

**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 Ohio**  
**English Language Arts Standards**  
**for Grades 4 and 5**

**Created March 2009**



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## Grade Four

	Aquatic Ecosystems	Planets & Moons	Models of Matter	Chemical Changes
<b>Phonemic Awareness, Word Recognition and Fluency</b>				
<b>Acquisition of Vocabulary</b>				
1. Determine the meaning of unknown words by using a variety of context clues, including word, sentence and paragraph clues.	●	●	●	●
2. Use context clues to determine the meaning of synonyms, antonyms, homophones, homonyms and homographs.	●	●	●	●
3. Recognize the difference between the meanings of connotation and denotation.				
4. Identify and apply the meaning of the terms synonym, antonym, homophone and homograph.				
5. Identify and understand new uses of words and phrases in text, such as similes and metaphors.				
6. Identify word origins to determine the meaning of unknown words and phrases.				

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	Aquatic Ecosystems	Planets & Moons	Models of Matter	Chemical Changes
7. Identify the meanings of prefixes, suffixes and roots and their various forms to determine the meanings of words.	●	●	●	●
8. Identify the meanings of abbreviations.				●●
9. Determine the meanings and pronunciations of unknown words by using dictionaries, glossaries, technology and textual features, such as definitional footnotes or sidebars.	●●●	●●●	●●●	●●●
<b>Reading Process: Concepts of Print, Comprehension Strategies and Self-Monitoring Strategies</b>				
1. Establish and adjust purposes for reading, including to find out, to understand, to interpret, to enjoy and to solve problems.	●●●	●●●	●●●	●●●
2. Predict and support predictions using an awareness of new vocabulary, text structures and familiar plot patterns.	●●	●●	●●	●●●
3. Compare and contrast information on a single topic or theme across different text and non-text resources.	●●●	●●●	●●●	●●●
4. Summarize important information in texts to demonstrate comprehension.	●●	●●●	●●	●●
5. Make inferences or draw conclusions about what has been read and support those conclusions with textual evidence.	●●	●●	●●●	●●
6. Select, create and use graphic organizers to interpret textual information.	●●	●●	●●	●●
7. Answer literal, inferential and evaluative questions to demonstrate comprehension of grade-appropriate print texts and electronic and visual media.	●●●	●●●	●●●	●●●
8. Monitor own comprehension by adjusting speed to fit the purpose, or by skimming, scanning, reading on or looking back.	●	●	●	●
9. List questions and search for answers within the text to construct meaning.	●●●	●●	●●	●●●
10. Use criteria to choose independent reading materials (e.g., personal interest, knowledge of authors and genres or recommendations from others).				
11. Independently read books for various purposes (e.g., for enjoyment, for literary experience, to gain information or to perform a task).	●●●	●●●	●●●	●●●
<b>Reading Applications: Informational, Technical and Persuasive Text</b>				
1. Make inferences about informational text from the title page, table of contents and chapter headings.	●●●	●●●	●●●	●●●
2. Summarize main ideas in informational text, using supporting details as appropriate.	●●	●●●	●●	●●
3. Locate important details about a topic using different sources of information including books, magazines, newspapers and online resources.	●●●	●●●	●●●	●●●
4. Identify examples of cause and effect used in informational text.	●●	●●	●●	●●●

