

PIE IN THE SKY: WHAT IMPACTS AIR QUALITY IN OUR REGION?



INTRODUCTION

While our region generally has good air quality, there are sources of contaminants that can contribute to air quality concerns. To improve air quality in our region, Metro Vancouver develops and implements plans, policies, regulations and projects that monitor and reduce emissions. These initiatives are supported by comprehensive monitoring of outdoor air quality, and tracking of emissions in the Lower Fraser Valley airshed, the geographic boundary for air quality monitoring. This inquiry spark activity explores the sources of emissions from human activities that impact air quality in our airshed and supports learners to consider their experiences, choices and actions to care for the air we breathe.

ACTIVITY

PART I:

1. Think of a time when you may have experienced poor air quality. Where were you? What did it look and feel like? How did it affect you? Make a list of activities that you think may have caused this poor air quality. Share and discuss your list with a partner or small group.
2. Watch this video about [Smog Formation in the Lower Fraser Valley](#). Consider the following questions:
 - What is smog?
 - What conditions lead to its formation?
2. Arrange the Sources of Smog-Forming Emissions Cards in a sequence from highest to lowest percentage of total emissions. When ready, discuss the following questions:
 - Why do you think this is the correct order?
 - How might the percentages be changing over time?
 - What questions do you have now?
3. Compare your estimates with the answer key provided on page 3. Discuss the following questions:
 - Which of your estimates were correct (or close to the actual percentage)?
 - What sources or percentages surprise you?
 - How might air quality change over the next decade in Metro Vancouver? What choices and actions might lead to changes?
 - What new questions do you have? Where could you look for answers?

PART II:

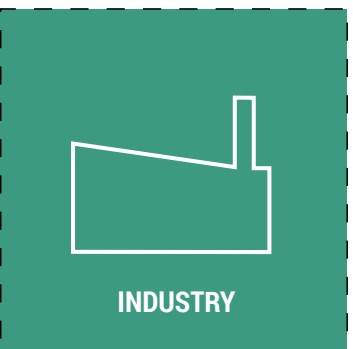
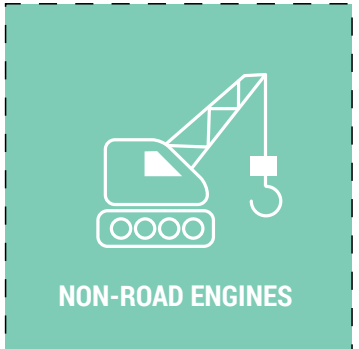
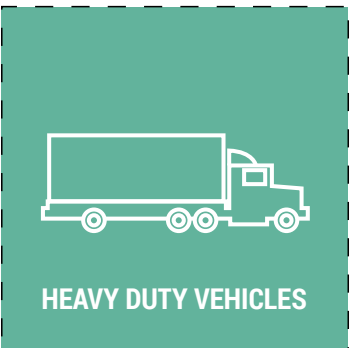
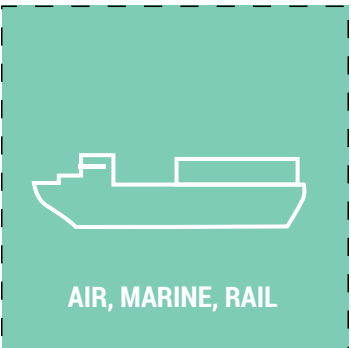
1. Distribute and review the Sources of Smog-Forming Emissions Cards (see page 2). Discuss these questions:
 - What source do you think makes up the greatest percentage of smog-forming emissions? Why do you think so?
 - What source do you think makes up the smallest percentage? Why?



SMOG-FORMING EMISSIONS SOURCE CARDS

Print and cut out sets of Smog-Forming Emissions Source Cards and the % Cards.

Challenge students to match the sources with the correct percentage of total emissions.

