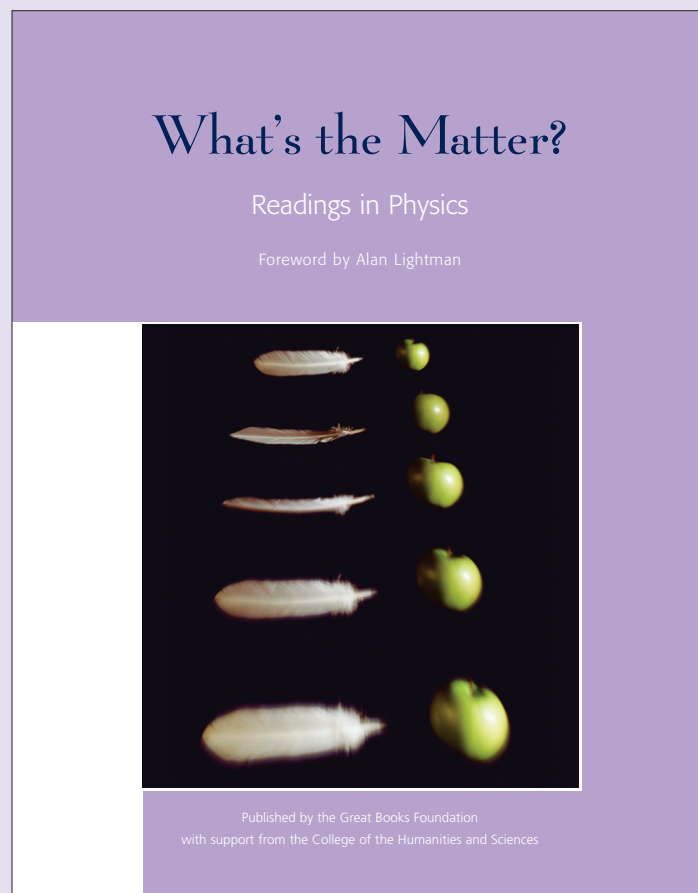


What's the Matter

**Common Core State Standards
Reading Standards for Literature**



read.think.discuss.grow.[®]
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Great Books Programs Meet the Common Core State Standards for English Language Arts

This booklet details the specific Common Core standards for English Language Arts addressed in the Great Books science anthology *What's the Matter: Readings in Physics*. The color-coded key on page 3 shows which standards are supported throughout the selections and discussion activities in this physics anthology.

Great Books programs provide the essential elements students need to meet and surpass the goals of the Common Core State Standards. Visit greatbooks.org to view or download “Great Books Programs and the Common Core State Standards.”

The Great Books Foundation Common Core Standards Correlations for Literature, Social Studies, and Science

Reading Standards for Literature: Grades 9–12

Key

RI = Reading: Informational Text

W = Writing

SL = Speaking & Listening

L = Language

RST = Reading Standards for Literacy in
Science and Technical Subjects

WHST = Writing in History/Social Studies,
Science, and Technical Subjects

What's the Matter

Code	Common Core State Standard
RI.9-10.1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
RI.9-10.2	Determine a central idea of a text and analyze its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.
RI.9-10.3	Analyze how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them.
RI.9-10.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g., how the language of a court opinion differs from that of a newspaper).
RI.9-10.5	Analyze in detail how an author's ideas or claims are developed and refined by particular sentences, paragraphs, or larger portions of a text (e.g., a section or chapter).
RI.9-10.6	Determine an author's point of view or purpose in a text and analyze how an author uses rhetoric to advance that point of view or purpose.
RI.9-10.7	Analyze various accounts of a subject told in different mediums (e.g., a person's life story in both print and multimedia), determining which details are emphasized in each account.
RI.9-10.8	Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning.

What's the Matter, continued

Code	Common Core State Standard
RI.9-10.10	By the end of grade 9, read and comprehend literary nonfiction in the grades 9–10 text complexity band proficiently, with scaffolding as needed at the high end of the range. By the end of grade 10, read and comprehend literary nonfiction at the high end of the grades 9–10 text complexity band independently and proficiently.
RI.11-12.1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.
RI.11-12.2	Determine two or more central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to provide a complex analysis; provide an objective summary of the text.
RI.11-12.3	Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text.
RI.11-12.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze how an author uses and refines the meaning of a key term or terms over the course of a text (e.g., how Madison defines faction in Federalist No. 10).
RI.11-12.5	Analyze and evaluate the effectiveness of the structure an author uses in his or her exposition or argument, including whether the structure makes points clear, convincing, and engaging.
RI.11-12.6	Determine an author's point of view or purpose in a text in which the rhetoric is particularly effective, analyzing how style and content contribute to the power, persuasiveness, or beauty of the text.
RI.11-12.10	By the end of grade 11, read and comprehend literary nonfiction in the grades 11-CCR text complexity band proficiently, with scaffolding as needed at the high end of the range. By the end of grade 12, read and comprehend literary nonfiction at the high end of the grades 11-CCR text complexity band independently and proficiently.
SL.9-10.1	Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9–10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.
SL.9-10.1a	Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas.
SL.9-10.1b	Work with peers to set rules for collegial discussions and decision-making (e.g., informal consensus, taking votes on key issues, presentation of alternate views), clear goals and deadlines, and individual roles as needed.
SL.9-10.1c	Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions.

