DATE: _____

AIR QUALITY IN CANADA

IT IS IMPORTANT FOR OUR HEALTH AND FOR THE ENVIRONMENT TO PROTECT THE AIR QUALITY (AQ) AROUND US. WHY IS AQ OFTEN WORSE IN CITIES? USE THE CANADIAN MAP OF AIR QUALITY (PM2.5) MEASUREMENT STATIONS AT: HTTPS://CYCLONE.UNBC.CA/AQMAP/V3 TO FORM YOUR HYPOTHESIS.

AUTHORS

Name: _____ Name: _____

Name: _____ Name: _____

WITH THANKS TO:

BREATHE the lung association

New Nouveau Brunswick

Your Environmental Trust Fund at Work

Votre Fonds en fiducie pour l'Environnement au travail

INTRODUCTION

PM2.5 is a class of air pollutants made up of minuscule toxic solids and gasses. It's a serious concern for people's health - especially children, pregnant people, the elderly, and anyone with health conditions like asthma or heart disease.

Wood smoke is largely composed of PM2.5. In the summer of 2021, smoke was transported to NB from wildfires all the way over in western Canada. (!) Environment and Climate Change Canada (ECCC) was able to track the ground-level smoke plumes during this event using a network of over 200 small PM2.5 sensors. As a result, they issued air quality warnings to at-risk communities.

PM2.5 also comes from vehicle exhaust fumes, wood burning for heat, construction projects... lots of things generate PM2.5! The amount of PM2.5 in the air we breathe can vary by season, by geographic location, and with daily weather changes. Our hypothesis is:

_____

_____.

OBJECTIVE

To compare PM2.5 levels in different Canadian cities and determine which factors might lead to an increase or decrease in the concentration of airborne fine particulate matter.

METHODOLOGY

Take a look around the map by zooming out to a larger area

- Are there any areas that are dark blue?
- Are there any that are yellow, orange?
- What do you think it means if a station or an area is yellow or orange? ... Red?
- What do you think is happening in areas that are not light blue?
- Can you think of any reasons why the PM might be higher there?
- Discuss with your group.

(Hint: You can also show studies of existing literature to use as references.)

RESULTS/FINDINGS

Show your findings and answer the question or hypothesis stated in your introduction/objective.

- List your findings briefly in bullet points

Important: Avoid using too much technical detail or using excessive jargon when presenting them. Be succinct!

Image: Young masked woman experiencing difficulty breathing in humid, smoggy air.

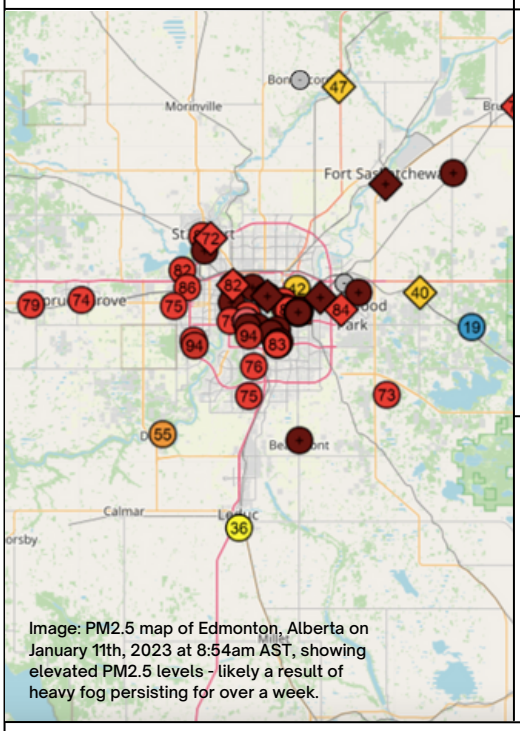

Image: PM2.5 map of Edmonton, Alberta on January 11th, 2023 at 8:54am AST, showing elevated PM2.5 levels - likely a result of heavy fog persisting for over a week.

City/Town	Time	PM2.5 (µg/m3)
	0700h	
	0800h	
	0900h	
	1000h	
	1100h	
	1200h	
	1300h	
	1400h	
	1500h	
	1600h	
	1700h	
	1800h	
	1900h	
	2000h	
	2100h	

(THIS TABLE IS AN EXAMPLE OF HOW YOU MIGHT LIKE TO ORGANISE THE INFORMATION YOU FIND FROM LOOKING AT THE SENSOR MAP. BAR GRAPHS AND PIE CHARTS ARE SOME OTHER OPTIONS!)

TABLES AND GRAPHS CAN MAKE INFORMATION EASIER TO UNDERSTAND. PLACE YOURS HERE!

ANALYSIS

Expand on your findings by discussing what methods were used to analyse your data. (Keep it simple and direct to the point!) Use bullets for emphasis. Include key graphs, tables, illustrations, and other images that support the study and show a visual analysis of the data.

CONCLUSION

Summarize your study and let the viewers know two to three key findings. You can also add a description of each that can give them an idea of what comes next. This section can also include any implications of the study, and if there are any actions or recommendations for future study.

References can take up a lot of space, so cite only the key references used in the study.

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RESULTS/FINDINGS

Image 1:

TABLES AND GRAPHS CAN MAKE INFORMATION EASIER TO UNDERSTAND. PLACE YOURS HERE!

ANALYSIS

CONCLUSION

Image 2:

References can take up a lot of space, so cite only the key references used in the study.

PEER REVIEW

Name: _____

You will read four different examples from the PM2.5 Air Quality comparisons. Your job is to read them and rank where you think they fall on the scale for each criteria. Make sure to indicate which example you're reading!

COMPLIMENTS
Was the writing interesting to read? Is it easy to understand? What did you like?

SUGGESTIONS
Were the steps logical? Would you change anything?

CORRECTIONS
Were there any mistakes, or areas of confusion? Give some feedback!

EXAMPLE #

COMPLIMENTS

Snoozefest. — Really interesting!

SUGGESTIONS

Your hypothesis didn't make sense — Flowed well and very informative!

CORRECTIONS

Errors made it hard to understand. — Pretty much perfect!

CONSTRUCTIVE FEEDBACK:

EXAMPLE #

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CONSTRUCTIVE FEEDBACK:

WHAT IS ONE THING YOU THINK YOU CAN IMPROVE ON FOR YOUR NEXT SCIENTIFIC STUDY?