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5. Draw conclusions from information in maps, charts, graphs and diagrams.	●●	●●	●●	●●
6. Clarify steps in a set of instructions or procedures for completeness.	●	●	●	●●●
7. Distinguish fact from opinion.	●●●	●●●	●●●	●●●
<b>Reading Applications: Literary Text</b>				
1. Describe the thoughts, words and interactions of characters.				
2. Describe the thoughts, words and interactions of characters.				
3. Identify the main incidents of a plot sequence, identifying the major conflict and its resolution.	●			●
4. Identify the speaker and recognize the difference between first- and third-person narration.				
5. Determine the theme and whether it is implied or stated directly.				
6. Identify and explain the defining characteristics of literary forms and genres, including poetry, drama, fables, fantasies, chapter books, fiction and non-fiction.	●●	●●	●●	●●
7. Explain how an author's choice of words appeals to the senses and suggests mood.	●●			
8. Identify figurative language in literary works, including idioms, similes and metaphors.				
<b>Writing Processes</b>				
1. Generate writing ideas through discussions with others and from printed material.	●●●	●●●	●●●	●●●
2. State and develop a clear main idea for writing.	●●●	●●●	●●●	●●●
3. Develop a purpose and audience for writing.	●●	●●	●●	●●
4. Use organizational strategies (e.g., brainstorming, lists, webs and Venn diagrams) to plan writing.	●●●	●●●	●●●	●●●
5. Organize writing, beginning with an introduction, body and a resolution of plot, followed by a closing statement or a summary of important ideas and details.	●●●	●●●	●●●	●●●
6. Vary simple, compound and complex sentence structures.				
7. Create paragraphs with topic sentences and supporting sentences that are marked by indentation) and are linked by transitional words and phrases.	●●●	●●●	●●●	●●●
8. Vary language and style as appropriate to audience and purpose.				
9. Use available technology to compose text.				
10. Reread and assess writing for clarity, using a variety of methods (e.g., writer's circle or author's chair).				

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11. Add descriptive words and details and delete extraneous information.	●●			
12. Rearrange words, sentences and paragraphs to clarify meaning.				
13. Use resources and reference materials, including dictionaries, to select more effective vocabulary.	●●	●●	●●	●●
14. Proofread writing and edit to improve conventions (e.g., grammar, spelling, punctuation and capitalization) and identify and correct fragments and run-ons	●	●	●	●
15. Apply tools (e.g., rubric, checklist and feedback) to judge the quality of writing.				
16. Prepare for publication (e.g., for display or for sharing with others) writing that follows a format appropriate to the purpose using techniques such as electronic resources and graphics to enhance the final product.	●●	●●	●●	●●
<b>Writing Applications</b>				
1. Write narratives that sequence events, including descriptive details and vivid language to develop plot, characters and setting and to establish a point of view.				
2. Write responses to novels, stories and poems that include a simple interpretation of a literary work and support judgments with specific references to the original text and to prior knowledge.				
3. Write formal and informal letters (e.g., thank you notes, letters of request) that follow letter format (e.g., date, proper salutation, body, closing and signature), include important information and demonstrate a sense of closure.				
4. Write informational reports that include facts and examples and present important details in a logical order.	●●●	●●●	●●●	●●●
5. Produce informal writings (e.g., messages, journals, notes and poems) for various purposes.	●●●	●●●	●●●	●●●
<b>Writing Conventions</b>				
1. Write legibly in cursive, spacing letters, words and sentences appropriately.				
2. Spell high-frequency words correctly.				
3. Spell plurals and inflectional endings correctly.				
4. Spell roots, suffixes and prefixes correctly.				
5. Use commas, end marks, apostrophes and quotation marks correctly.				
6. Use correct capitalization.				
7. Use various parts of speech such as nouns, pronouns and verbs (e.g., regular and irregular, past, present and future).				
8. Use conjunctions and interjections.				
9. Use adverbs.				
10. Use prepositions and prepositional phrases.				

