

Academic Standards for Reading in Science and Technical Subjects

*Grades 6 – 12
March 1, 2014*



Pennsylvania Department of Education

PA CORE STANDARDS
(GRADES 6 - 12)
Reading in Science and Technical Subjects

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INTRODUCTION

These standards describe what students in the science classroom should know and be able to do with the English language in reading, grade 6 through 12. The standards provide the targets for instruction and student learning essential for success in all academic areas, not just language arts classrooms. Although the **standards are not a curriculum** or a prescribed series of activities, school entities will use them to develop a local school curriculum that will meet local students' needs.

The standards below begin at grade 6; standards for K–5 reading in history/social studies, science, and technical subjects are integrated into the K–5 Reading standards.

The English Language Arts Standards for Science and Technical Subjects also provide parents and community members with information about what students should know and be able to do as they progress through the educational program and at graduation. With a clearly defined target provided by the standards, parents, students, educators and community members become partners in learning. Each standard implies an end of year goal – with the understanding that exceeding the standard is an even more desirable end goal.

Note: The PA Core Standards for Science and Technical Subjects are an extension of the Academic Standards for Science.

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| 3.5 Reading Informational Text Students read, understand, and respond to informational text – with emphasis on comprehension, making connections among ideas and between texts with focus on textual evidence. | | | |
|---|---|---|---|
| | GRADE 6-8 | GRADE 9-10 | GRADE 11-12 |
| Key Ideas and Details | CC.3.5.6-8.A. Cite specific textual evidence to support analysis of science and technical texts. | CC.3.5.9-10.A. Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. | CC.3.5.11-12.A. Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. |
| | CC.3.5.6-8.B. Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions. | CC.3.5.9-10.B. Determine the central ideas or conclusions of a text; trace the text’s explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. | CC.3.5.11-12.B. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms. |
| | CC.3.5.6-8.C. Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks. | CC.3.5.9-10.C. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. | CC.3.5.11-12.C. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text. |
| Craft and Structure | CC.3.5.6-8.D. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to <i>grades 6–8 texts and topics</i> . | CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to <i>grades 9–10 texts and topics</i> . | CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to <i>grades 11–12 texts and topics</i> . |
| | CC.3.5.6-8.E. 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. | CC.3.5.9-10.E. Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., <i>force, friction, reaction force, energy</i>). | CC.3.5.11-12.E. Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. |
| | CC.3.5.6-8.F. Analyze the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text. | CC.3.5.9-10.F. Analyze the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address. | CC.3.5.11-12.F. Analyze the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved. |

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| | GRADE 6-8 | GRADE 9-10 | GRADE 11-12 |
| Integration of Knowledge and Ideas | CC.3.5.6-8.G. Integrate quantitative or technical 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). | CC.3.5.9-10.G. Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words. | CC.3.5.11-12.G. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. |
| | CC.3.5.6-8.H. Distinguish among facts, reasoned judgment based on research findings, and speculation in a text. | CC.3.5.9-10.H. Assess the extent to which the reasoning and evidence in a text support the author’s claim or a recommendation for solving a scientific or technical problem. | CC.3.5.11-12.H. Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. |
| | CC.3.5.6-8.I. Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic. | CC.3.5.9-10.I. Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts. | CC.3.5.11-12.I. Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. |
| Range and Level of Complex Texts | CC.3.5.6-8.J. By the end of grade 8, read and comprehend science/technical texts in the grades 6–8 text complexity band independently and proficiently. | CC.3.5.9-10.J. By the end of grade 10, read and comprehend science/technical texts in the grades 9–10 text complexity band independently and proficiently. | CC.3.5.11-12.J. By the end of grade 12, read and comprehend science/technical texts in the grades 11–12 text complexity band independently and proficiently. |