

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

- 6.SP.A.1 Recognize a statistical question as one that anticipates variability
- 6.SP.B.4 Display data, including using dot plots
- 7.SP.A.1 and 2 Representative sampling and inferencing
- 8.SP.A.1 Construct and interpret scatter plots

CCSS ELA

- SL.4 Present claims and findings

C3

- D4.1 Construct arguments using evidence

NGSS

- Planning and Carrying Out Investigations
- Patterns

Time

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

Materials

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

Additional Teaching Resources
scholastic.com/therealcostofvaping

- Includes videos

1 Project or copy the chart below on the classroom board. Ask students to describe what they see. Discuss the data, using guiding questions such as: *What research question do you think scientists asked before collecting this data? How do you think the data was collected? What trend do you observe? How could you best present this data in a graph?*

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

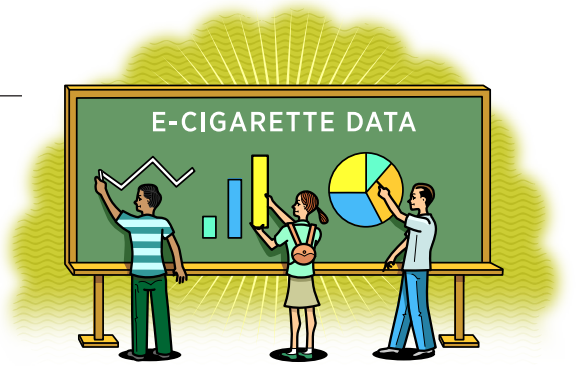
Year	Percent
2016	4.3 %
2017	3.3 %
2018	4.9 %
2019	10.5 %
2020	4.7 %

Source: National Youth Tobacco Survey 2020

2 Explain that students will be conducting an anonymous survey to learn what their peers know about the health risks associated with e-cigarettes. Ask students to share questions they have, such as: *Do teens know e-cigarettes can be dangerous? Write 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 most e-cigarettes contain nicotine, an addictive chemical? Did you know the teen brain is even more vulnerable to addiction than the adult brain?*

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

4 Review Step 3 of the activity sheet as a class. Tell the class they will be working with 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 keyword that is also written on their box or envelope. Emphasize 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: gender, race, various interests and sports/club participation, different friend groups, introverted and extroverted, etc.

6 Direct students to conduct their surveys, then use the results to create a class presentation that: a) clearly describes how the survey was conducted, b) demonstrates results using percentages, tables, and graphs to show their data, and c) includes conclusions they made based on the data.

7 Guide students to critically analyze each group's presentation. Sentence starters:

- One thing they did well was...
- One thing they could improve on is...
- Something I learned that struck me was...
- A question I have is...

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

Extension

Have students use their data to create anti-vaping info cards. For example, if they found that their peers think e-cigarettes don't contain nicotine, they should create a card explaining that they do (with source). Prompt them to choose facts and images that'll make teens pay attention. Reproduce the cards for students to pass out or leave on lunch tables to spread the word.

Name _____

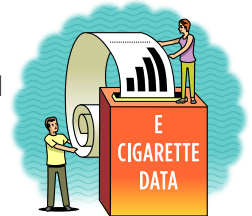
Plan an E-Cigarette Survey

Teens are using e-cigarettes in record numbers. Do your peers understand the health risks? Use the steps below—writing your answers on separate paper as needed—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 do my peers know about the specific chemicals in e-cigarettes?*



2 Write Survey Questions

Choose one or two research focus questions from Step 1. On separate paper, write 5–10 specific, close-ended questions (such as yes-no or true-false) to ask your peers.

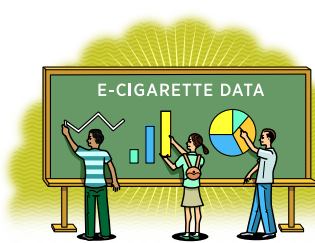
- *Example: Questions should narrow in on specific, detailed responses. Rather than “What do you know about e-cigarettes?” you might ask, “Did you know most e-cigarettes contain nicotine?”*



3 Collect Data

Time to ask your questions! Share your survey with various types of teens in order to accurately represent the population. (This is called a **representative sample**.) Keep the answers anonymous.

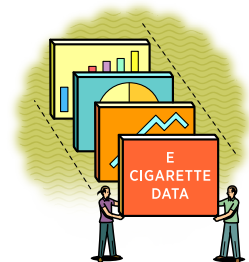
- *Tip: The more people you survey, the more reliable your results will be. (The number of people you survey is your **sample size**.)*



4 Analyze Your Data

Organize your data in charts and graphs to see trends.

- A **dot plot** shows the difference between individual groups.
- A **pie chart** compares different parts of a whole group.
- A **line graph** represents change over time, and a **scatter plot** shows the relationship between two variables.
- The **mean** is the average.



5 Present Findings

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

- *Your survey method (how you got answers)*
- *Text descriptions and visual representations of your data*
- *Conclusions you made about the teen population and e-cigarettes*