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11. Use objective and nominative case pronouns.				
12. Use subjects and verbs that are in agreement.				
13. Use irregular plural nouns.				
<b>Research</b>				
1. Identify a topic and questions for research and develop a plan for gathering information.	●●●	●●●	●●	●●●
2. Locate sources and collect relevant information from multiple sources (e.g., school library catalogs, online databases, electronic resources and Internet-based resources).	●●●	●●●	●●	●●
3. Identify important information found in the sources and summarize important findings.	●●●	●●●	●●●	●●●
4. Create categories to sort and organize relevant information charts, tables or graphic organizers.	●●●	●●	●●	●●●
5. Discuss the meaning of plagiarism and create a list of sources.				
6. Use a variety of communication techniques, including oral, visual, written or multimedia reports, to present information gathered.	●●●	●●●	●●	●●●
<b>Communications: Oral and Visual</b>				
1. Demonstrate active listening strategies (e.g., asking focused questions, responding to cues, making visual contact).	●●●	●●●	●●●	●●●
2. Recall the main idea, including relevant supporting details, and identify the purpose of presentations and visual media.	●●	●●	●●	●●
3. Distinguish between a speaker's opinions and verifiable facts.	●●	●●	●●	●●
4. Demonstrate an understanding of the rules of the English language.				
5. Select language appropriate to purpose and audience.	●●	●●	●●	●●
6. Use clear diction and tone, and adjust volume and tempo to stress important ideas.	●	●	●	●
7. Adjust speaking content according to the needs of the audience.	●	●	●	●
8. Deliver informational presentations (e.g., expository, research) that:	●●●	●●●	●●●	●●●
a. present events or ideas in a logical sequence and maintain a clear focus;	●●●	●●●	●●●	●●●
b. demonstrate an understanding of the topic;	●●●	●●●	●●●	●●●
c. include relevant facts, details, examples, quotations, statistics, stories and anecdotes to clarify and explain information;	●●●	●●●	●●●	●●●
d. organize information to include a clear introduction, body and conclusion;	●●	●●	●●	●●

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e. use appropriate visual materials (e.g., diagrams, charts, illustrations) and available technology; and	●●	●●●	●●	●●
f. draw from several sources and identify sources used.	●●●	●●●	●●●	●●●
9. Deliver formal and informal descriptive presentations recalling an event or personal experience that convey relevant information and descriptive details.				

## Grade Five

	Aquatic Ecosystems	Planets & Moons	Models of Matter	Chemical Changes
<b>Phonemic Awareness, Word Recognition and Fluency</b>				
<b>Acquisition of Vocabulary</b>				
1. Define the meaning of known words by using context clues and the author's use of definition, restatement and example.	●	●	●	●
2. Use context clues to determine the meaning of synonyms, antonyms, homophones, homonyms and homographs.	●	●	●	●
3. Identify the connotation and denotation of new words.				
4. Identify and understand new uses of words and phrases in text, such as similes and metaphors.				
5. Use word origins to determine the meaning of unknown words and phrases.				
6. Apply the knowledge of prefixes, suffixes and roots and their various inflections to analyze the meanings of words.	●	●	●	●
7. Identify the meanings of abbreviations.				●●
8. Determine the meanings and pronunciations of unknown words by using dictionaries, thesauruses, glossaries, technology and textual features, such as definitional footnotes or sidebars.	●●●	●●●	●●●	●●●
<b>Reading Processes: Concepts of Print, Comprehension Strategies, and Self-Monitoring Strategies</b>				
1. Establish and adjust purposes for reading, including to find out, to understand, to interpret, to enjoy and to solve problems.	●●●	●●●	●●●	●●●
2. Predict and support predictions with specific references to textual examples that may be in widely separated sections of text.	●●	●●	●●	●●●
3. Make critical comparisons across texts.	●●●	●●●	●●●	●●●
4. Summarize the information in texts, recognizing that there may be several important ideas rather than just one main idea and identifying details that support each.	●●	●●●	●●	●●

