

Dear Teacher,

The following tools are additional support to enrich the teaching of the *Heads Up* lesson plan and student article “E-Cigarettes: What You Need to Know”:

- Answer Key for Critical-Thinking Questions and Student Work Sheet
- Academic and Domain-Specific Vocabulary Lists
- Additional Writing Prompts
- Expanded Paired-Text Reading Suggestions
- Expanded Standards Charts for Grades 6–12

For copies of the Teacher’s Guide and student article, visit: scholastic.com/headsup/e-cigarettes.

Note on Text Complexity: The “E-Cigarettes: What You Need to Know” student article has a text level optimized for students in grades 8–12. For readers at a lower reading level, a grades 4–5 version of the article is available at scholastic.com/headsup/e-cigarettes/leveled.

1A Suggested Answers for Lesson Critical-Thinking Questions

scholastic.com/headsup/e-cigarettes

Have students use evidence from the text of the article “E-Cigarettes: What You Need to Know” when responding to the Critical-Thinking Questions. Suggested answers are provided in *italics* after each question.

Question A (Tiered):

- **Grades 6–8:** “How are e-cigarettes similar to tobacco cigarettes, and how are they different?”
- **Grades 9–10:** “Compare and contrast e-cigarettes and tobacco cigarettes.”
- **Grades 11–12:** “Analyze the ways in which e-cigarettes and tobacco cigarettes differ, as well as the traits they share.”

(Both products are designed to deliver the addictive ingredient nicotine by releasing it in a form the user can inhale. The nicotine in tobacco cigarettes is released by smoke. E-cigarettes were created as an alternative to tobacco cigarettes, and instead use a battery-powered heater to turn a liquid solution containing nicotine into an aerosol, which the user inhales. The health effects are not well understood. In contrast, the harmful health effects of tobacco cigarettes are well understood.

For Grades 9–12, add: *In response to tobacco’s harmful effects, the federal government regulates tobacco cigarettes with rules on safety, advertising, and warning*

labels. However, since e-cigarettes function differently and contain different ingredients, they do not currently fall under these regulations. Given that e-cigarettes are an emerging trend, and it takes time to pass laws, the federal government does not yet regulate how e-cigarettes are made and sold.)

Question B (Tiered):

- **Grades 6–8:** “What are some of the risks of e-cigarettes to teens?”
- **Grades 9–10:** “How might e-cigarettes negatively affect teens?”
- **Grades 11–12:** “Articulate the risks e-cigarettes pose to teens.”

(E-cigarettes contain nicotine, which is an addictive substance. The brains of teens may be especially vulnerable to nicotine’s addictive effects. Use of e-cigarettes may result in nicotine addiction in teens and prompt teens to use tobacco cigarettes. There is also the possibility that the nicotine in e-cigarettes could make other drugs more rewarding, increasing the user’s risk of addiction to other drugs. It is unclear at this time if the aerosol from e-cigarettes could harm the user or others who are exposed to it. The liquid cartridges can be toxic if swallowed, sniffed, or touched.

For Grades 9–12, add: *Furthermore, since e-cigarettes were only recently invented, scientists are still researching their effects, and there may be additional risks that are unknown at this point. Some of these risks may particularly affect teens since their brains are still developing.)*

1B Suggested Answers for Student Work Sheet

“E-Cigarettes: Behind the Marketing”

scholastic.com/headsup/e-cigarettes/worksheet

Question 1:

- “Overall, what messages about e-cigarettes do the advertising features above communicate?”
(a. E-cigarette ads might show the products as cool and fun. The colors and flavors may make e-cigarettes seem like they are for young people.)
- “How could these messages be dangerous for teens if used in marketing for e-cigarettes?”
(b. The ads do not mention cigarettes’ potential health risks and it may seem that there are none.)
- “How can teens protect themselves from being influenced by messages that may be dangerous?”

(c. Teens can learn to analyze ads so that they understand the techniques used to sway their purchasing decisions.)

