Disciplinary literacy is an emphasis on the shared ways of reading, writing, speaking, and thinking within a particular content area or academic field.

LEVEL OF DIFFICULTY:

☒ Emerging (K–2)
☐ Expanding (3–6)
☐ Bridging (6–8)
☐ ELL

FOCUS AREA:

☐ Career and Technical Education
☐ College and Career Readiness
☐ ELA
☐ Health
☒ Math
☒ Science
☐ Social-Emotional Learning
☒ Social Studies
☐ STEM
☐ Technology

AVID's WICOR® Methodology

This lesson uses the WICOR (Writing, Inquiry, Collaboration, Organization, Reading) methodology and strategies from AVID's curriculum library and is designed for a variety of learning environments.

AVID Elementary Weekly Resources

Visit the AVID Elementary Weekly matrix for links to lessons, articles, and additional resources.

CREATED IN PARTNERSHIP WITH | NATIONAL GEOGRAPHIC

Seeking Solutions

By Simone T. Ribke

AVID's Critical Reading Process

This lesson uses the three phases of the critical reading process.

1 ACTIVATE

Planning for Reading
Establish a purpose for reading. Then, intentionally identify strategies that are needed to successfully read the text. Both content and skill development play a role in planning, as does identifying how a "content expert" would read the text.

Selecting the Text
Educators will select texts initially, with the goal being that students will eventually play a role in the selection process. To maximize the effectiveness of texts, use the suggested text-selection criteria to identify the ideal text.

Pre-Reading
Determine what work needs to be done prior to the successful reading of a text. Preview the text and connect to or build background knowledge by looking both inside and outside the text.

2 ENGAGE

Building Vocabulary
Understand and connect key academic and content-related vocabulary to aid in deeper comprehension of the text.

Interacting With the Text
Interact with the text to process information as it is read, including numbering paragraphs or chunking texts, marking texts to isolate key information, writing in the margins, questioning, and visualizing texts. Usually, a deeper processing of a text occurs over multiple reads with varying purposes for each read.

3 EXTEND

Extending Beyond the Text
Utilize the text to complete the assigned academic task. "Extend" strategies focus on the development of academic thinking skills such as apply, analyze, evaluate, and synthesize.

Academic Task:

Examine the interactive text "Seeking Solutions," which focuses on science, math, and social studies, through marking the text as a content expert to engage in a Socratic Seminar.

Learning Objectives:

- Students will examine the text to identify a theme or topic with supporting details.
- Students will utilize concepts from the text to engage in collaborative discourse to answer the Essential Question.

Essential Question:

What are environmental scientists, and how does their work protect our world?

Focused Note-Taking: A variety of note-taking formats may be utilized throughout the stages of the critical reading process, including two-column notes. Consider using a fillable template available in the Teacher Resources section of the AVID Elementary Weekly website.

Getting Started:

Estimated Preparation Time: 20 minutes

Instructional Time: 75–90 minutes

Resources Needed:

- Please see the AVID Elementary Weekly matrix for links to the Student and Educator Resources mentioned here in a variety of formats.
- Visit the Blended Learning Toolkit on the AVID Elementary Weekly Teacher Resources webpage for ideas, tools, and tip sheets supporting learning and collaboration within your blended learning environment.
- Chart paper for whole-group modeling
- The "Seeking Solutions" interactive text from National Geographic, linked below and on the AVID Elementary matrix.
    - Interactive Text

ACTIVATE

Establish a purpose for reading, build background knowledge, and set students up for success.

PLANNING FOR READING

Restate the academic task and identify the strategies that will be needed to successfully engage with the text. Recognize where students are in the gradual release of responsibility; decide whether this activity will be modeled with the entire class, in small groups, or with students working individually; and identify opportunities for blended learning. *See the Teacher Resources page for more information about AVID instructional methodologies and blended learning.*

Think through or have students respond to the following questions and identify how the chosen text fits within the broader context of your instructional unit so students are making connections to their prior knowledge.

- How does the text fit into the overall instructional unit or overall learning experience?
- What technology skills and knowledge will students need to access the text and complete the academic task?

SELECTING THE TEXT

This text meets the following features of an ideal text:

☐ Rigorous
☐ Develops key content or academic thinking skills
☒ Length is appropriate for the purpose
☐ Format allows for interaction
☒ Balanced perspective or multiple viewpoints
☐ Culturally relevant

- The length of this text lends itself to modeling how to identify and read an excerpt of a text to accomplish the reading purpose.
- Engagement with this text fosters inquiry and curiosity.

PRE-READING

Focused Note-Taking

Allow students an opportunity to set up their notes and record the Essential Question before engaging in the learning.

Text-to-Text, Text-to-Self, Text-to-World

1. Have students think about and conduct a quickwrite or quickdraw in response to the following prompt: "What are you wondering about this topic?"
2. Visit the Blended Learning Toolkit and select a digital tool from the "Learning Together" category. Have students share their responses and connections with a partner using a platform appropriate for blended learning.