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5. Make inferences based on implicit information in texts, and provide justifications for those inferences	●●	●●	●●●	●●
6. Select, create and use graphic organizers to interpret textual information.	●●	●●	●●	●●
7. Answer literal, inferential and evaluative questions to demonstrate comprehension of grade-appropriate print texts and electronic and visual media.	●●●	●●●	●●●	●●●
8. Monitor own comprehension by adjusting speed to fit the purpose, or by skimming, scanning, reading on, looking back or summarizing what has been read so far in text.	●	●	●	●
9. List questions and search for answers within the text to construct meaning.	●●●	●●	●●	●●●
10. Use criteria to choose independent reading materials (e.g., personal interest, knowledge of authors and genres or recommendations from others).				
11. Independently read books for various purposes (e.g., for enjoyment, for literary experience, to gain information or to perform a task).	●●●	●●●	●●●	●●●
<b>Reading Applications: Informational, Technical, and Persuasive Text</b>				
1. Use text features, such as chapter titles, headings and subheadings; parts of books including the index and table of contents and online tools (search engines) to locate information.	●●●	●●●	●●●	●●●
2. Identify, distinguish between and explain examples of cause and effect in informational text.	●●	●●	●●	●●●
3. Compare important details about a topic, using different sources of information, including books, magazines, newspapers and online resources.	●●●	●●●	●●●	●●●
4. Summarize the main ideas and supporting details.	●●	●●●	●●	●●
5. Analyze information found in maps, charts, tables, graphs and diagrams.	●●	●●	●●	●●
6. Clarify steps in a set of instructions or procedures for proper sequencing and completeness and revise if necessary.	●	●	●	●●●
7. Analyze the difference between fact and opinion.	●●●	●●●	●●●	●●●
8. Distinguish relevant from irrelevant information in a text and identify possible points of confusion for the reader.				
<b>Reading Applications: Literary Text</b>				
1. Explain how a character's thoughts, words and actions reveal his or her motivations.				
2. Explain the influence of setting on the selection.				
3. Identify the main incidents of a plot sequence and explain how they influence future action.	●			●
4. Identify the speaker and explain how point of view affects the text.				
5. Summarize stated and implied themes.				
6. Describe the defining characteristics of literary forms and genres, including poetry, drama, chapter books, biographies, fiction and non-fiction.	●●	●●	●●	●●
7. Interpret how an author's choice of words appeals to the senses and suggests mood.	●●			

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8. Identify and explain the use of figurative language in literary works, including idioms, similes, hyperboles, metaphors and personification.				
<b>Writing Processes</b>				
1. Generate writing ideas through discussions with others and from printed material, and keep a list of writing ideas.	●●●	●●●	●●●	●●●
2. Conduct background reading, interviews or surveys when appropriate.				
3. State and develop a clear main idea for writing.	●●●	●●●	●●●	●●●
4. Determine a purpose and audience.	●●	●●	●●	●●
5. Use organizational strategies (e.g., rough outlines, diagrams, maps, webs and Venn diagrams) to plan writing.	●●●	●●●	●●●	●●●
6. Organize writing, beginning with an introduction, body and a resolution of plot, followed by a closing statement or a summary of important ideas and details.	●●●	●●●	●●●	●●●
7. Vary simple, compound and complex sentence structures.				
8. Group related ideas into paragraphs, including topic sentences following paragraph form, and maintain a consistent focus across paragraphs.	●●●	●●●	●●●	●●●
9. Vary language and style as appropriate to audience and purpose.				
10. Use available technology to compose text.				
11. Reread and assess writing for clarity, using a variety of methods (e.g., writer's circle or author's chair).				
12. Add and delete information and details to better elaborate on a stated central idea and to more effectively accomplish purpose.	●●			
13. Rearrange words, sentences and paragraphs, and add transitional words and phrases to clarify meaning.				
14. Use resources and reference materials (e.g., dictionaries and thesauruses) to select more effective vocabulary.	●●	●●	●●	●●
15. Proofread writing, edit to improve conventions, (e.g., grammar, spelling, punctuation and capitalization), and identify and correct fragments and run-ons.	●	●	●	●