Question 2:

“Why might e-cigarette ads be an unreliable source of information on health and safety?”

(The purpose of ads is to sell products, not to warn of potential unwanted health effects. Therefore, this makes them a poor choice for this type of information. Ads that include this information have to do so by law. Until e-cigarette ads and marketing are regulated, they may imply that e-cigarettes are safer than tobacco cigarettes. However, these claims have not been proven. Ads are not required to mention the conflicting scientific reports. Additionally, it is unlikely that unregulated ads would indicate that e-cigarettes may cause nicotine addiction in people who are not currently smokers of tobacco cigarettes.)

Question 3:

“Tobacco advertisements are required by law to contain a warning regarding harmful health effects.”

- a. “What information could be useful to include in a warning on an e-cigarette ad?”

(a. E-cigarette ads could include information on the chemicals in the liquid component and the aerosol released; the potential for the nicotine in the product to be harmful to developing teen brains; and the fact that most research into the effects of e-cigarettes is in its very early stages, so some risks, including any long-term risks, are not yet known.)

- b. “In your opinion, should the rules about cigarette advertising also apply to e-cigarettes? Why or why not?”

(b. Answers will vary, but students should provide a thoughtful argument for their opinion, including drawing on information from the article to support their position.)

2 Academic and Domain-Specific Vocabulary Lists

scholastic.com/headsup/e-cigarettes/article

The vocabulary words below are drawn from the “E-Cigarettes: What You Need to Know” student article and work sheet. This vocabulary can be previewed with students prior to reading or reinforced with students afterward. Encourage students to incorporate these words into their writing and discussion of the “E-Cigarettes: What You Need to Know” article and work sheet.

Leveled definitions are provided for grades 6–8 and 9–12. Unless otherwise noted, all definitions below are

sourced or adapted from:

- **Grades 6–8:** *Wordsmyth Children’s Dictionary*
- **Grades 9–12:** *Merriam-Webster*

Suggested methods of learning and reinforcement:

Students can construct understanding by drawing the words’ definitions; organizing concept maps that include word parts, synonyms, antonyms, and examples; composing memory aids that explain the words or use them in a meaningful context; and employing the words to create newspaper articles, stories, or poems.

Grades 6–8: Vocabulary From “E-Cigarettes: What You Need to Know” (article and work sheet)

- **addictive** (*adjective*): habit-forming, causing an irresistible need. People who suffer from nicotine addiction have trouble stopping their nicotine or tobacco use even when they really want to and even after it causes terrible consequences to their health and other parts of their lives. This is because addiction is a disease that changes how the brain works.
- **aerosol** (*noun*): visible liquid particles or solid particles suspended (hanging) in air or another gas. Common aerosols include smoke, fog, and hair spray. In e-cigarettes, aerosol is produced when the liquid solution is heated. E-cigarette aerosol is commonly referred to as “vapor.” Aerosol is the correct scientific term, however, because the liquid or solid particles in an aerosol are larger than the gaseous particles in a vapor. See definition of *vapor*.
- **craving** (*noun*): strong appetite, yearning
- **e-cigarette** (*noun*): electronic cigarette; mechanical device for creating an aerosol that contains nicotine that can be inhaled.
- **nicotine** (*noun*): the addictive chemical found in the tobacco plant. It is the primary chemical in tobacco cigarettes and e-cigarettes that makes it so difficult to quit using these products. The nicotine used in e-cigarettes comes from tobacco.
- **prime** (*verb*): to prepare something in order to make it ready for something else. *He primed the wall so that it was ready to be painted.*
- **priming effect** (*noun*): when being exposed to one thing prepares someone or something to experience something else. *A priming effect of nicotine may be to find other drugs more rewarding.*
- **prohibit** (*verb*): ban, forbid, prevent
- **receptive** (*adjective*): able or willing to receive or get something

- **regulation** (*noun*): rule, law
- **susceptible** (*adjective*): at risk
- **tobacco** (*noun*): the product made from the nicotine-rich leaves of the tobacco plant. It is the basis for tobacco cigarettes. The nicotine used in e-cigarettes also comes from tobacco.
- **toxic** (*adjective*): poisonous, dangerous
- **vapor** (*noun*): a faintly visible gas formed from something that is usually a liquid or solid at normal temperatures, such as water that has evaporated into the air. The word “vapor” is commonly used to describe what is produced by e-cigarettes, though the correct scientific term in this case is “aerosol.” The gaseous particles in a vapor are smaller than the liquid or solid particles in an aerosol. See definition of *aerosol*.

