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Week 8: Public Environment & Health

Module 5: Vaping Prevention

Lesson: What Is Really in a Vape?

Lesson Overview

Students investigate what is inside e-cigarette aerosol and evaluate common claims about vaping using evidence from the module. They gather evidence, revise their thinking, and apply their learning to a real-world communication task. Understanding how to evaluate health claims helps students make informed decisions when they encounter information about vaping.

Learning Targets

Explain what is inside e-cigarette aerosol.

Evaluate claims about vaping using evidence.

Make and defend a health decision using cause-and-effect reasoning.

Vocabulary

Aerosol
 tiny particles and chemicals in the air that are breathed in

Nicotine
 an addictive drug that affects the brain

Addiction
 when the body depends on a substance

Toxin
 a harmful chemical

Materials

Module
 Student response
 sheets
 Whiteboard or chart
 paper

Instructional Notes

This lesson builds on students' experiences evaluating information and introduces vaping as a health topic where appearance, marketing, and evidence do not always match reality. Students move from making assumptions based on what products look like to evaluating claims using evidence.

The key conceptual shift is understanding that vaping aerosol is not harmless water vapor. Students may enter the lesson believing vaping products are safer because they often look modern, flavored, or different from traditional cigarettes. Through the module, students discover that vaping aerosol can contain nicotine, heavy metals, toxic chemicals, and other substances that affect the body. The application activity requires students to determine which evidence is most important and communicate it clearly to a younger student. This keeps the task authentic while preserving student ownership of the thinking. The lesson progression is: curiosity and questions → evidence gathering → revised understanding → evidence-based communication.



Learning Experience

8 min	Opening	The teacher displays the prompt, “Companies spend millions of dollars every year trying to convince people to buy certain products. Why?” Students are given brief think time. The teacher then invites students to discuss, “What makes people want to try a product for the first time?” The teacher displays images or descriptions of the following: USB drive, Marker, Highlighter, and Flash drive. Students are asked, “Which of these items do you think might be banned in some schools?” and are allowed to make predictions. The teacher then reveals, “All of these are examples of products that e-cigarettes have been designed to resemble.” Students are asked, “Why would a company want a product to look like something completely different?” “What do you notice?” and “What questions does this raise for you?” Student questions are recorded without answering them. The teacher tells students, “Today, you will investigate what these products actually contain and why understanding the evidence matters.” Students discuss why companies advertise products, make predictions about the objects, share observations, generate questions, and identify information they would need before making conclusions.
15 min	Module	Focus: What is inside vaping aerosol, how nicotine affects the body, and why vaping can be harmful. Guiding Questions: • What substances are in vaping aerosol? • How does nicotine affect the brain and body? • What health risks are connected to vaping?
15 min	Application	The teacher displays the scenario: “Your younger cousin sends you a text: ‘Someone at school told me vaping is basically flavored water vapor. Is that true?’ Your cousin wants your advice.” The teacher tells students, “Use evidence from the module to write a response text. Your goal is to help your cousin make an informed decision using accurate information.” The teacher displays evidence from the module: • E-cigarettes produce aerosol, not water vapor. • Aerosol can contain nicotine. • Aerosol can contain heavy metals such as nickel, tin, and lead. • Aerosol can contain toxic chemicals and cancer-causing chemicals. • Nicotine is highly addictive. • Nicotine can affect brain development during adolescence. • Vaping does not reduce stress and nicotine can make stress feel worse. As students work, the teacher circulates and asks, “What evidence would be most important for your cousin to know?” “Which information best answers the question?” and “What evidence supports your message?” In Step 1: Review the Evidence, students review notes from the module and select evidence that helps answer the cousin’s question. In Step 2: Determine the Message, students decide what information the cousin needs most and identify evidence that supports the response.



		In Step 3: Write the Text, students write a short text response to the cousin and use evidence from the module to support the message. In Step 4: Compare and Revise, students share the text with a partner and revise the message if additional evidence strengthens it.
2 min	Reflection	Why is it important to use evidence when deciding whether a health claim is trustworthy?
2 min	Career Connections	Public health professionals evaluate health claims and communicate evidence to the public. They investigate how substances affect the body, identify misinformation, and help people make informed decisions. These same skills help students evaluate information they encounter online, in advertisements, and in conversations about health.