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16. Apply tools (e.g., rubric, checklist and feedback) to judge the quality of writing.				
17. Prepare for publication (e.g., for display or for sharing with others), writing that follows a format appropriate to the purpose, using techniques such as electronic resources and graphics to enhance the final product.	●●	●●	●●	●●
<b>Writing Applications</b>				
1. Write narratives with a consistent point of view, using sensory details and dialogue to develop characters and setting.				
2. Write responses to novels, stories and poems that organize an interpretation around several clear ideas, and justify the interpretation through the use of examples and specific textual evidence.				
3. Write letters that state the purpose, make requests or give compliments and use business letter format.				
4. Write informational essays or reports, including research, that organize information with a clear introduction, body and conclusion following common expository structures when appropriate (e.g., cause-effect, comparison-contrast) and include facts, details and examples to illustrate important ideas.	●●●	●●●	●●●	●●●
5. Produce informal writings (e.g., journals, notes and poems) for various purposes.	●●●	●●●	●●●	●●●
<b>Writing Conventions</b>				
1. Spell high-frequency words correctly.				
2. Spell contractions correctly.				
3. Spell roots, suffixes and prefixes correctly.				
4. Use commas, end marks, apostrophes and quotation marks correctly.				
5. Use correct capitalization.				
6. Use various parts of speech, such as nouns, pronouns and verbs (regular and irregular).				
7. Use prepositions and prepositional phrases.				
8. Use adverbs.				
9. Use objective and nominative case pronouns.				
10. Use indefinite and relative pronouns.				
11. Use conjunctions and interjections.				

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<b>Research</b>				
1. Generate a topic, assigned or personal interest, and open-ended questions for research and develop a plan for gathering information.	●●●	●●●	●●	●●●
2. Locate sources and gather relevant information from multiple sources (e.g., school library catalogs, online databases, electronic resources and Internet-based resources).	●●●	●●●	●●	●●
3. Identify important information found in sources and paraphrase the findings in a systematic way (e.g., notes, outlines, charts, tables or graphic organizers).	●●●	●●●	●●●	●●●
4. Compare and contrast important findings and select sources to support central ideas, concepts and themes.	●●●	●●●	●●●	●●●
5. Define plagiarism and acknowledge sources of information.				
6. Use a variety of communication techniques, including oral, visual, written or multimedia reports, to present information gathered.	●●●	●●●	●●	●●●
<b>Communication: Oral and Visual</b>				
1. Demonstrate active listening strategies (e.g., asking focused questions, responding to cues, making visual contact).	●●●	●●●	●●●	●●●
2. Interpret the main idea and draw conclusions from oral presentations and visual media.	●●	●●	●●	●●
3. Identify the speaker's purpose in presentations and visual media (e.g., to inform, to entertain, to persuade).				
4. Discuss how facts and opinions are used to shape the opinions of listeners and viewers.	●	●	●	●
5. Demonstrate an understanding of the rules of the English language and select language appropriate to purpose and audience. Strategies				
6. Use clear diction, pitch, tempo and tone, and adjust volume and tempo to stress important ideas.	●	●	●	●
7. Adjust speaking content according to the needs of the situation, setting and audience.	●	●	●	●
8. Deliver informational presentations (e.g., expository, research) that:	●●●	●●●	●●●	●●●

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a. demonstrate an understanding of the topic and present events or ideas in a logical sequence;	●●●	●●●	●●●	●●●
b. support the main idea with relevant facts, details, examples, quotations, statistics, stories and anecdotes;	●●●	●●●	●●●	●●●
c. organize information, including a clear introduction, body and conclusion and follow common organizational structures when appropriate (e.g., cause-effect, compare-contrast);	●●	●●	●●	●●
d. use appropriate visual materials (e.g., diagrams, charts, illustrations) and available technology; and	●●	●●●	●●	●●
e. draw from several sources and identify sources used.	●●●	●●●	●●●	●●●
9. Deliver formal and informal descriptive presentations recalling an event or personal experience that convey relevant information and descriptive details.				
10. Deliver persuasive presentations that:	●●●	●●●		
a. establish a clear position;	●●●	●●●		
b. include relevant evidence to support a position and to address potential concerns of listeners; and	●●●	●●●		
c. follow common organizational structures when appropriate (e.g., cause-effect, compare-contrast, problem-solution).	●●●	●●●		

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