

Optimizing Science Literacy

A structured framework for extracting evidence and decoding complex scientific vocabulary.

Module 1: The Architecture of Scientific Texts

Reading scientific texts requires a methodical approach. Learners often experience cognitive overload when faced with dense data and unfamiliar terminology. By applying a structured framework, we can optimize retention and effectively close knowledge gaps. This guide provides the instructional flow necessary to transition learners from passive readers to active analysts.

Step 1: Implement the Digital Highlighter Strategy: To reduce extraneous cognitive load, learners should utilize a strict color-coding system when annotating digital texts. This relies on the signaling principle to guide attention directly to essential information.

"Instructional theory dictates that visual signaling reduces the mental effort required to search for information, allowing the learner to focus on meaning."

Step 2: Utilize Concept Circles for Vocabulary: Rote memorization is inefficient. Instead, learners will use Concept Circles to visually map the relationships between scientific terms.

- **Define It:** Establish the clinical definition.
- **Draw It:** Create a visual representation to support multiple means of representation.
- **Connect It:** Link the terminology to prior knowledge or bilingual translations.
- **Use It:** Apply the vocabulary in an evidence-based explanation.

SOURCE: BUILDING SCIENCE LITERACY SKILLS CURRICULUM, 2026.