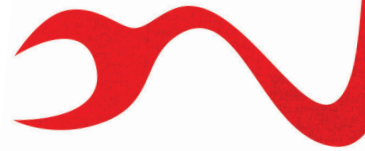


E-Cigarettes: A Dangerous Trend



Vaping devices are becoming more popular, putting teens at risk.

“Almost all e-cigarettes contain nicotine, the same highly addictive chemical found in tobacco cigarettes.”



FEWER TEENS ARE SMOKING cigarettes than ever before. But many have begun using electronic cigarettes. In a recent study, nearly a third of 12th graders reported using vaping devices within the past year.

Health officials are concerned. E-cigarettes are believed to be safer than tobacco, but scientists know little about their risks. Plus, almost all e-cigarettes contain nicotine, the same highly addictive chemical found in tobacco cigarettes.

What Are E-Cigarettes?

E-cigarettes are also called e-vaporizers or vape pens. These battery-operated devices often include cartridges that contain liquid chemicals. When someone puffs on the device, the liquid is heated into a vapor that is inhaled. This is called “vaping.”

Vapor vs. Smoke

Many teens don't think vaping is harmful. This could be because e-cigarettes produce vapor instead of harsh smoke like tobacco cigarettes do. Some even have candy-like flavors.

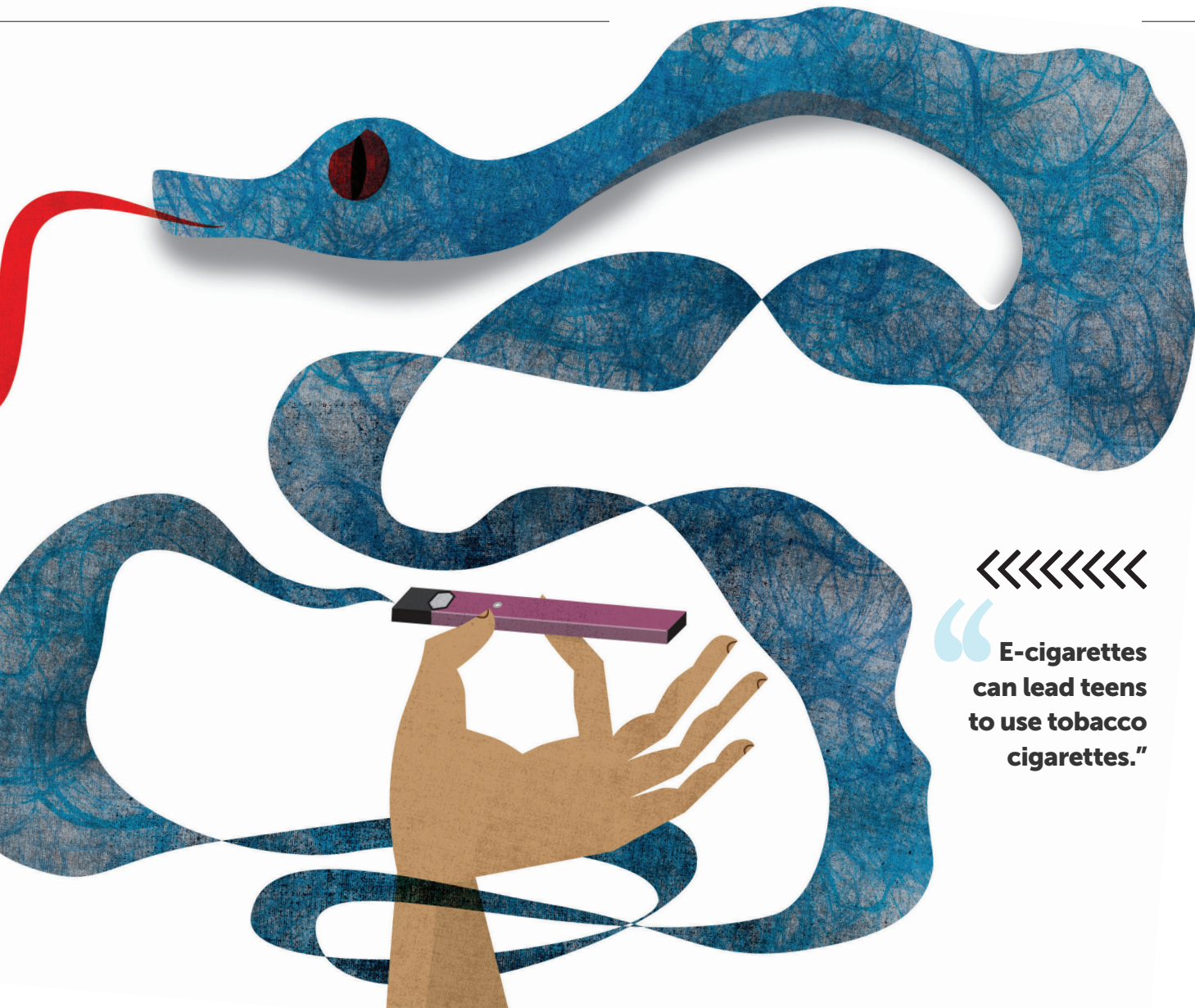
At one time, people didn't know the dangers of tobacco cigarettes. Now we know that tobacco smoke is responsible for 480,000 U.S. deaths each year.

