

**Correlation of**  
***Seeds of Science/Roots of Reading***<sup>®</sup>  
**Integrated Science and Literacy Units**

**Planets & Moons**  
**Aquatic Ecosystems**  
**Models of Matter**  
**Chemical Changes**

**with the State of Michigan**  
**English Language Arts Education Standards**  
**for Grades 4 and 5**  
Created April 2008



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	Aquatic Ecosystems	Planets & Moons	Models of Matter	Chemical Changes
<b>4<sup>th</sup> grade ELA Standards</b>				
<b>READING- Word Recognition and Word Study</b>				
<b>Word Recognition</b>				
R.WS.04.01 explain how to use word structure, sentence structure, and prediction to aid in decoding words and understanding the meanings of words encountered in context.	• •	• •	• •	• •
R.WS.04.02 use structural, syntactic, and semantic cues including letter-sound, rimes, base words, affixes, and syllabication to automatically read frequently encountered words, decode unknown words, and decide meanings including multiple meaning words.				
R.WS.04.03 automatically recognize frequently encountered words in print with the number of words that can be read fluently increasing steadily across the school year.				
R.WS.04.04 know the meanings of words encountered frequently in grade-level reading and oral language contexts.	• •	• •	• •	• •
R.WS.04.05 acquire and apply strategies to identify unknown words or word parts; self-monitor, and construct meaning by engaging actively in reading a variety of genre, self-correcting, and using a thesaurus.				
<b>Fluency</b>				
R.WS.04.06 fluently read beginning grade-level text and increasingly demanding text as the year proceeds.	•	•	•	•
<b>Vocabulary</b>				
R.WS.04.07 in context, determine the meaning of words and phrases including similes, metaphors, content vocabulary, and literary terms using strategies and resources including context clues, semantic feature analysis, and a thesaurus.				

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<b>4<sup>th</sup> grade ELA Standards</b>				
<b>READING- Narrative Text</b>				
R.NT.04.01 describe the shared human experience depicted in classic, multicultural, and contemporary literature recognized for quality and literary merit.				
R.NT.04.02 identify and describe the structure, elements, and purpose of a variety of narrative genre including poetry, myths, legends, fantasy, and adventure.				
R.NT.04.03 analyze characters' thoughts and motivation through dialogue, various character roles, and functions including hero, anti-hero, or narrator; know first person point of view and identify conflict and resolution.				
R.NT.04.04 explain how authors use literary devices including flash-forward and flashback to depict time, setting, conflicts, and resolutions to enhance the plot and create suspense.				
<b>READING- Informational Text</b>				
R.IT.04.01 identify and describe the structure, elements, features, and purpose of a variety of informational genre including autobiography/biography, personal essay, almanac, and newspaper.	• •	• •	• •	• •
R.IT.04.02 identify and describe informational text patterns including compare/contrast, cause/effect, and problem/solution.	• •	• •	• •	• •
R.IT.04.03 explain how authors use text features including appendices, headings, subheadings, marginal notes, keys and legends, figures, and bibliographies to enhance the understanding of key and supporting ideas.	• • •	• • •	• • •	• • •
<b>READING- Comprehension</b>				
R.CM.04.01 connect personal knowledge, experiences, and understanding of the world to themes and perspectives in text through oral and written responses.	• •	• •	• • •	• •
R.CM.04.02 retell through concise summarization grade-level narrative and informational text.	• •	• •	• •	• •

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<b>4<sup>th</sup> grade ELA Standards</b>				
<b>READING- Comprehension, continued</b>				
R.CM.04.03 explain relationships among themes, ideas, and characters within and across texts to create a deeper understanding by categorizing and classifying, comparing and contrasting, or drawing parallels across time and culture.	• •	• •	• •	• •
R.CM.04.04 apply significant knowledge from grade-level science, social studies, and mathematics texts.	• • •	• • •	• • •	• • •
<b>READING- Metacognition</b>				
R.MT.04.01 self-monitor comprehension when reading or listening to text by automatically applying and discussing the strategies used by mature readers to increase comprehension including: predicting, constructing mental images, visually representing ideas in text, questioning, rereading or listening again if uncertain about meaning, inferring, summarizing, and engaging in interpretive discussions.	• • •	• • •	• • •	• • •
R.MT.04.02 plan, monitor, regulate, and evaluate skills, strategies, and processes to construct and convey meaning (e.g., decoding unknown words) and use graphic organizers to deepen their understanding of compare/contrast, and sequential organizational patterns.	• • •	• • •	• • •	• • •
<b>READING- Critical Standards</b>				
R.CS.04.01 develop, discuss, and apply individual and shared standards using student/class created rubrics and begin to assess the quality, accuracy, and relevance of their own writing and the writing of others.				
<b>READING- Reading Attitude</b>				
R.AT.04.01 be enthusiastic about reading and do substantial reading and writing on their own.	• •	• •	• •	• •