Grades 9–12: Vocabulary From “E-Cigarettes: What You Need to Know” (article and work sheet)

- **addictive** (*adjective*): habit-forming, causing a compulsion. People who suffer from nicotine addiction have trouble stopping their nicotine or tobacco use even when they really want to and even after it causes terrible consequences to their health and other parts of their lives. This is because addiction is a disease that changes how the brain works.
- **aerosol** (*noun*): visible liquid particles or solid particles suspended (hanging) in air or another gas. Common aerosols include smoke, fog, and hair spray. In e-cigarettes, aerosol is produced when the liquid solution is heated. E-cigarette aerosol is commonly referred to as “vapor.” Aerosol is the correct scientific term, however, because the liquid or solid particles in an aerosol are larger than the gaseous particles in a vapor. See definition of *vapor*.
- **craving** (*noun*): strong appetite, yearning
- **e-cigarette** (*noun*): electronic cigarette; mechanical device containing a liquid solution that includes nicotine, which is heated and then inhaled
- **nicotine** (*noun*): the addictive chemical found in the tobacco plant. It is the primary chemical in tobacco cigarettes and e-cigarettes that makes it so difficult to quit using these products. The nicotine used in e-cigarettes comes from tobacco.
- **prime** (*verb*): to prepare something in order to make it ready for something else. *He primed the wall so that it was ready to be painted.*
- **priming effect** (*noun*): when being exposed to one thing prepares someone or something to experience something else. *A priming effect of nicotine may be to find other drugs more rewarding.*

- **prohibit** (*noun*): forbid, disallow, outlaw
- **receptive** (*adjective*): able or willing to receive or get something
- **regulation** (*noun*): law, ordinance, restriction
- **susceptible** (*adjective*): vulnerable, unprotected, at risk
- **tobacco** (*noun*): the product made from the nicotine-rich leaves of the tobacco plant. It is the basis for tobacco cigarettes. The nicotine used in e-cigarettes is extracted from tobacco.
- **toxic** (*adjective*): poisonous, noxious
- **vapor** (*noun*): a faintly visible gas formed from something that is usually a liquid or solid at normal temperatures, such as water that has evaporated into the air. The word “vapor” is commonly used to describe what is produced by e-cigarettes, though the correct scientific term in this case is “aerosol.” The gaseous particles in a vapor are smaller than the liquid or solid particles in an aerosol. See definition of *aerosol*.

3 Expanded Writing Prompts for “E-Cigarettes: What You Need to Know”

scholastic.com/headsup/e-cigarettes/article

To encourage and assess close reading of the student article “E-Cigarettes: What You Need to Know,” use the following writing prompts for quick five-minute “freewrites” of a few sentences each. Instruct students to include evidence from the text in their responses.

Grades 6–8

- **[Skill: Inference]** Why is it important for scientists to research e-cigarettes?
- **[Skill: Text Argument]** Write a short persuasive paragraph to convince a friend that e-cigarettes aren’t worth the risks to teens.

Grades 9–10

- **[Skill: Argument]** Should e-cigarettes be illegal for teens?
- **[Skill: Text Features]** Why do you think the article includes a diagram illustrating what an e-cigarette is?

Grades 11–12

- **[Skill: Argument]** Evaluate the appropriateness of laws that mandate that e-cigarette users be at least 18, and discuss how scientists might aid lawmakers in setting policy.

- [Skill: Analysis] What, in your opinion, is the most serious risk associated with e-cigarettes, and why?

