Common Core
Georgia Performance Standards

Literacy in History, Social Studies, Science and Technical Subjects for Middle School

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Georgia Department of Education
Welcome

Reading and Writing in the Science Classroom

Presenters:
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Mary Lynn Huie, Ph.D.
Susan Jacobs
Body of Research
Science Proficiency

Students who are proficient in science:

1. Know, use, and interpret scientific explanations of the natural world;

2. Generate and evaluate scientific evidence and explanations;

3. Understand the nature and development of scientific knowledge; and

4. Participate productively in scientific practices and discourse.
1. How can students’ work in literacy support their understanding of science?

2. How can their work in science actually improve literacy skills?

Negotiating Science: The Critical Role of Argument in Student Inquiry
Sample Lesson
Processes that Cause Erosion
by Jodi Wheeler-Toppen, Ph.D.
Literacy Design Collaborative

by Mary Lynn Huie, Ph.D.
What is LDC?

- LDC tools embed Common Core Literacy Standards into content-area lessons so that students meet the Literacy Standards while also meeting content demands at high levels of performance.
How does LDC work?

- LDC templates help teachers write content-specific Teaching Tasks that require reading and writing to complete.
- LDC tools then help teachers identify the literacy skills students will need to complete the assigned Teaching Tasks.
- The templates then suggest instruction to help students acquire those skills.
A Good Teaching Task Should--

- Challenge students to engage in a substantial issue within the academic discipline,
- Model high levels of thinking, reading, and writing,
- Require work that will challenge students’ thinking and literacy practices beyond what they can already do without teaching support.
Templates for the Teaching Tasks

Teachers fill in the template to create a teaching task—a major student assignment to be completed over two or more weeks.

The content can be science, history, language arts, or another subject.
How It Works

An Example: Template 1

Task 1 Template (Argumentation/Analysis L1, L2, L3):
After researching ___________(informational texts) on _____________(content), write ____________ (essay or substitute) that argues your position on______ (content). Support your position with evidence from your research. L2 Be sure to acknowledge competing views. L3 Give examples from past or current events or issues to illustrate and clarify your position.
Science Teaching Task
(Argumentation/Analysis)

After researching ____________________ on __________, write an ___________ that argues your position on ____________________ . Support your position with evidence from your research. **L2** Be sure to acknowledge competing views. **L3** Give examples from past or current events or issues to illustrate and clarify your position.

Dr. John D. Barge, State School Superintendent
“Making Education Work for All Georgians”
Template 25 (Informational/Cause Effect)

- Template 25: **[Essential Question]** After reading [literature or informational texts] on [content], write a [report or substitute] that examines the causes of [content] and explains the effect(s) of [content]. What conclusions or implications can you draw? Support your discussion with evidence from the text(s).
A Middle School Science Task

- What is the effect of algal blooms on the marine environments off the coast of the US? After reading selected scientific texts, write a letter to the Ecological Society of America that examines the causes of algal blooms and explains the effect(s) on marine environments. What conclusions or implications can you draw? Support your discussion with evidence from the text(s).
Georgia Science Standards

• S7L4. Students will examine the dependence of organisms on one another and their environments.

• e. Describe the characteristics of Earth’s major terrestrial biomes (i.e. tropical rain forest, savannah, temperate, desert, taiga, tundra, and mountain) and aquatic communities (i.e. freshwater, estuaries, and marine).

• S7CS9. Students will investigate the features of the process of scientific inquiry.

• b. Scientific investigations usually involve collecting evidence, reasoning, devising hypotheses, and formulating explanations to make sense of collected evidence.
LDC Skills Analysis

The LDC design team offers a sample list of skills that teachers can consider and then:

★ Use without changes
★ Use with changes
★ Replace with another list based on their judgment about their task and their students
Instructional Ladders

- The LDC templates include mini-tasks that help students acquire the necessary skills. Teachers are free to adopt or adapt the mini-tasks and the order in which they are presented within the Skills Cluster.
Galileo

• “Oceans of Trouble.” 1000L
  *Current Health Teens* (Oct 2010)—Kowalski, Kathiann M.

• “The Last Word.” 1080L
  *New Scientist* (8/23/2003)—Small, Richard; Barter, Guy; Jakson, David

• “The Rise in Toxic Tides.” 1140L
  *Science News* (09/27/97)—Mlot, Christine
Our goal for 2012-13 is to have excellent examples of LDC Instructional Modules available to Georgia teachers of ELA, history/social studies, science, and technical subjects. Teachers will be able to adopt the modules as they are or adapt them for their own instructional needs.