ENGAGE

Build vocabulary and engage in purposeful rereads.

BUILDING VOCABULARY

Vocabulary development can happen at any point in the reading process.

- **Academic words:**
  - seeking (p. 8)
  - environmental (p. 9)
  - chemicals (p. 9)

- **Content-area words:**
  - pollution (p. 9)
  - wastewater (p. 9)
  - dead zone (p. 9)

Extended Definition Paragraph

1. A key concept in this text that is crucial to the overall understanding of the text is finding solutions to water pollution. Guide the whole class through creating a concept map as a brainstorming strategy to collect their thoughts around the definition and use of the concept using the following guiding questions:
   - How is the term used in the text?
   - What is your personal connection with the term?
   - Why should your classmates care about this term?
2. Ask students to write a paragraph or draw an illustration that addresses the designated guiding questions using a digital tool if teaching within a blended learning environment.

INTERACTING WITH THE TEXT

Students process information during this stage. Purposeful rereads are essential for learning.

First Read: Read for the Gist

Have students read the text "Seeking Solutions" on pages 8–10 one time through to identify the main idea, or for scaffolding teachers may conduct a read aloud or have students use the audio function in the interactive text. This is a "pencil-down, digital-ink-free" read.

1. Pair students up with elbow partners or small groups to discuss what they got from the first read.
2. Ask students to capture the main idea that sums up the gist of the text in their notes.
3. If students are struggling to identify the main idea, ask that they identify the 5 W's (who, what, where, when, why) and the H (how). This can be modeled, done with a partner, or done individually.

Second Read: Get Organized

Review pages 8–10 in the interactive text. As you review each page, ask students to identify key information by adding thoughts, questions, drawings, or new learning to their notes, identifying the page it came from. This can be completed individually or as a whole class with teacher modeling.

Purposeful Reread:
Marking the Text as a Content Expert

1. Distribute *Student Resource: Mark the Text Like a _____*. Have students read the text like a scientist. For scaffolding, all seven steps can be done as a whole class with teacher modeling.

2. Next, if there is a specific reading purpose or academic task, have students define it in the space provided at the top of the handout.
3. Have students brainstorm what they might need to do for each of the "distinct marks" based on the specific discipline or text as they mark the text like a content expert.
4. In the "explanation" column, students can add specific notes or details to clarify how they will utilize each distinct mark when they mark the text like a content expert.
5. Once students have defined their distinct marks and explained them in more detail, ask them to collaborate and share their marks with another group then revise their thinking if needed.
6. Once the handout has been completed and revised, ask students to use it to reread the text and mark their notes as they noted on the handout to demonstrate the reading purpose and answer the Essential Question.
7. After they have read and marked the text, ask students to add new learning and discoveries from the reread to their notes.

EXTEND

Reading tasks should be directly connected to what students will do with the text after they have read and understand it.

EXTENDING BEYOND THE TEXT

This stage uses the text to develop academic thinking skills.

ACADEMIC THINKING SKILLS:

☐ Analyze
☐ Evaluate
☐ Synthesize
☒ Apply

Socratic Seminar

1. Discuss the purpose and format of the Socratic Seminar with students. Refer to the Socratic Seminar core strategy webpage for additional instructional guides.
2. The teacher will begin the Socratic Seminar with the Essential Question: "What are environmental scientists, and how does their work protect our world?" The Essential Question can be broken down into two parts: "What are environmental scientists?," and "How does their work protect our world?"
    - Optional Questions:
        - If you were an environmental scientist, what would you do?
        - What things can you do to protect our world?
3. Provide students with academic language scripts to use during the Socratic Seminar (see *Student Resource: Academic Language Scripts*/*Educator Resource: Academic Language Scripts for Socratic Seminar*.
4. Share, or co-create with students, a word bank for the Socratic Seminar.
5. Arrange students into the type of Socratic Seminar they will be engaging in (one large seminar, inner/outer circle, pilot/co-pilot, or simultaneous) with the word bank visible, or use a strategy from the "Making Thinking Visible" section of the Blended Learning Toolkit to help facilitate discussion. Consider using *Educator Resource: Cats and Fish Cards* to help get the students arranged. The sentence stems on one side of the cards can be used to support the discussion.
6. Students should bring the necessary materials for participating in the Socratic Seminar with them: their marked text, questions, their cat or fish cards, *Student Resource: Observation Checklist for Socratic Seminar*, and note-taking implements.
7. Have students zip around the circle, reading one of their questions, or for scaffolding the teacher may begin with the Essential Question. The group selects an opening question and begins their discussion.
8. The discussion continues as group members ask clarifying questions or offer responses, with students building upon the comments and analysis of others using their academic language scripts.

9. Pause periodically for pilot/co-pilot discussion or for students to switch roles.
10. End the Socratic Seminar with an oral or written debrief and reflection upon the process. Students should add this written reflection and summary to their notes.