

# Vaping Research Project

Help students spread the word about the health consequences of e-cigarette use by designing and conducting a survey at school.

## Objective

Students will carry out an investigation to collect and present data about their peers' knowledge and attitudes about e-cigarettes.

## Standards

### CCSS Math

- HSS.ID.A.1 Represent data, including dot plots
- HSS.ID.A.4 Use the mean and standard deviation
- HSS.ID.B.6 Represent data on a scatter plot

### CCSS ELA

- SL.4 Present claims and findings

### C3

- D4.1 Construct arguments using evidence

### NGSS

- LS2.D Social Interactions and Group Behavior
- Planning and Carrying Out Investigations
- Patterns

## Time

40 minutes, plus additional time for students to conduct surveys and class presentations

## Materials

- Plan an E-Cigarette Survey activity sheet
- [Vaping Facts & Misperceptions infographic](#)

## Additional Teaching Resources

[scholastic.com/youthvapingrisks](https://www.scholastic.com/youthvapingrisks)

- Includes videos

**1 Ask** students to predict how a graph showing high-school e-cigarette use from 2016 to 2020 would look. Then project the chart below. Have volunteers plot the graph on the board. Discuss, asking guiding questions: *What research question might scientists have asked to gather this data? What might their hypothesis have been? How might they have collected the data? Why is it useful for scientists and health officials?*

High school students who reported using e-cigarettes in the past 30 days

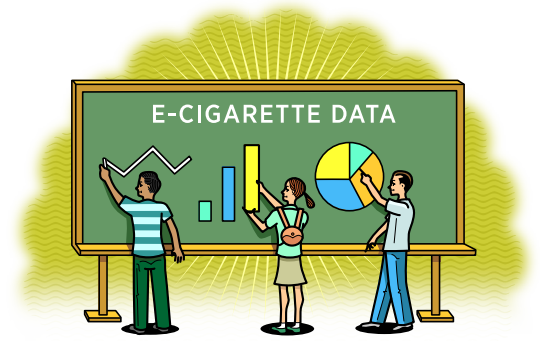
Year	Percent
2016	11.3%
2017	11.7%
2018	20.8%
2019	27.5%
2020	19.6%

Source: National Youth Tobacco Survey 2020

**2 Explain** that students will conduct a survey to learn what their peers know about the health risks associated with e-cigarettes. Ask them to share questions they have, such as: *How many teens know that nicotine is in most e-cigarettes? Record their questions on the board. As a class, brainstorm specific survey questions that could gain peer responses to their questions, such as: Did you know that the addictive chemical nicotine is in most e-cigarettes?*

**3 Separate** the class into small groups and distribute the activity sheet Plan an E-Cigarette Survey. Have students complete Steps 1–2 in their groups collaboratively.

**4 Review** Step 3 of the activity sheet as a class. Tell the class they will be creating aggregate data (grouped). To maintain student privacy, have students create a questionnaire sheet, make copies, and pass it out for peers to mark answers anonymously. Completed surveys can go in a cardbox or manila envelope, taped shut with a slit on top. Each group's survey can be labeled with a number or keyword that is also on their box or envelope. Emphasize the importance of being organized when collating data so that



nothing gets duplicated or lost, rendering the data untrustworthy.

**5 Discuss** what a diverse representative sample would look like across the school: In addition to considering gender and race, students should find a diverse mix of students with various interests and sports/club participation, different friend groups, introverted and extroverted, etc.

**6 Direct** students to conduct their surveys and then analyze and graph their data. Finally, have each group create a class presentation that clearly describes how the survey was conducted, uses visual elements to present their data, and includes conclusions they made based on the data.

- **To support striving learners:** Discuss what types of graphs would be most useful for displaying data.
- **To increase the challenge:** Have students compare their results with national surveys and consider why the data may be different (e.g., sample size, concerns about anonymity, etc.).

**7 Guide** students to critically analyze each group's presentation and assess how well the evidence supported the group's conclusions. Encourage them to be respectful and constructive.

**8 Wrap up** by reading facts aloud from the [Vaping Facts and Misperceptions infographic](#) to help dispel any incorrect statements that may have arisen in presentations.

## Extension

Have students use their data to create anti-vaping info cards. Prompt them to choose facts and images that'll make teens pay attention. Reproduce the cards and pass them out as a class, or develop them into memes and distribute digitally via social media platforms.

Name \_\_\_\_\_

# Plan an E-Cigarette Survey

Teens are using e-cigarettes in record numbers. Do your peers understand the health risks? Use the steps below—writing your answers on a separate sheet of paper—to plan and conduct a survey about what your classmates know about e-cigarettes.

## 1 Find Your Research Focus

What would you like to learn from your classmates? Write 3–5 clear and open-ended research focus questions (not “yes or no” questions).

- *Examples: What do my peers know about the health risks of e-cigarettes? What are other factors that may increase the chance or decrease the chance that a teen would try e-cigarettes or other tobacco products?*

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## 2 Write Survey Questions

Choose one or two research focus questions from Step 1. On separate paper, write 5–10 specific and close-ended survey questions to get targeted answers from your peers.

- *Example: Questions should narrow in on specific, detailed responses. Rather than asking “What do you know about e-cigarettes?” you might ask, “Did you know most e-cigarettes contain nicotine, an addictive chemical?”*

## 3 Make Predictions

Using your knowledge of the news and your own experiences, predict the findings for each of your questions.

## 4 Collect Data

Keeping it anonymous, share your survey with various types of teens to accurately represent the diversity of the whole population. In other words, you want a **representative sample** of teens.

- *Tip: The more people you include in your survey, the more reliable your results. (The number of people you survey is called your **sample size**.)*

## 5 Analyze Your Data

Organize your data in charts and graphs to see trends.

- A **dot plot** shows the difference between individual groups.
- A **line graph** represents change over time, and a **scatter plot** shows the relationship between two variables.
- The **mean** is the average.
- The **standard deviation** is how spread out the data is (variation).



## 6 Present Findings

Create a presentation for your classmates in the form of a slideshow, a blog post, a short video clip, or a PSA campaign series. Be sure to include:

- *Your survey method*
- *Text descriptions and visual representations of your data*
- *Your conclusions (supported by your data) about the teen population and e-cigarettes*