We also expect to have a strong corps of teachers and RESA/GLRS specialists trained for delivering in-services in their schools, their districts, and neighboring districts.
Three Sets of Standards

- College and Career Readiness Standards
- Common Core Georgia Performance Standards (CCGPS)
- Literacy Standards for History/Social Studies, Science, and Technical Subjects
How the Standards Compare

**CCRR2**: Determine *central ideas* or themes of a text and analyze their development; summarize the key supporting details and ideas.

**ELACC7RL2**: Determine a theme or *central idea* of a text and analyze its development over the course of the text; provide an objective summary of the text.

**L6-8RST2**: Determine the central ideas or *conclusions* of a text; provide an accurate *summary* of the text distinct from prior knowledge or opinions.
How the Standards Compare

**CCW2:** Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.

**ELACC7W2:** Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.

**L6-8WHST2:** Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
Problems with Content Area Reading

- Literacy is not as generalizable as once thought
- Some practices make no sense in content disciplines
- Generic strategies are less helpful to struggling readers
- Pre-service teachers may resist non-disciplinary courses
Why Disciplinary Literacy?

- College and career ready students to be proficient in reading complex informational text independently in a variety of content areas
- Required reading in college and workforce training programs is informational in structure and challenging in content
- Postsecondary education programs provide students with both a higher volume of such reading and comparatively little scaffolding

The addition of specific Literacy Standards for content areas beyond the language arts classroom is designed to address and ensure this critical interdisciplinary approach
The Standards

http://www.doe.k12.ga.us/Curriculum-Instruction-and-Assessment/Curriculum-and-Instruction/Pages/CCGPS.aspx
## Science Literacy

<table>
<thead>
<tr>
<th>ELA</th>
<th>Science</th>
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</thead>
<tbody>
<tr>
<td>Context sometimes important</td>
<td>Context usually not important</td>
</tr>
<tr>
<td>Author and author’s perspective of primary importance</td>
<td>Facts of primary importance</td>
</tr>
<tr>
<td>Nuance and complexity of language; desire for readers to have more than one interpretation</td>
<td>Clarity and precision of language with a single clear point</td>
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# READING STANDARDS FOR LITERACY IN SCIENCE (RST) GRADES 6-8

## Key Ideas and Details

**ELACC6-8RST1:** Cite specific textual **evidence** to support analysis of **science and technical** texts.

**ELACC6-8RST2:** Determine the central ideas or **conclusions** of a text; provide an **accurate** summary of the text **distinct from prior knowledge or opinions**.

**ELACC6-8RST3:** Follow precisely a **multistep procedure** when carrying out **experiments**, taking **measurements**, or performing technical tasks.

## Craft and Structure

**ELACC6-8RST4:** 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 **grades 6–8 texts and topics**.

**ELACC6-8RST5:** 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.

**ELACC6-8RST6:** Analyze the author’s purpose in providing an explanation, describing a **procedure**, or discussing an **experiment** in a text.
### READING STANDARDS FOR LITERACY IN SCIENCE (RST) GRADES 6-8

<table>
<thead>
<tr>
<th><strong>Integration of Knowledge and Ideas</strong></th>
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<td><strong>ELACC6-8RST7:</strong> 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).</td>
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<tr>
<td><strong>ELACC6-8RST8:</strong> Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.</td>
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<tr>
<td><strong>ELACC6-8RST9:</strong> Compare and contrast the information gained from experiments, simulations, video or multimedia sources with that gained from reading a text on the same topic.</td>
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<th><strong>Range of Reading and Level of Text Complexity</strong></th>
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<tr>
<td><strong>ELACC6-8RST10:</strong> By the end of grade 8, read and comprehend science/technical texts in the grades 6–8 text complexity band independently and proficiently.</td>
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</table>
Survey

Thank you for participating in this CCGPS Professional Learning Session. We value your feedback! Please go to the following website, take the anonymous feedback survey, and complete the participation log to receive a certificate of participation:

http://survey.sedl.org/efm/wsb.dll/s/1g10a
We look forward to hearing from you!

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CCGPS
Common Core Georgia Performance Standards
THANK YOU