

Common Core State Standards for English Language Arts: K-12 Close Reading Task

Text grade band placement:
9-12

Text	Text Complexity Analysis
<p>Title: “Antifreeze-Like Blood Lets Frogs Freeze and Thaw With Winter's Whims”</p> <p>Author: John Roach</p> <p>Citation/Publication info: Roach, J. (Feb. 20, 2007). “Antifreeze-Like Blood Lets Frogs Freeze and Thaw With Winter's Whims.” <i>National Geographic News</i>.</p> <p>Link: http://news.nationalgeographic.com/news/2007/02/070220-frog-antifreeze.html</p>	<p>Quantitative: Lexile: 1150L</p> <hr/> <p>Qualitative: This article contains section headings and graphics to aid in understanding the key concepts. There is extensive scaffolding built in to assist with vocabulary.</p> <hr/> <p>Reader and Task: This is a great article for illustrating the concept of adaptation. It is more complex in that students would need prior knowledge in both cell structure and cell function to understand this particular adaptation. It would be helpful if students understand the properties of matter.</p> <hr/> <p>Overall notes for this section: There are many tie-ins for further study including cryogenics and organ transplants.</p>

ELA/Literacy Common Core Standards addressed by task*

CCSS.ELA-Literacy.CCRA.R.1 Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

CCSS.ELA-Literacy.CCRA.R.2 Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.

CCSS.ELA-Literacy.CCRA.R.4 Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.

CCSS.ELA-Literacy.CCRA.R.5 Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.

CCSS.ELA-Literacy.CCRA.R.7 Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.

CCSS.ELA-Literacy.CCRA.W.2 Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.

CCSS.ELA-Literacy.CCRA.W.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.

What key insights should students take from this text?

- How to distinguish between behavioral and physical adaptations
- Environmental factors are causes of diversity and adaptation of organisms.
- Adaptations enable organisms to survive within a specific ecosystem.

Text-Dependent Questions

- In what way could the freeze and thaw cycle of the wood frog impact human medicine?
- Drawing on the evidence in the article, what is the significant difference between the cell function of humans and frogs?
- According to the article, why don't wood frogs just shrivel up and die exhibiting severe hypothermia?
- In what ways does the authors' use of graphics, section headings and citing of scientific research enhance your understanding of this adaptation?
- The article states that the water in the blood freezes first. Why doesn't the frog burst?

Writing Mode	Writing Prompt
Informative/explanatory	Scientists in the article use the term “freeze-frost cycle” to describe what happens to wood frogs in the winter. Using details from the text, explain how the article develops the term “freeze-frost cycle.” What does it mean, and how does it connect to the concept of adaptation?

*Because these tasks apply across multiple grades, they are aligned to the College and Career Readiness Anchor Standards (CCRA). R stands for Reading, W for Writing, SL for Speaking and Listening, and L for language.

Scaffolding and support for special education students, English language learners, and struggling readers:

The use of graphic organizers, modeling, think-alouds, and academic previewing strategies should be utilized to assist struggling readers. The classroom teacher and special education teacher should work collaboratively to provide successful instruction. In addition, a student-created word wall and cooperative peer tutoring will reinforce content vocabulary (Tier 3) throughout the learning unit.

How this task supports the content standards for relevant subject area courses in this grade band

This task would be appropriate for a biology I or biology II course.

Biology I:

Standard 1 – Cells

CLE 3210.5.1 Associate structural, functional, and behavioral adaptations with the ability of organisms to survive under various environmental conditions.

CLE 3210.5.2 Analyze the relationship between form and function in living things.

CLE 3210.5.3 Explain how genetic variation in a population and changing environmental conditions are associated with adaptation and the emergence of new species.

Biology II:

CLE 3216.2.3 Describe the varying degrees to which individual organisms are able to accommodate changes in the environment.

CLE 3216.2.4 Distinguish between the accommodation of individual organisms and the adaptation of a population to environmental change.

CLE 3216.4.4 Describe the relationship among genes, the DNA code, production of protein molecules, and the characteristics of an organism.