That's why health officials fear what we don't know yet about vaping. E-cigarettes have only existed for about 15 years. Scientists haven't determined all of their effects. We do know that some e-cigarette vapor contains cancer-causing substances and other toxic materials.

It's Just as Addictive

Like tobacco, most e-cigarettes contain nicotine. In fact, one cartridge can contain as much nicotine as a whole pack of tobacco cigarettes!

People who use nicotine have a high chance of developing an addiction. This



“E-cigarettes can lead teens to use tobacco cigarettes.”

is especially true for teens. Studies have shown that teens who use nicotine may have a greater chance of becoming addicted to other drugs too.

For adults who already smoke, switching from tobacco to e-cigarettes is the safer option. But e-cigarettes are not safe for nonsmokers or teens. E-cigarettes can also lead teens to use tobacco cigarettes.

What's Next?

In most states, it is illegal to sell e-cigarettes to people under the age of 18. Officials are cracking down on retailers and companies who sell and market e-cigarettes to teens.

Scientists are continuing to study the health effects of e-cigarettes. But one thing is clear: Using e-cigarettes is not worth the risk.

GET MORE
For additional facts about science and your health, visit [scholastic.com/headsup](https://www.scholastic.com/headsup) and [teens.drugabuse.gov](https://www.teens.drugabuse.gov).

From Scholastic and the scientists of the National Institute on Drug Abuse, National Institutes of Health, U.S. Department of Health and Human Services

E-Cigarettes: A Dangerous Trend

Teens now use e-cigarettes more than any other nicotine-containing product. While e-cigarettes are less harmful than tobacco cigarettes for adult smokers, most versions pose a great risk to teens because they contain the same addictive nicotine found in cigarettes. One cartridge can contain as much nicotine as a pack of cigarettes. By sharing the article “E-Cigarettes: A Dangerous Trend” and teaching this lesson and activity, you’ll help students learn why e-cigarettes aren’t harmless.



Critical-Thinking Questions

1 How are e-cigarettes and tobacco cigarettes similar? (*Both tobacco cigarettes and most e-cigarettes contain a highly addictive chemical called nicotine.*)

2 What health risks do e-cigarettes pose? Cite evidence from the text to support your answer. (*Most vaping devices contain nicotine, which is highly addictive. Vaping can lead to tobacco use and may make teens more vulnerable to other drug addictions. E-cigarette vapor may also contain cancer-causing chemicals.*)

3 Why is it important that scientists continue studying the health effects of e-cigarettes? (*For many years, the health effects of tobacco cigarettes were unknown. Now we know that tobacco cigarettes are responsible for 480,000 U.S. deaths each year. Since vaping devices have existed for only about 15 years, scientists haven't had adequate time to study their side effects.*)

Writing Prompts

Grades 6–8 Are e-cigarettes safer than tobacco cigarettes? Cite evidence to support your answer.