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<b>4<sup>th</sup> grade ELA Standards</b>				
<b>WRITING- Writing Genre</b>				
W.GN.04.01 write a cohesive narrative piece such as a myth, legend, fantasy, or adventure creating relationships among setting, characters, theme, and plot.				
W.GN.04.02 write poetry based on reading a wide variety of grade-appropriate poetry.				
W.GN.04.03 write an informational comparative piece that demonstrates understanding of central and supporting ideas using an effective organizational pattern (e.g., compare/contrast) and informational text features.	• • •	• • •	• • •	• • •
W.GN.04.04 use the writing process to produce and present a research project using a teacher-approved topic; find and narrow research questions; use a variety of resources; take notes; and organize relevant information to draw conclusions.	• • •			• • •
<b>WRITING- Writing Process</b>				
W.PR.04.01 set a purpose, consider audience, and replicate authors' styles and patterns when writing a narrative or informational piece.	• •	• •	• •	• •
W.PR.04.02 apply a variety of pre-writing strategies for both narrative and informational writing (e.g., graphic organizers such as maps, webs, Venn diagrams) in order to generate, sequence, and structure ideas	• • •	• • •	• • •	• • •
W.PR.04.03 draft focused ideas using a variety of drafting techniques composing coherent and mechanically sound paragraphs when writing compositions.	• •	• •	• •	• •
W.PR.04.04 revise drafts based on constructive and specific oral and written responses to writing by identifying sections of the piece to improve sequence and flow of ideas	•	•	•	•
W.PR.04.05 proofread and edit writing using appropriate resources (e.g., dictionary, spell check, grammar check, grammar references, writing references) and grade-level checklists both individually and in groups.	•	•	•	•

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<b>4<sup>th</sup> grade ELA Standards</b>				
<b>WRITING- Personal Style</b>				
W.PS.04.01 exhibit personal style and voice to enhance the written message (e.g., in narrative text: strong verbs, figurative language, sensory images; in informational text: precision, established importance, transitions).	• •	•	•	•
<b>WRITING- Grammar and Usage</b>				
W.GR.04.01 in the context of writing, correctly use simple and compound sentences; direct and indirect objects; prepositional phrases; adjectives; common and proper nouns as subjects and objects; pronouns as antecedents; regular and irregular verbs; hyphens between syllables; apostrophes in contractions; and commas in salutations to set off words; phrases and dialogue; quotation marks or italics to identify titles or names.	•	•	•	•
<b>WRITING- Spelling</b>				
W.SP.04.01 in the context of writing, correctly spell frequently encountered words (e.g., roots, inflections, prefixes, suffixes, multi-syllabic); for less frequently encountered words, use structural cues (e.g., letter/sound, rimes, morphemic) and environmental sources	•	•	•	•
<b>WRITING- Handwriting</b>				
W.HW.04.01 write neat and legible compositions.				
<b>WRITING- Writing Attitude</b>				
W.HW.04.01 write neat and legible compositions.				
<b>SPEAKING- Conventions</b>				
S.CN.04.01 use common grammatical structures correctly when speaking including appositives, participial phrases, adjectives, adverbs, and prepositional phrases to express ideas in more complex sentences.				
S.CN.04.02 adjust their use of language to communicate effectively with a variety of audiences and for different purposes including community-building, appreciation, invitations, and cross-curricular discussions.				

