

1 Informed Consent

You are being asked to be a volunteer in a research study. The purpose of this study is to understand the current approaches and needs for teaching about air pollution with data visualization to support the design of the Data Visualization and the Environment (DVE) summer camp. The survey will take approximately 10 minutes to complete. Your responses will have all identifying information removed and compiled into a dataset alongside all of the other responses to this survey. The risks involved are no greater than those involved in daily activities. You will not benefit or be compensated for joining this study. We will comply with any applicable laws and regulations regarding confidentiality. Your information will be used to recruit participants into the follow-up interviews if you provide your email at the end of the survey to be considered for the follow-up interviews.

To make sure that this research is being carried out in the proper way, the Georgia Institute of Technology IRB may review study records. The Office of Human Research Protections may also look at study records. If you have any questions about the study, you may contact (PI) at the email jessica.roberts@cc.gatech.edu. If you have any questions about your rights as a research subject, you may contact Georgia Institute of Technology Office of Research Integrity Assurance at IRB@gatech.edu. Thank you for participating in this study.

- *“By completing the online survey, you indicate your consent to be in the study, and you confirm that you are 18 years of age or older and currently located in the United States.”*

☐ Agree

☐ Disagree

2 Role Information

Have you ever worked as a educator for the following institutions? (select all that apply)

- ☐ K-12 schools, either public or private
- ☐ After-school or weekend learning organizations
- ☐ Science-learning centers, such as museums, exhibitions, or aquariums
- ☐ None of the above

Which of the following best describes your current role (or the most recent role within the 5 years)? (select all that apply)

- ☐ Teacher/educator
- ☐ Librarian or media specialist
- ☐ Content area or curriculum specialist without teaching duties
- ☐ School or district administrator
- ☐ Other

How many years have you worked as an educator?

- ☐ <1 year
- ☐ 1-5 years
- ☐ 5-10 years
- ☐ >10 years (Please write the year)

What grades or age-ranges do you typically serve? (Select all that apply)

- ☐ K-5 (Ages 5 through 11)
- ☐ 6-8 (Ages 11 through 14)
- ☐ 9-12 (Ages 14 through 18)
- ☐ Higher Education (18+)
- ☐ Other

Which of the following best describes your school?

- ☐ Public operating within a school system or district
- ☐ Public charter school
- ☐ Private or independent school

What is the full name the school district or system in which you most recently worked?

Does your school receive Title I funding?

- ☐ Yes
- ☐ No
- ☐ Not Sure

How would you classify the learning center you've worked for within the recent 5 years? (select all that apply)

- ☐ Natural History Museum
- ☐ Science Museum
- ☐ Aquarium
- ☐ Zoo
- ☐ Environmental Learning Center
- ☐ Other

Does your after-school or weekend learning program focus exclusively on STEM subjects?

- ☐ Yes
- ☐ No

What subject(s) have you taught within 5 years? (Select all that apply)

- ☐ General/Life/Earth/Physical Science
- ☐ Biology/Chemistry/Physics/Environmental Science
- ☐ Other (please list)

How much flexibility do you have in the followings?

	I have no flexibility	I can only make my selection under a few circumstances	There are some required topics/materials but I can choose others	I can decide my teaching topics/materials completely
Choosing teaching topics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Choosing teaching materials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain your choices of the above question.

3 Air Quality Questions

This section of questions ask about your experience teaching about air quality.

Which of the following topics have you covered in your science classes? (currently or in the last 5 years)

- ☐ Air Pollution
- ☐ Water Pollution
- ☐ Climate Change
- ☐ Animal Species Extinction
- ☐ Forest Loss
- ☐ Others
- ☐ I have not taught about any of these topics

How familiar are you with the following?

	I have never heard of this before.	I've heard of this in the past, but cannot explain what it is.	I have a general idea of what this is.	I feel confident I can explain to someone else what this is.
Air Quality Index	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Factors that Influence Air Quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impacts of Air Pollution	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For each topic below, please select a response that describes your teaching experience.

	I have never taught this and do not plan to	I have never taught this but would like to in the future	I have taught this but need additional resources	I have taught this with enough resources
Air Quality Index	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Factors that Influence Air Quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impacts of Air Pollution	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please explain why you don't plan to teach this topic.

Please share any other topics you have taught about or want to teach related to air quality that are not mentioned in the previous questions.

Please select any of the challenges below that you have faced when teaching air pollution.

