

UNIT: TUBERCULOSIS

LESSON 2: IMMUNE SYSTEM ACTIVATE!



Overview

Through the following activities, students will gain insight into the processes used by the scientific community which brings together experts from diverse fields to evaluate and assess the quality, validity, and significance of a research study before it is submitted to a scientific journal or presented at a conference. In *Activity 2A, The Key to Treating TB*, students will assume the role of peer reviewers. They will work individually or in groups to read and discuss the paper, using context clues to define key terminology. In *Activity 2B, Stairway to Discovery, Raising the Bar for Graph Analysis*, students will use the article to process and analyze the data and interpret the data, providing evidence to support the study's conclusions.

Education Standards

Texas Essential Knowledge & Skills (TEKS)

Middle School TEKS	
7th Grade	7.13 A; 7.2 B; 7.4 C
8th Grade	8.4 B; B.4 A; B.5 D

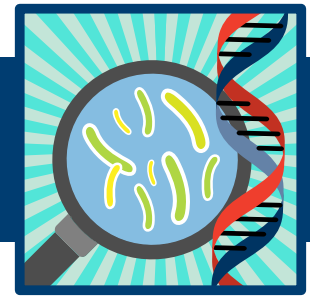
High School TEKS	
Biology	1F, 2B, 4A&B, 5A, 6C

Next Generation Science Standards (NGSS)

High School	HS-LS1-2
Middle School	MS-LS1-1, MS-LS1-3

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Transformed Article: Immune System Activate!

The medications used to treat TB have harsh side effects. In this article scientists explore ways to boost the immune system to reduce TB medication dosage.

Activities

ACTIVITY 2A: THE KEY TO TB

Students will: read the student background information for *Activity 2A* and the article *Immune System Activate! Tackling Drug-Resistant M.tb*. The students will identify unfamiliar terms and use context clues from both the Student Background and the transformed article to define these words.



Teacher Notes: The background information can be read as a class, individually, or within groups. Students need to be advised that the vocabulary terms may not be directly defined “word-for-word”. Students may be challenged to extrapolate their own definitions of unfamiliar terms.

SUGGESTIONS: This activity can support reading stamina and lends itself well to cross-curriculum activities with ELAR. This activity can be done as a whole group activity or divided the class into smaller groups of 3 to 4 students. It may be beneficial to provide students with note taking support or guidance.

ACTIVITY 2B: RAISING THE BAR FOR GRAPH ANALYSIS!

Students will: view a prepared PowerPoint as a class. Slide by slide, a graph from the TB article is revealed. Each slide has guiding questions prompting students to share their observations with each slide. Throughout this activity, students will develop/reinforce data analyzing skills such as identifying relationships between dependent and independent variables, identifying patterns, and predicting patterns. Slow reveal graphs are designed to strengthen students’ ability to critically evaluate graphical data.



Teacher Notes: To complete the activity students need to read the transformed article. The article can be read before or after engaging with the slow reveal graph presentation.

SUGGESTIONS: There may be new vocabulary terms and sentences that may be challenging to students. Consider doing activity 2A peer review to increase their knowledge of the key terms in the article.