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<b>4<sup>th</sup> grade ELA Standards</b>				
<b>SPEAKING- Conventions, continued</b>				
S.CN.04.03 speak effectively using facial expressions, hand gestures, and body language in narrative and informational presentations.				
S.CN.04.04 present in standard American English if it is their first language. (Students whose first language is not English will present in their developing version of standard American English.)	•	•	•	•
S.CN.04.05 understand, providing examples of how language differs from region to region of the United States as a function of linguistic and cultural group membership.				
<b>SPEAKING- Discourse</b>				
S.DS.04.01 engage in interactive, extended discourse to socially construct meaning in book clubs, literature circles, partnerships, or other conversation protocols.	• • •	• • •	• • •	• • •
S.DS.04.02 discuss narratives (e.g., fantasy, myths, legends, adventures, poetry), conveying the story grammar (e.g., various character roles, plot, story level theme) and emphasizing facial expressions, hand gestures, and body language.				
S.DS.04.03 respond to multiple text types by reflecting, making connections, taking a position, and/or showing deep understanding.	• • •	• • •	• • •	• • •
S.DS.04.04 plan and deliver presentations focusing on a key question using an informational organizational pattern (e.g., descriptive, problem/solution, cause/effect); supportive facts and details reflecting and emphasizing facial expressions, hand gestures, and body language.	• •	• •	•	• • •
<b>LISTENING &amp; VIEWING- Conventions</b>				
L.CN.04.01 ask substantive questions of the speaker that will provide additional elaboration and details.				

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<b>4<sup>th</sup> grade ELA Standards</b>				
<b>LISTENING &amp; VIEWING- Conventions, continued</b>				
L.CN.04.02 listen to or view critically while demonstrating appropriate social skills of audience behaviors (e.g., eye contact, attentive, supportive) in small and large group settings.	• •	• •	• •	• •
L.CN.04.03 distinguish between and explain how verbal and non-verbal strategies enhance understanding of spoken messages and promote effective listening behaviors.				
L.CN.04.04 recognize and analyze the various roles of the communication process (e.g., to persuade, critically analyze, flatter, explain, dare) in focusing attention on events and in shaping opinions.				
<b>LISTENING &amp; VIEWING- Response</b>				
L.RP.04.01 listen to or view knowledgeably and discuss a variety of genre and compare their responses to those of their peers.				
L.RP.04.02 select, listen to or view knowledgeably, and respond thoughtfully to both classic and contemporary texts recognized for quality and literary merit.				
L.RP.04.03 respond to multiple text types listened to or viewed knowledgeably, by discussing, illustrating, and/or writing in order to clarify meaning, make connections, take a position, and/or show deep understanding.				
L.RP.04.04 combine skills to reveal strengthening literacy				
L.RP.04.05 respond to and summarize the major ideas and evidence presented in spoken messages and formal presentations.				• •

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<b>5<sup>th</sup> grade ELA Standards</b>				
<b>READING- Word Recognition and Word Study</b>				
<b>Word Recognition</b>				
R.WS.05.01 explain when to use and apply word structure, sentence structure, and prediction to aid in decoding words and understanding meanings of words encountered in context.	• •	• •	• •	• •
R.WS.05.02 use structural, syntactic, and semantic cues including letter-sound, rimes, base words, affixes, and syllabication to automatically read frequently encountered words, decode unknown words, and decide meanings including multiple meaning words.				
R.WS.05.03 automatically recognize frequently encountered words in print with the number of words that can be read fluently increasing steadily across the school year.				
R.WS.05.04 know the meanings of words encountered frequently in grade-level reading and oral language contexts.	• •	• •	• •	• •
R.WS.05.05 acquire and apply strategies to identify unknown words or word parts, and construct meaning by analyzing derivatives, defining meanings of affixes, and applying knowledge of word origins.				
<b>Fluency</b>				
R.WS.05.06 fluently read beginning grade-level text and increasingly demanding text as the year proceeds.	•	•	•	•
<b>Vocabulary</b>				
R.WS.05.07 in context, determine the meaning of words and phrases including symbols, idioms, recently coined words, content vocabulary, and literary terms using strategies and resources including analogies, content glossaries, and electronic resources.				

