

Engaging Contexts Data Integration

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**Data Source:** The data sources that I have selected for this assignment are Current Cigarette Use Among Adults Among Adults (Behavior Risk Factor Surveillance System) 2017 and Excise Tax Rates on Packs of Cigarettes (CDC STATE System Tobacco Legislation – Tax) 2019 from the Centers for Disease Control and Prevention website. The links are:

<https://www.cdc.gov/statesystem/cigaretteuseadult.html>

<https://www.cdc.gov/statesystem/excisetax.html>

**Lesson Enhancement:** In my 7<sup>th</sup> grade life science class, we discuss body systems towards the end of the year. Two of those systems that we talk about are the circulatory system and respiratory system, both of which are negatively affected by the use of tobacco products. These data sources enhance this topic in that it shows a real world extension of the content. Learning the body systems can become boring for students in that most times, teachers only focus on the different parts of the system and where they are located in the body. Additionally, I have noticed students are more engaged when they analyze real data. I believe it allows them to see how what they are learning in the classroom has real applications. Instead of just knowing the diagrams of the circulatory and respiratory systems and the names of the parts that make up each, students can take this knowledge a step further and discover how people and chemicals can harm these systems. Using these data sources shifts the focus of the learning from rote memorization to critical thinking and analysis of the content.

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**Using Data:** Data are engaging tools that enable students to connect content learned in the classroom to the real world. I believe that data are essential in any classroom and teachers should make it a priority to use data in the classroom. Not only can data be used to show students the real world applications of the content, it can also be used to help students work on their analysis skills. No matter what field students go into in the future, knowing how to look at and interpret a picture, graph, or set of numbers will be a skill that students will need to have in order to be successful. Analyzing data helps students to sharpen their critical thinking skills as well. Data are also engaging and draw students into the content.

**Rationale:** I will use these data sources in my classroom after teaching about the circulatory respiratory systems. Students will then be asked to look at the connection between the current cigarette usage among adults and the tax rates on cigarettes in the state of New Jersey. Students will then choose five other states that they would like to analyze and look at the same maps. The main goal is for students to conclude if a higher tax rates has any influence on the number of adults buying cigarettes. Students will also be asked to look into the legislation in New Jersey and two other states from the five they chose previously. This activity could probably be done over four or five days.

**Interdisciplinary STEM:** This data analysis activity aids integration across STEM content. These data are directly related to science and will be done in science class. Students need to draw from their knowledge of the circulatory and respiratory systems. Technology is included in that students will need to access the maps and data sets on a computer. Math is involved because of the inclusion of percentages and being able to compare and contrast the percentages of adults

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who use cigarettes and the tax rates on cigarettes. Not only does these data allow for integration across STEM content, it also touches on other content areas as well. Economics is included in the comparison of tax rates. Students could be taught a lesson on taxes and why the government decides to place taxes on certain items. Social studies is touched upon when students are asked to research recent legislation passed in New Jersey and two other states. There are many opportunities and examples of how these data sources allow students to see the interconnectedness of all the subjects.