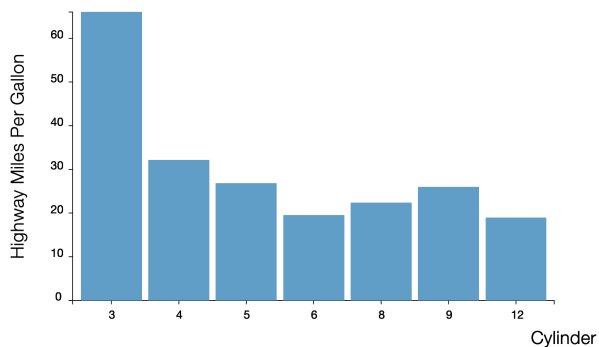
- ☐ I do not have enough time to teach air pollution.
- ☐ I do not have enough lesson resources available to help me teach air pollution.
- ☐ I do not have enough of the materials I need to complete science labs.
- ☐ I do not have access to enough background literature about air pollution.
- ☐ My students are not interested in air pollution.
- ☐ I do not feel that I have received enough training in teaching air pollution to feel confident.
- ☐ Other
- ☐ None of these apply to me.

4 Data Visualization Literacy

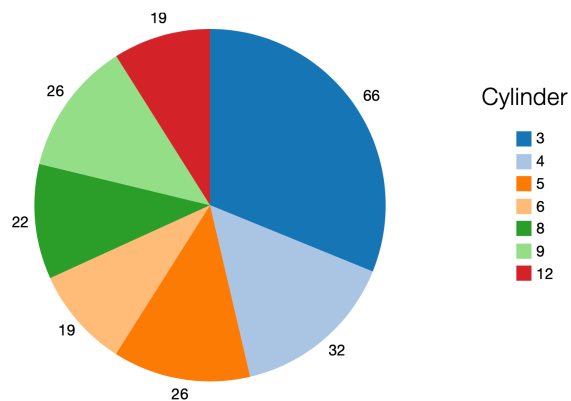
This section of question refer to data science topics and how they are integrated in your curriculum.

Please select all type of charts you have used in your curriculum.

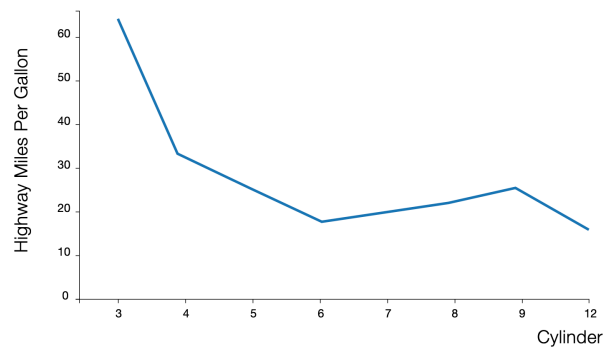
☐ Bar Chart



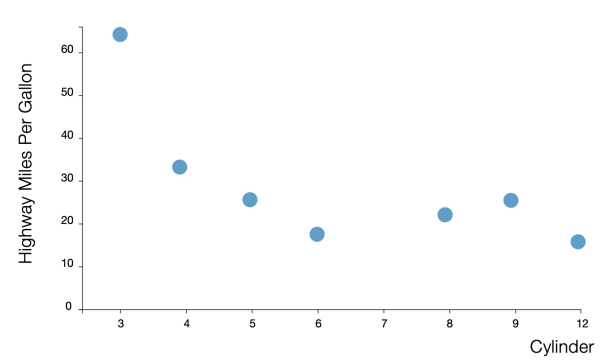
☐ Pie Chart



☐ Line Chart



☐ Scatterplot



☐ Table

Cylinder	Highway Miles Per Gallon
3	66
4	32
5	26
6	19
8	22
9	26
12	19

☐ Others

☐ None of these apply to me.

How was the teaching experience the last time you used data visualization in your curriculum?

Very Poor

Poor

Fair

Good

Excellent

How was the
teaching experience
the last time you
used data
visualization in your
curriculum?

☐☐☐☐☐

Why did you choose that ranking?

Please select all the methods you have used to get the data visualization charts you use in the class.

- ☐ I draw on the board during the class
- ☐ I draw data visualizations before classes
- ☐ I use the charts provided by the curriculums.
- ☐ I search for good data visualizations online and use them as my materials
- ☐ I create data visualizations using computer tools
- ☐ Others
- ☐ None of these apply to me.

Please select any of the challenges below that you have faced when teaching with Data Visualization charts.

- ☐ I do not have enough time to teach with data visualizations during my teaching.
- ☐ I do not have enough supports available to help me teach with data visualization charts.
- ☐ I do not have enough of the materials I need to prepare data visualization charts.
- ☐ My students are not interested in learning with data visualization charts.
- ☐ My students cannot make sense about of data visualization charts.
- ☐ I do not feel that I have received enough training in teaching with data visualization charts to feel confident.
- ☐ Other
- ☐ None of these apply to me.

5 Demographics Information

(Optional) For this project we may be conducting interviews and focus groups in the future. If you are willing to be contacted about potential participation, please provide your email address.

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