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<b>5<sup>th</sup> grade ELA Standards</b>				
<b>READING- Narrative Text</b>				
R.NT.05.01 analyze how characters and communities reflect life (in positive and negative ways) in classic, multicultural, and contemporary literature recognized for quality and literary merit.				
R.NT.05.02 analyze the structure, elements, style, and purpose of narrative genre including historical fiction, tall tales, science fiction, fantasy, and mystery.				
R.NT.05.03 analyze how characters' traits and setting define plot, climax, the role of dialogue, and how problems are resolved.				
R.NT.05.04 explain how authors use literary devices including exaggeration and metaphors to develop characters, themes, plot, and functions of heroes, anti-heroes, and narrators.				
<b>READING- Informational Text</b>				
R.IT.05.01 analyze the structure, elements, features, style, and purpose of informational genre including advertising, experiments, editorials, and atlases.	•••	•••	•••	•••
R.IT.05.02 identify and describe informational text patterns including compare/contrast, cause/effect, and problem/solution.	••	••	••	••
R.IT.05.03 explain how authors use text features including timelines, graphs, charts, diagrams, tables of contents, indices, introductions, summaries, and conclusions to enhance the understanding of key and supporting ideas.	•••	•••	•••	•••
<b>READING- Comprehension</b>				
R.CM.05.01 connect personal knowledge, experiences, and understanding of the world to themes and perspectives in text through oral and written responses.	••	••	•••	••
R.CM.05.02 retell through concise summarization grade-level narrative and informational text.	••	••	••	••
R.CM.05.03 analyze global themes, universal truths, and principles within and across text to create a deeper understanding by drawing conclusions, making inferences, and synthesizing.	•••	•••	•••	•••

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<b>5<sup>th</sup> grade ELA Standards</b>				
<b>READING- Comprehension, Continued</b>				
R.CM.05.04 apply significant knowledge from grade-level science, social studies, and mathematics texts.	• • •	• • •	• • •	• • •
<b>READING- Metacognition</b>				
R.MT.05.01 self-monitor comprehension when reading or listening to text by automatically applying and discussing the strategies used by mature readers to increase comprehension including: predicting, constructing mental images, visually representing ideas in text, questioning, rereading or listening again if uncertain about meaning, inferring, summarizing, and engaging in interpretive discussions.	• • •	• • •	• • •	• • •
R.MT.05.02 plan, monitor, regulate, and evaluate skills, strategies, and processes to construct and convey meaning (e.g., decoding unfamiliar words); select an appropriate text type from known genre for particular writing purposes; and use theory/evidence, cause/effect, and persuasive organizational patterns.	• • •	• • •	• • •	• • •
<b>READING- Critical Standards</b>				
R.CS.05.01 develop, discuss, and apply individual and shared standards using student/class created rubrics to assess the quality and accuracy of their own writing and the writing of others; identify attainment of intended purpose to interpret authors' viewpoints and determine effect on classroom or school-wide audiences.				
<b>READING- Reading Attitude</b>				
R.AT.05.01 be enthusiastic about reading and do substantial reading and writing on their own.	• •	• •	• •	• •

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<b>5<sup>th</sup> grade ELA Standards</b>				
<b>WRITING- Writing Genre</b>				
W.GN.05.01 write a cohesive narrative piece such as a mystery, tall tale, or historical fiction using time period and setting to enhance the plot; demonstrating roles and functions of heroes, anti-heroes, and narrator; and depicting conflicts and resolutions.				
W.GN.05.02 write poetry based on reading a wide variety of grade-appropriate poetry.				
W.GN.05.03 write a position piece that demonstrates understanding of central ideas and supporting details (e.g., position/evidence organizational pattern) using multiple headings and subheadings.	••			
W.GN.05.04 use the writing process to produce and present a research project; use a variety of resources to gather and organize relevant information into central ideas and supporting details for a teacher-approved narrowed focus question and hypothesis.	•••	••	••	•••
<b>WRITING- Writing Process</b>				
W.PR.05.01 set a purpose, consider audience, and replicate authors' styles and patterns when writing a narrative or informational piece.	••	••	••	••
W.PR.05.02 apply a variety of pre-writing strategies for both narrative and informational writing (e.g., graphic organizers such as maps, webs, Venn diagrams) in order to generate, sequence, and structure ideas	•••	•••	•••	•••
W.PR.05.03 draft focused ideas using linguistic structures and textual features needed to clearly communicate information composing coherent, mechanically sound paragraphs when writing compositions.				
W.PR.05.04 revise drafts based on constructive and specific oral and written responses to writing by identifying sections of the piece to improve organization and flow of ideas	•	•	•	•
W.PR.05.05 proofread and edit writing using grade-level checklists and other appropriate resources both individually and in groups.	•	•	•	•