What's the Matter, continued

Code	Common Core State Standard
SL.9-10.1d	Respond thoughtfully to diverse perspectives, summarize points of agreement and disagreement, and, when warranted, qualify or justify their own views and understanding and make new connections in light of the evidence and reasoning presented.
SL.9-10.2	Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source.
SL.9-10.4	Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.
SL.11-12.1	Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.
SL.11-12.1a	Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas.
SL.11-12.1b	Work with peers to promote civil, democratic discussions and decision-making, set clear goals and deadlines, and establish individual roles as needed.
SL.11-12.1c	Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives.
SL.11-12.1d	Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the task.
SL.11-12.2	Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.
SL.11-12.4	Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.
L.9-10.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
L.9-10.3	Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.
L.9-10.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on <i>grades 9–10 reading and content</i> , choosing flexibly from a range of strategies.

What's the Matter, continued

Code	Common Core State Standard
L.9-10.4a	Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.
L.9-10.4.c	Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, or its etymology.
L.9-10.4d	Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
L.9-10.5	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.
L.9-10.5b	Analyze nuances in the meaning of words with similar denotations.
L.9-10.6	Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.
L.11-12.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
L.11-12.1b	Resolve issues of complex or contested usage, consulting references (e.g., <i>Merriam-Webster's Dictionary of English Usage</i> , <i>Garner's Modern American Usage</i>) as needed.
L.11-12.3	Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.
L.11-12.3a	Vary syntax for effect, consulting references (e.g., Tufte's <i>Artful Sentences</i>) for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.
L.11-12.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on <i>grades 11–12 reading and content</i> , choosing flexibly from a range of strategies.
L.11-12.4a	Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.
L.11-12.4c	Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its standard usage.
L.11-12.4d	Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
L.11-12.6	Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

What's the Matter, continued

Code	Common Core State Standard
RST.9-10.1	Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.
RST.9-10.2	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.
RST.9-10.4	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> .
RST.9-10.5	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>).
RST.9-10.6	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.
RST.9-10.7	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.
RST.9-10.8	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.
RST.9-10.9	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.
RST.9-10.10	By the end of grade 10, read and comprehend science/technical texts in the grades 9–10 text complexity band independently and proficiently.
RST.11-12.1	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.
RST.11-12.2	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.
RST.11-12.4	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> .
RST.11-12.5	Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.
RST.11-12.6	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.
RST.11-12.7	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.

What's the Matter, continued

Code	Common Core State Standard
RST.11-12.8	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.
RST.11-12.9	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.
RST.11-12.10	By the end of grade 12, read and comprehend science/technical texts in the grades 11–CCR text complexity band independently and proficiently.

What's the Matter Common Core Writing Standards

The Common Core State Standards for Writing for Grades 9–12 mandate that all students “gain mastery of a range of writing skills and applications.” The Great Books Foundation’s Shared Inquiry™ method of learning helps students develop this mastery by emphasizing the connections between reading, writing, and discussion. Many of the discussion questions provided in our science anthologies address these skills, and the writing standards referenced in this booklet correlate to this approach.

Code	Common Core State Standard
W.9-10.1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
W.9-10.1a	Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among claim(s), counterclaims, reasons, and evidence.
W.9-10.1b	Develop claim(s) and counterclaims fairly, supplying evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience’s knowledge level and concerns.
W.9-10.2	Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.
W.9-10.2b	Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience’s knowledge of the topic.
W.9-10.2d	Use precise language and domain-specific vocabulary to manage the complexity of the topic.