4 Expanded Paired-Text Reading Suggestions for “E-Cigarettes: What You Need to Know”

[scholastic.com/headsup/e-cigarettes/article](https://www.scholastic.com/headsup/e-cigarettes/article)

Deepen student learning of “E-Cigarettes: What You Need to Know” with the following paired-text reading suggestions and prompts for writing and discussion.

Informational Text: How Nicotine Hurts

- **Materials:** The article “The Deadly Effects of Tobacco Addiction,” [headsup.scholastic.com/articles/deadly-effects-of-tobacco-addiction](https://www.headsup.scholastic.com/articles/deadly-effects-of-tobacco-addiction)

- **Writing Prompts:**

Grades 6–8

- ▶ Using facts from both “E-Cigarettes: What You Need to Know” and “The Deadly Effects of Tobacco Addiction,” provide evidence to support this claim: “Nicotine products, while dangerous for all, hold greater risks for teens.”

Grades 9–12

- ▶ In light of the known information about nicotine and tobacco, suggest several studies scientists could perform about possible risks e-cigarettes may hold for children, teens, and adults.

Informational Text: Nicotine and Its Delivery Systems

- **Materials:** The article “The Science of Nicotine Addiction,” [headsup.scholastic.com/articles/the-science-of-nicotine-addiction](https://www.headsup.scholastic.com/articles/the-science-of-nicotine-addiction)

- **Writing Prompts:**

Grades 6–8

- ▶ Determine the authors’ purposes in writing “E-Cigarettes: What You Need to Know” and “The Science of Nicotine Addiction.” Why might the authors recommend a teen read both articles together?

Grades 9–12

- ▶ By synthesizing information from “E-Cigarettes: What You Need to Know” and “The Science of Nicotine Addiction,” give examples of two scientific facts that you learned more about, including the relevant details from each article.

Informational Text: Access Does Not Equal Safety

- **Materials:** The article “Marijuana: Breaking Down the Buzz,” [scholastic.com/headsup/breaking-down-marijuana/article](https://www.scholastic.com/headsup/breaking-down-marijuana/article)

- **Writing Prompts:**

Grades 6–8

- ▶ Using the articles “Marijuana: Breaking Down the Buzz” and “E-Cigarettes: What You Need to Know,” compare and contrast the risks and legal status of marijuana and e-cigarettes.

Grades 9–12

- ▶ The articles “Marijuana: Breaking Down the Buzz” and “E-Cigarettes: What You Need to Know” both feature visual aids, including a time line and a diagram, respectively. Evaluate how these illustrations enhance your comprehension of the subject matter. Then describe in detail an additional visual aid that you would recommend the author consider including in future versions of either article.

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5 Expanded Standards Charts for Grades 6–12

scholastic.com/headsup/e-cigarettes

The “E-Cigarettes: What You Need to Know” article, lesson plan, work sheet, and Additional Tools document support higher standards by giving students opportunities to practice key literacy skills while acquiring scientific knowledge relevant to health, life skills, and current events.

Subject	Common Core State Standards for English Language Arts	Next Generation Science Standards	National Science Education Standards	National Council for the Social Studies
<ul style="list-style-type: none"> • Science Literacy • English Language Arts • Health/ Life Skills • Media Literacy 	<ul style="list-style-type: none"> • RI.1 & RST.1 Cite textual evidence • RI.2 & RST.2 Central idea and details • W.2 Write informative texts • W.7 Synthesize multiple texts when writing • W.9 Use evidence in analytical writing • RST.4 Domain-specific vocabulary • RST.6 Author’s purpose • RST.8 Evaluate a claim • RST.9 Compare and contrast two texts 	<ul style="list-style-type: none"> • PS1.B Chemical Reactions • PS3.D Energy and Chemical Processes in Everyday Life • LS1.D Information Processing 	<ul style="list-style-type: none"> • Structure and Function in Living Things • Personal and Community Health 	<ul style="list-style-type: none"> • Production, Distribution, and Consumption • Science, Technology, and Society