Grades 9–10 Should e-cigarettes be illegal for teens? Cite evidence from the text to support your answer.

Grades 11–12 You read that scientists don't know all of the health effects of e-cigarettes. Do you think this might affect how health officials regulate the devices?

Paired Reading

“Teen Researcher Asks: Why Do E-Cigs Harm the Lungs?”

(<https://teens.drugabuse.gov/blog/post> blog post dated June 4, 2018).

This paired text describes a teen's investigation into how e-cigarettes can damage the lungs.

Writing Prompt Vaping devices don't release smoke like cigarettes do. Does that make them safe? Use text evidence from “E-Cigarettes: A Dangerous Trend” and “Teen Researcher Asks: Why Do E-Cigs Harm the Lungs?” to support your answer.

Activity Sheet Answers

1. Middle school: Roughly .5% to 3% or by 2.5%. High school: Roughly 2% to 12% or by 10%.

2. E-cigarette use is higher in high school. Answers will vary but may include that older students might have easier access and greater exposure to the devices.

3. You would expect the number of teen smokers to increase over time if e-cigarette use makes a person more likely to smoke cigarettes.

4. Answers will vary but should include references to the top reasons students use e-cigarettes. Programs aimed to reduce marketing to teens may help. Teens might share this article with friends who want to try vaping and speak with them about the health risks of nicotine.

Subject Areas

- Science Literacy
- English Language Arts
- Health/Life Skills

Standards

CCSS

RST.6-8.7 / RST.9-10.7

- Integrate and evaluate content presented in diverse formats, including visually and quantitatively, as well as in words

W.6-8.1 / W.9-10.1

- Write arguments to support claims using valid reasoning and relevant and sufficient evidence

NGSS Practices

- Analyzing and Interpreting Data/Engaging in Argument from Evidence/Obtaining, Evaluating, and Communicating Information

NSES

- Personal Health
- Science and technology in society/science and technology in local, national, and global challenges

