Indiana Grade 8

Science Literacy

**Reading and Writing Standards for Literacy in Science**

The Reading and Writing Standards for Literacy in Science are presented in grade-level bands. Students at the beginning of a grade-band continuum will require a blend of scaffolding and direct, explicit instruction. By the end of the grade-band continuum, students should demonstrate proficiency of the literacy standards independently.

The grades 6-8 standards below define what students should understand and be able to do by end of 8th grade. These are to serve as a complement to the specific content demands of the science standards and be taught as skills that allow students to communicate and comprehend the science content.

**Reading for Literacy in Science**

Students need to develop the skills that allow them to read complex informational science texts with independence and confidence. Students need to build an appreciation of the norms and conventions of reading in science, an understanding of domain-specific words and phrases, an attention to precise details, the capacity to evaluate detailed arguments, synthesize complex information and follow detailed descriptions and procedures. Students need to be able to gain knowledge from challenging texts that make use of elaborate diagrams and data to convey information and illustrate concepts.

**Key Ideas and Details**

**6-8.RS.1** Cite specific textual evidence to support analysis of science texts.

**6-8.RS.2** Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.

**6-8.RS.3** Follow precisely a multistep procedure when carrying out experiments or taking measurements.

**Craft and Structure**

**6-8.RS.4** Determine the meaning of symbols, key terms, and other domain-specific words and phrases a they are used in a specific scientific context relevant to *grades 6-8 texts and topics*.

**6-8.RS.5** Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.

**6-8.RS.6** Analyze the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.

**Integration of Knowledge and Ideas**

**6-8.RS.7** Integrate quantitative information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

**6-8.RS.8** Distinguish among facts, reasoned judgment based on research findings and speculation in a text.

**Writing for Literacy in Science**

Students need to be able use writing as a key means to defend and assert claims, showing what they know about a subject and conveying what they have experienced, imagined, thought, and felt. They must be adept at gathering information, evaluating sources, and citing material accurately, reporting findings from their research and analysis of sources in clear manner.

**Text Types and Purposes**

**6-8.WS.1** Write arguments to focus on discipline-specific content.

a. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.

b. Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources.

c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.

d. Establish and maintain a formal style.

e. Provide a concluding statement or section that follows from and supports the argument presented.

**6-8.WS.2** Write informative/explanatory texts, including scientific procedures/experiments.

a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts and information into broader categories as appropriate to achieving purpose; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.

b. Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.

c. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.

d. Use precise language and domain-specific vocabulary to inform about or explain the topic.

e. Establish and maintain a formal style and objective tone.

f. Provide a concluding statement or section that follows from and supports the explanation or information presented.

**6-8.WS.3** Note: Students’ narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In science, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations that others can replicate them and (possibly) reach the same results.

**Production and Distribution of Writing**

**6-8.WS.4** Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

**6-8.WS.5** With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.

**6-8.WS.6** Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.

**Research to Build and Present Knowledge**

**6-8.WS.7** Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

**6-8.WS.8** Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.

**6-8.WS.9** Draw evidence from informational texts to support analysis, reflection, and research.

**Range of Writing**

**6-8.WS.10** Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

**6-8.RS.9** Compare and contrast the information gained from experiments, simulations, video or multimedia sources with that gained from reading a text on the same topic.

**Range of Reading and Level of Text Complexity**

**6-8.RS.10** By the end of grade 8 read and comprehend science texts in the grades 6-8 text complexity band independently and proficiently.