Contact Information

Rachel Lang Daniels
Adolescent Literacy Specialist
SST 11, ESC of Central Ohio
Rachel.Daniels@escco.org
614.542.4188
Participant Outcomes

To understand the concept of disciplinary literacy as outlined in Ohio’s Plan to Raise Literacy Achievement

To explore how knowledge is constructed within the disciplines

To discuss practices in order to implement disciplinary literacy in Science and Mathematics
Opening Reflection

What is Disciplinary Literacy?

Disciplinary literacy moves beyond the common strategies used across all content areas and focuses on the unique strategies experts use to engage with text in an academic discipline.

(Shanahan, 2012)

- Create
- Communicate
- Evaluate
Adolescent Literacy
Scarborough’s Reading Rope

Strands of Early Literacy Development

Language Comprehension
- Background Knowledge (facts, concepts, etc.)
- Vocabulary (breadth, precision, links, etc.)
- Language Structures (syntax, semantics, etc.)
- Verbal Reasoning (inference, metaphor, etc.)
- Literacy Knowledge (print concepts, genres, etc.)

Word Recognition
- Phonological Awareness (syllables, phonemes, etc.)
- Decoding (alphabetic principle, spelling-sound correspondences)
- Sight Recognition (of familiar words)

Skilled Reading: Fluent execution and coordination of word recognition and text comprehension.

We now know that phonemic awareness is a language ability (Wieder & Tees, 2002; Kuhl et al., 2005; Kenner et al., 2017)
## Evidence-Based Practices

<table>
<thead>
<tr>
<th>Practice</th>
<th>Evidence Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide explicit vocabulary instruction</td>
<td>Strong Evidence</td>
</tr>
<tr>
<td>Provide direct and explicit comprehension strategy instruction</td>
<td>Strong Evidence</td>
</tr>
<tr>
<td>Provide opportunities for extended discussion of text meaning and interpretation</td>
<td>Moderate Evidence</td>
</tr>
<tr>
<td>Increase student motivation and engagement in literacy learning</td>
<td>Moderate Evidence</td>
</tr>
<tr>
<td>Make available intensive and individualized interventions for struggling readers that can be provided by trained specialists</td>
<td>Strong Evidence</td>
</tr>
</tbody>
</table>

Increasing Literacy Specialization

- Basic Literacy
- Intermediate Literacy
- Disciplinary Literacy

Shanahan (2008)
Learning from the experts
How to create a culture of schoolwide DL

- Do students think critically and solve problems?
- Do students read every day in class?
- Do students write every day in class?
- Do students hear complex text read aloud in every discipline?
- Do students collaborate to find, evaluate, and apply new learning?
- Do students inquire by asking more questions than they answer?

from Disciplinary Literacy in Action by Releah Lent (2019)
In Every Class, Every Day

Disciplinary Literacy

- Write
- Read
- Discourse

Disciplinary Literacy
Discussion

In what ways do Scientist and Mathematicians create, communicate and evaluate information?

What texts are read? What kinds of writing is utilized? In what ways are communication skills critical in these disciplines?
Supporting Claims with Evidence and Reasoning
## Disciplinary Literacy Approaches

**Introduction:** This document provides examples of discipline-specific approaches and resources as related to disciplinary literacy.

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Approach</th>
<th>Practices</th>
<th>Vocabulary Examples</th>
<th>Resources</th>
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</table>
| **Social Studies** | Historians consider multiple perspectives when reading and writing historical accounts and arguments. | • Notice source and context.  
• Analyze accounts that present conflicting interpretations.  
• Reference language of causality and chronology  
• Determine how ideas are communicated.  
• Approach texts specific to purpose and text source.  
• Writing argumentative texts using accurate historical data. | • Primary  
• Secondary  
• Source  
• Causality  
Disciplinary Literacy Strategies in Content Area Classes (Shanahan, 2015, p. 8-15)  
Stanford History Education Group (SHEG): Historical Thinking Chart  
Thinking Like a Historian (Wineburg, 2010) |
| **Mathematics**  | Mathematicians read carefully, evaluating the meaning of each word or symbol and apply logic to their reading.  
Mathematicians use precise vocabulary to describe and defend their work. | • Learn accurate definitions  
• Reread  
• Read equations with appropriate directionality  
• Detect errors  
• Read for evidence and interpret visuals  
• Identify representation  
• Express regularity in repeated reasoning | • Difference  
• Distribution  
• Properties  
• Expression  
• Terms  
• Factorization  
Disciplinary Literacy Strategies in Content Area Classes (Shanahan, 2015, p. 3-5)  
A Literature Review on Disciplinary Literacy: How do Secondary Teachers Apprentice Students into Mathematical Literacy? (Hillman, 2013)  
Tennessee Math Standards, pp. 9-12 |
Discussion--Science

At your table discuss your observations from the video as well as the approaches, practices and vocabulary noted in the Disciplinary Literacy Approaches document.
Thinking like a Mathematician
## Reflect on Mathematics

### Disciplinary Literacy Approaches

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1 Reference to any resource, organization, activity, product, or service does not constitute or imply endorsement by the Tennessee Department of Education.
Discussion--Mathematics

At your table discuss your observations from the video as well as the approaches, practices and vocabulary noted in the Disciplinary Literacy Approaches document.
## Writing in the Disciplines

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<th>Mathematicians</th>
</tr>
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<tbody>
<tr>
<td>Compose in phrases, bullets, graphs, or sketches</td>
<td>Explain, justify, describe, estimate or analyze</td>
</tr>
<tr>
<td>Use precise wording</td>
<td>Use representations</td>
</tr>
<tr>
<td>Favor passive voice</td>
<td>Seek precision</td>
</tr>
<tr>
<td>seek exactness over craft</td>
<td>Utilize real-world situations</td>
</tr>
<tr>
<td>Communicate in a systematic format</td>
<td>Communicate ideas clearly</td>
</tr>
<tr>
<td>Distinguish facts from opinions</td>
<td>Draw conclusions</td>
</tr>
<tr>
<td>Generate questions</td>
<td>Use symbols and abstractions</td>
</tr>
<tr>
<td>Provide details, narratives and causal effects</td>
<td>Include reasons and examples (p. 278)</td>
</tr>
<tr>
<td>Use technical language (p. 282)</td>
<td></td>
</tr>
</tbody>
</table>

*Disciplinary Literacy in Action*

Lent and Voight (2019)
Closing Reflection

Confirm or correct what you know about disciplinary literacy. Share with a colleague.
Resources to Explore
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