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<b>5<sup>th</sup> grade ELA Standards</b>				
<b>WRITING- Personal Style</b>				
W.PS.05.01 exhibit personal style and voice to enhance the written message in both narrative (e.g., personification, humor, element of surprise) and informational writing (e.g., emotional appeal, strong opinion, credible support).	• •	•	•	•
<b>WRITING- Grammar and Usage</b>				
W.GR.05.01 in the context of writing, correctly use compound subjects and predicates; proper nouns and pronouns; articles; conjunctions; hyphens in compound and number words; commas between two independent clauses to set off direct address, long phrases, clauses; colons to separate hours and minutes and to introduce a list.	•	•	•	•
<b>WRITING- Spelling</b>				
W.SP.05.01 in the context of writing, correctly spell frequently encountered words (e.g., roots, inflections, prefixes, suffixes, multi-syllabic); for less frequently encountered words, use structural cues (e.g., letter/sound, rime, morphemic) and environmental sources	•	•	•	•
<b>WRITING- Handwriting</b>				
W.HW.05.01 write neat and legible compositions.				
<b>WRITING- Writing Attitude</b>				
W.AT.05.01 be enthusiastic about writing and learning to write.	• •	• •	• •	• •

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<b>5<sup>th</sup> grade ELA Standards</b>				
<b>SPEAKING- Conventions</b>				
S.CN.05.01 use common grammatical structures correctly when speaking including irregular verbs to express more complex ideas.				
S.CN.05.02 adjust their use of language to communicate effectively with a variety of audiences and for different purposes including research, explanation, and persuasion.	• •	• •	• •	• •
S.CN.05.03 speak effectively using varying modulation, volume, and pace of speech to indicate emotions, create excitement, and emphasize meaning in narrative and informational presentations.				
S.CN.05.04 present in standard American English if it is their first language. (Students whose first language is not English will present in their developing version of standard American English.)	• •	• •	• •	• •
S.CN.05.05 understand, providing examples of how language differs from early American history to current day America as a function of linguistic and cultural group membership				
<b>SPEAKING- Discourse</b>				
S.DS.05.01 engage in interactive, extended discourse to socially construct meaning in book clubs, literature circles, partnerships, or other conversation protocols.	• • •	• • •	• • •	• • •
S.DS.05.02 discuss narratives (e.g., mystery, historical fiction, tall tales, science fiction), conveying the story grammar (e.g., traits of characters, relationship between setting and climax/anticlimax), while varying voice modulation, volume, and pace of speech to emphasize meaning.				
S.DS.05.03 respond to multiple text types by analyzing content, interpreting the message, and evaluating the purpose.	• •	• •	• •	• •
S.DS.05.04 plan and deliver persuasive presentations or reports using an informational organizational pattern for a specific purpose (e.g., to persuade, describe, inform) that conveys and supports the point they want to make, while varying voice modulation, volume, and pace of speech to emphasize meaning.	• •			• •

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<b>5<sup>th</sup> grade ELA Standards</b>				
<b>LISTENING &amp; VIEWING- Conventions</b>				
L.CN.05.01 ask substantive questions based on the argument(s) presented by a speaker when listening to or viewing a variety of presentations.	• •	•	•	• •
L.CN.05.02 listen to or view critically while demonstrating appropriate social skills of audience behaviors (e.g., eye contact, attentive, supportive) in small and large group settings.				
L.CN.05.03 listen and view critically how verbal and non-verbal strategies enhance understanding of spoken messages and promote effective listening behaviors during a variety of class presentations.				
L.CN.05.04 recognize and analyze the various roles of the communication process (e.g., to persuade, critically analyze, entertaining versus informative, different interpretations or perspectives of an action or event) in focusing attention on events and shaping opinions.				
<b>LISTENING &amp; VIEWING- Response</b>				
L.RP.05.01 listen to or view knowledgeably and discuss a variety of genre and compare their responses to those of their peers.				
L.RP.05.02 select, listen to or view knowledgeably, and respond thoughtfully to both classic and contemporary texts recognized for quality and literary merit.				
L.RP.05.03 respond to multiple text types listened to or viewed knowledgeably, by discussing, illustrating, and/or writing in order to clarify meaning, make connections, take a position, and/or show deep understanding without major misconceptions.				
L.RP.05.04 combine skills to reveal strengthening literacy (e.g., viewing then analyzing in writing, listening then paraphrasing in writing).				
L.RP.05.05 respond to and go beyond the information given by a speaker, making inferences and drawing appropriate conclusions.				• •