What's the Matter, continued

Code	Common Core State Standard
W.9-10.3a	Engage and orient the reader by setting out a problem, situation, or observation, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events.
W.9-10.3c	Use a variety of techniques to sequence events so that they build on one another to create a coherent whole.
W.9-10.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
W.9-10.7	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
W.9-10.8	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.
W.9-10.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.
W.9-10.9a	Apply <i>grades 9–10 Reading standards</i> to literature (e.g., “Analyze how an author draws on and transforms source material in a specific work [e.g., how Shakespeare treats a theme or topic from Ovid or the Bible or how a later author draws on a play by Shakespeare]”).
W.9-10.9b	Apply <i>grades 9–10 Reading standards</i> to literary nonfiction (e.g., “Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning”).
W.9-10.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.
W.11-12.1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
W.11-12.1a	Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences claim(s), counterclaims, reasons, and evidence.
W.11-12.1b	Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience’s knowledge level, concerns, values, and possible biases.
W.11-12.2	Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

What's the Matter, continued

Code	Common Core State Standard
W.11-12.2b	Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.
W.11-12.2d	Use precise language, domain-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic.
W.11-12.3a	Engage and orient the reader by setting out a problem, situation, or observation and its significance, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events.
W.11-12.3c	Use a variety of techniques to sequence events so that they build on one another to create a coherent whole and build toward a particular tone and outcome (e.g., a sense of mystery, suspense, growth, or resolution).
W.11-12.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
W.11-12.7	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
W.11-12.8	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
W.11-12.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.
W.11-12.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.
WHST.9-10.1	Write arguments focused on <i>discipline-specific content</i> .
WHST.9-10.1a	Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.
WHST.9-10.1b	Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.

What's the Matter, continued

Code	Common Core State Standard
WHST.9-10.2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.
WHST.9-10.2b	Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.
WHST.9-10.2d	Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers.
WHST.9-10.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
WHST.9-10.7	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
WHST.9-10.8	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.
WHST.9-10.9	Draw evidence from informational texts to support analysis, reflection, and research.
WHST.9-10.10	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.
WHST.11-12.1	Write arguments focused on <i>discipline-specific content</i> .
WHST.11-12.1a	Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.
WHST.11-12.1b	Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.
WHST.11-12.2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.
WHST.11-12.2b	Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

What's the Matter, continued

Code	Common Core State Standard
WHST.11-12.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
WHST.11-12.7	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
WHST.11-12.9	Draw evidence from informational texts to support analysis, reflection, and research.
WHST.11-12.10	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.

Great Books Science Reading Selections

Keeping Things Whole

Readings in Environmental Science

Twenty-one selections from key thinkers in ecology, biology, public policy, sociology, history, philosophy, and literature.

Including:

Rules for the Direction of the Mind*
René Descartes

Death of a Pine *Henry David Thoreau*

Man and Nature* *George Perkins Marsh*

The Biosphere* *Vladimir I. Vernadsky*

The Climax Concept *Frederic E. Clements*

The Land Ethic *Aldo Leopold*

The Tragedy of the Commons *Garrett Hardin*

The Closing Circle* *Barry Commoner*

The World's Biggest Membrane
Lewis Thomas

Intricacy* *Annie Dillard*

The Recognition of Gaia*
James E. Lovelock

The End of Nature* *Bill McKibben*

Water Songs *Terry Tempest Williams*

Cutover *Jan Zita Grover*

Dimensions of Deformity
Gordon L. Miller

The Nature of Life

Readings in Biology

Nineteen selections from major scientists that represent the wide range of work in biology.

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Natural Selection *Charles Darwin*

Experiments in Plant Hybridization* *Gregor Mendel*

An Introduction to the Study of Experimental Medicine*
Claude Bernard

The Snout *Loren Eiseley*

Silent Spring* *Rachel Carson*

Rats *Konrad Lorenz*

The Double Helix* *James D. Watson*

The Selfish Gene* *Richard Dawkins*

Just in the Middle *Stephen Jay Gould*

The Diversity of Life* *Edward O. Wilson*

Life from Scum *Lynn Margulis*

What's the Matter?

Readings in Physics

Thirty-one selections provide an overview of how physics has developed through the centuries.

Including:

The Science of Nature *Aristotle*

Falling Bodies and Projectiles *Galileo*

Laws of Motion *Isaac Newton*

On Light *Isaac Newton/Thomas Young*

The Mechanical Equivalent of Heat *James Prescott Joule*

Entropy: The Running-Down of the Universe *Arthur Eddington*

Induction of the Electric Currents *Michael Faraday*

The Science of Electromagnetism
James Clerk Maxwell

Extending the Theories of Physics
Max Planck

$E = mc^2$ *Albert Einstein*

The Special Theory of Relativity
Albert Einstein

Black Holes and Predictable Worlds *Stephen Hawking*

* Indicates a selection taken from a longer work.



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