



Department of Education & Workforce

Literacy Across the Disciplines: Science

Approximate time to complete: 45 minutes

Download the Course Companion document before starting this course. You can use the Companion Document to take notes on your learning, address reflection prompts, and as an easy way to retrieve course resources.

[Literacy Across the Disciplines: Science Course Companion](https://getattachment/Topics/Learning-in-Ohio/Literacy/Literacy-Academy/Literacy-Academy-on-Demand/Grades-6-12/Literacy-Across-the-Disciplines-Science/Course-Companion-LAtD-Science.docx.aspx?lang=en-US) ([/getattachment/Topics/Learning-in-Ohio/Literacy/Literacy-Academy/Literacy-Academy-on-Demand/Grades-6-12/Literacy-Across-the-Disciplines-Science/Course-Companion-LAtD-Science.docx.aspx?lang=en-US](https://getattachment/Topics/Learning-in-Ohio/Literacy/Literacy-Academy/Literacy-Academy-on-Demand/Grades-6-12/Literacy-Across-the-Disciplines-Science/Course-Companion-LAtD-Science.docx.aspx?lang=en-US)).

Learning Objectives:

Participants will be able to:

Understand and explain elements of the Simple View of Reading and how it can support literacy in science classrooms.

Implement classroom tools and strategies to improve students' literacy.

Utilize literacy tools and strategies to improve instruction in science classrooms.

Consider This Scenario

Ms. Sanderson is an 8th grade science teacher at Jefferson Middle School. Her students are currently working on a unit on the ways that external fields such as magnetic or gravitational fields impact objects. This has allowed the students to conduct a number of exciting experiments. Ms. Sanderson would like for her students to learn to read and write "lab reports" that outline the theory of how a field will impact an object, how the experiment was conducted, and the results of the experiment. She has noticed that many student struggle to read through example lab reports. They get caught up on the vocabulary and often come away without an understanding of the key concepts from the report. She also notices that many struggle to write out their own lab reports. She wants to provide some tools and strategies to support students' comprehension and writing, but she is unsure of what would work best for her students.

CONNECTION POINT

In your Course Companion Document, consider these questions:

Can you relate to the above scenario? In what ways are your challenges in literacy instruction similar or different?

How can literacy support learning in science education?

Ohio’s Learning Standards for English Language Arts contain Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12. These standards provide a guide to the knowledge and skills related to reading and writing that students should possess in the sciences to be college and career ready. Students must achieve a high level of literacy to fully comprehend scientific text, complete and evaluate experiments, and report their results.

The table below provides examples for ways that students will need to access literacy skills to fully understand and engage in science content.

HOW STUDENTS NEED LITERACY SKILLS FOR SCIENCE

Strand	Examples in the Classroom
Understanding Key Ideas and Details in Text	Cite evidence from text Analyze technical texts Evaluate explanations for events from multiple texts
Craft and Structure of Text	Determine the meaning of symbols and key terms Analyze an author's purpose for writing Understand how text structures in scientific documents convey information

Strand	Examples in the Classroom
Integration of Knowledge and Ideas	Compare and contrast theoretical and experimental information Assess evidence to support an author's claims Integrate and evaluate diverse sources of information
Range of Reading and Level of Text Complexity	Read science texts at and above grade level Utilize comprehension tools and metacognition to ensure understanding of complex texts

Supporting Science Literacy – Video Presentation with Dr. Joshua Lawrence

In this video presentation, Dr. Joshua Lawrence describes the Simple View of Reading and how strategies for supporting student literacy can increase learning in the sciences. He also provides strategies to support literacy instruction in the science classroom.

Literacy Across the Disciplines Science



Reflection Question: Consider some components of the Simple View of Reading identified by Dr. Lawrence that impact reading in science (background knowledge, reasoning, academic language and vocabulary, searching and sources, literacy knowledge, perspective taking). Which of these elements of effective reading do

you commonly draw on in your classroom? What elements might you begin to employ to more effectively teach your students?

Knowledge Check

Take the brief quiz below to test your knowledge. Click the square button to expand the quiz.

Resources

Disciplinary Literacy in Science: [\(/getattachment/Topics/Learning-in-Ohio/Literacy/Literacy-Academy/Literacy-Academy-on-Demand/Grades-6-12/Literacy-Across-the-Disciplines-Science/Disciplinary_Literacy_Science-LAoD.pdf.aspx?lang=en-US\)](/getattachment/Topics/Learning-in-Ohio/Literacy/Literacy-Academy/Literacy-Academy-on-Demand/Grades-6-12/Literacy-Across-the-Disciplines-Science/Disciplinary_Literacy_Science-LAoD.pdf.aspx?lang=en-US)

This document from Dr. Lawrence provides an overview of content from this course in addition to several tools that can be used in science classrooms to support students' literacy.

Course Reflection

Which of the tools and strategies from the video and handout can you incorporate into your current instruction? What steps do you need to take to do this successfully?

To Learn More

Reading and Writings in the Disciplines (<https://www.learner.org/series/reading-writing-in-the-disciplines/>) by Annenberg Learner:

Reading and Writing in the Disciplines contains video demonstrations of classroom lessons in addition to explanations and resources to support literacy in mathematics, science, English, and social studies.

Standards for Literacy in History/Social Studies, Science, and Technical Subjects, 6-12

(<https://education.ohio.gov/getattachment/Topics/Learning-in-Ohio/English-Language-Art/English-Language-Arts-Standards/ELA-Learning-Standards-2017.pdf.aspx?lang=en-US#page=63>).

Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6-12

(<https://education.ohio.gov/getattachment/Topics/Learning-in-Ohio/English-Language-Art/English-Language-Arts-Standards/ELA-Learning-Standards-2017.pdf.aspx?lang=en-US#page=67>).

Feedback:

Please take a moment to fill out this feedback form (https://forms.office.com/Pages/ResponsePage.aspx?id=xPz4UNiUB0-E6zbtV8flogYC_CKDPvZNhqLPj1rTGIJUNUhpVEdRVkIaOFYzNkdYNTIRUjI1T1NNRi4u). We will use your feedback to improve this and other courses.

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