NCSS

- 8. Science, technology, and society

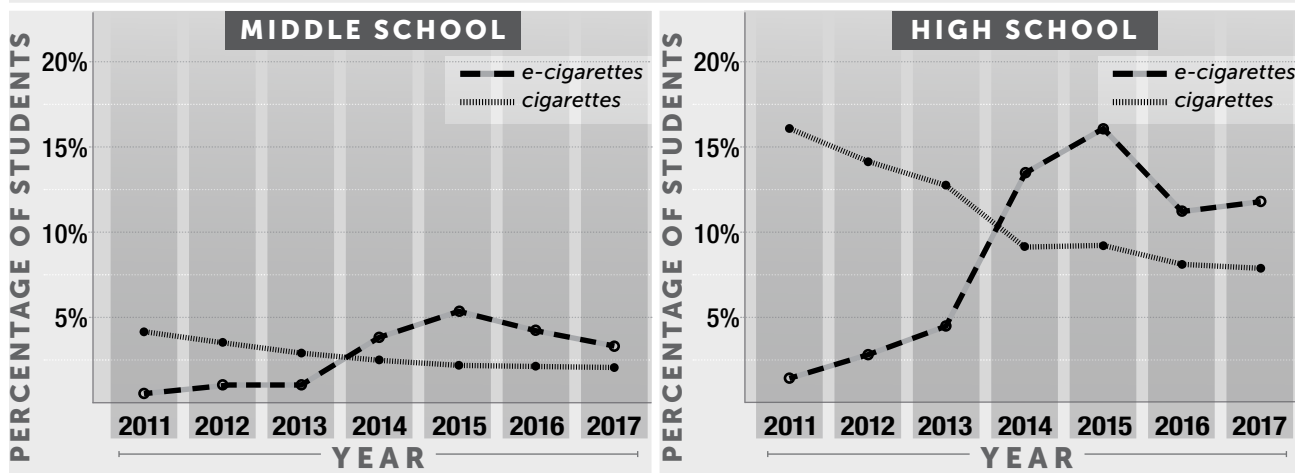
Additional Lesson Resources

- Tiered Vocabulary Tools: Visit scholastic.com/headsup/ecigarettes for a vocabulary list to support this article.
- headsup.scholastic.com/teachers and teens.drugabuse.gov

Who Is Vaping?

Study the following data about e-cigarette use in teens. Then, along with the information in the article, answer the questions that follow.

Percentage of students who reported using cigarettes or e-cigarettes



Top reasons for e-cigarette use among middle and high school students:

- 1 A friend or family member used them
- 2 They are available in flavors such as mint, candy, or chocolate
- 3 Belief that they are less harmful than other forms of tobacco, such as cigarettes
- 4 To try to quit using tobacco products, such as cigarettes
- 5 They can be used in areas where other tobacco products are not allowed

Answer these questions on a separate sheet of paper as necessary.

1. By roughly how much did the percentage of middle school students who use e-cigarettes increase between 2011 and 2017? How much did it increase for high school students in the same period?
2. In which population of students is e-cigarette use higher? Why do you think that is?
3. In the article, you read that people who use e-cigarettes are more likely to start smoking tobacco cigarettes. If that theory is correct, how might the data in the graphs change over time?
4. In the article, you read about some of the ways officials are trying to reduce teen vaping. Do you think these prevention efforts will be successful? Cite evidence to support your reasoning. How might you inform your friends of the dangers of vaping?

For more information, visit scholastic.com/headsup

From Scholastic and the scientists of the National Institute on Drug

Abuse, National Institutes of Health, U.S. Department of Health and Human Services

VOCABULARY LIST:

GRADES 6–12

Dear Teacher,

The vocabulary list on the following pages is drawn from the “E-Cigarettes: A Dangerous Trend” student article and the “Who Is Vaping?” activity sheet.

It can be previewed with students prior to reading or reinforced with students afterward. Encourage students to incorporate these words into their discussions and writings.

The list integrates vocabulary words that would be used across several content areas, such as *reasoning, regulation, and theory*, as well as domain-specific words, such as *addictive, nicotine*, and *vapor*.

Some suggestions for students to help their understanding include:

- 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
- employing the words to create newspaper articles, stories, or poems

Sources: Unless otherwise noted, definitions below are sourced or adapted from:

Merriam-Webster Collegiate Dictionary
Scholastic Children's Dictionary

E-Cigarettes: A Dangerous Trend

The growing popularity of vaping devices is putting teens' health at risk.

Almost all e-cigarettes contain nicotine, the same highly addictive chemical found in tobacco cigarettes.

What Are E-Cigarettes?

Most e-cigarettes are powered by a battery that heats a liquid called e-liquid. The e-liquid is usually a mixture of nicotine, flavoring, and other chemicals. When the battery is turned on, the e-liquid is heated and turns into a vapor that is inhaled. This process is called vaping.

They're Just as Addictive

Nicotine is a highly addictive substance that can lead to addiction. E-cigarettes contain nicotine, which means they are just as addictive as tobacco cigarettes. In fact, some e-cigarettes contain higher levels of nicotine than tobacco cigarettes.

Vapor vs. Smoke

While e-cigarettes produce a vapor, tobacco cigarettes produce smoke. Smoke contains many harmful chemicals, including tar and carbon monoxide, which can lead to lung disease and other health problems. E-cigarette vapor, on the other hand, is made of water, nicotine, and flavoring. While it is less harmful than smoke, it is still not safe to inhale.

