>Labeled photo series of student placing materials in order to make circuit</del></p> <p><del>Embed mode of communication</del></p> <p><b>Increase content vocabulary</b></p>
	<b>SP6C.b</b>	<u>Student identifies uses of electricity/electrical energy in their environment.</u>
	<b>SP6C.c</b>	<u>Student identifies different forms of energy (e.g., sound coming from musical instrument, light from flashlight or sun, heat from hairdryer or sun, electricity).</u>
	<b>SP6C.d</b>	<u>Student identifies examples of kinetic and potential forms of energy.</u>
	<b>SP6C.e</b>	<u>Student creates a simple circuit (using battery, insulated wire, and light or bell) to light a light or ring a bell.</u>

## 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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## 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/ATAadaptBks.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	 <p>Romeo and Juliet danced and talked.</p>	<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		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	 <p>Romeo and Juliet fell in love.</p>	<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