What's Next?

As e-cigarettes become more popular, it is important to continue to monitor their safety. Researchers are still studying the long-term effects of e-cigarettes, and it is possible that they may be found to be more harmful than currently believed.

GET MORE
For additional
information,
visit
scholastic.com/headsup
or
scholastic.com/headsup

Supplement for: “E-Cigarettes: A Dangerous Trend”

- Student Article: scholastic.com/headsup/ecigarettes
- Teacher's Guide (includes activity sheet): scholastic.com/headsup/teachers/ecigarettes

Continue to vocabulary sheet on next page.

addiction (*noun*): a brain disorder or illness associated with compulsive (uncontrollable) behavior, such as drug use, despite negative consequences

addictive (*adjective*): something, such as a drug, that causes changes to the brain, resulting in compulsive (uncontrollable) behavior despite negative consequences

associated (*adjective*): related, connected, or joined together

benefit (*noun*): something that gives you an advantage or helps you

cadmium (*noun*): a toxic metal often used in batteries

cancer (*noun*): a disease in which abnormal cells grow out of control and invade normal tissue in the body

cartridge (*noun*): a container, usually changeable, for holding substances (such as liquids) that are otherwise difficult or awkward to handle

chemical (*noun*): a substance that is made by a chemical process or used for producing a chemical effect

compound (*noun*): a substance made of two or more elements

conclusive (*adjective*): proving something, or putting an end to a debate or question

data (*noun*): factual information used as a basis for making conclusions

determine (*verb*): to find out through investigation or reasoning

device (*noun*): something made for a specific purpose or to have a specific function

electronic cigarette (e-cigarette) (*noun*): a device, often shaped like a cigarette, that uses a battery to heat up a liquid that usually contains nicotine, so that it can be inhaled

evidence (*noun*): something that gives proof or a reason to believe something

exist (*verb*): to be real or alive

frequently (*adverb*): happening often or at short intervals

harsh (*adjective*): causing a painful or unpleasant reaction

hazardous (*adjective*): dangerous

inhale (*verb*): to breathe in

market (*verb*): to promote or sell a product

nicotine (*noun*): the chemical found in tobacco that is addictive

operate (*verb*): to cause to function

perceive (*verb*): to consider something as being a certain way

percentage (*noun*): a part of a whole based on a total of one hundred parts

pod (*noun*): an easily replaceable cartridge in a vape pen

population (*noun*): a group of people who have a quality in common

prevention (*noun*): the act of keeping something from happening or existing

promote (*verb*): to encourage people to purchase or accept something

provide (*verb*): to supply or make available

reasoning (*noun*): the process of making conclusions based on facts or reason

recommend (*verb*): to suggest something as being good or worthy

reduce (*verb*): to make smaller in size, amount, or number

regulation (*noun*): an official rule that deals with details and procedures, such as those that make sure something is safe

release (*verb*): to set something or someone free

replaceable (*adjective*): able to be removed and have something new put in its place

report (*verb*): to present a statement or an account of something

responsible (*adjective*): being the cause or explanation for something

retailer (*noun*): a person or business that sells goods

reveal (*verb*): to make known

risk (*noun*): the possibility of loss or injury; danger

substance (*noun*): a material with a specific chemical makeup

theory (*noun*): an explanation of something based on reasonable and scientifically acceptable ideas

tobacco (*noun*): a plant with sticky leaves that are chewed or smoked

toxic (*adjective*): containing poisonous material that can cause harm or death

trend (*noun*): the current style or preference

troubling (*adjective*): causing feelings of worry

vape (*verb*): to inhale and exhale vapor from an electronic cigarette or vape pen

vape pen (*noun*): a device that uses a battery to heat up a liquid that usually contains nicotine, so that it can be inhaled

vapor (*noun*): a gas formed from something that is usually in a liquid or solid state

vulnerable (*adjective*): able to be hurt or damaged