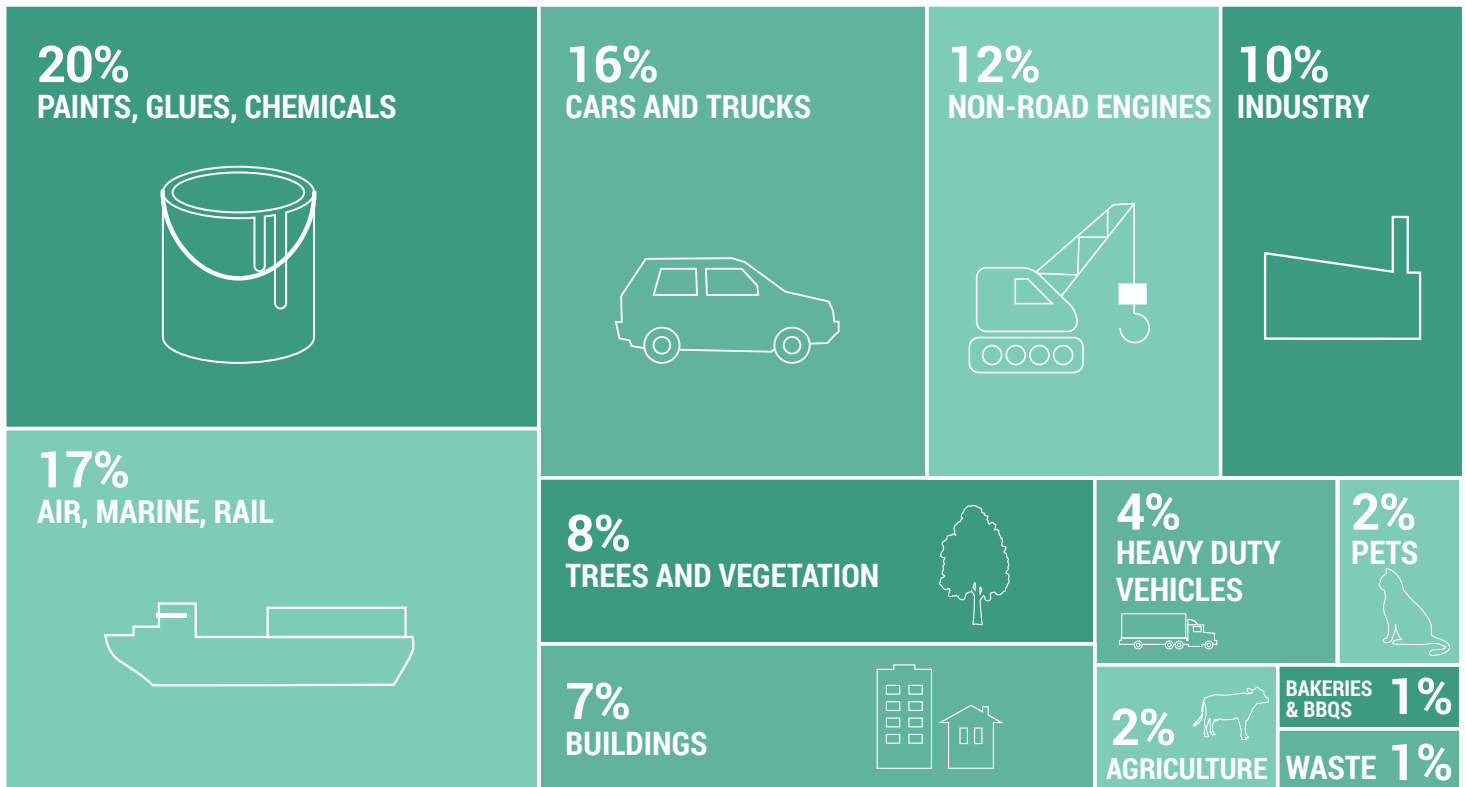


20%	17%	16%	12%	10%	8%
7%	4%	2%	2%	1%	1%

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ANSWER KEY SOURCES OF SMOG-FORMING EMISSIONS IN METRO VANCOUVER



Source: [Metro Vancouver, 2018](#)

PART II (CON'T):

- Explore [The Good, The Bad...and the Ozone](#) brochure. With a partner or small group, discuss the following questions:
 - What is ground-level ozone?
 - What is the difference between good and bad ozone?
 - What are the main sources of its formation?
 - How can it impact our health and the environment?

CLOSURE:

- Return to the list of activities that may cause poor air quality developed in the introduction. Consider the following questions:
 - Which of the activities you listed are also found on the list of *Sources of Smog-Forming Emissions*?
 - Which are not? Why?
 - What can you do to help air quality in our region?
 - How can we work together to ensure our air quality stays healthy for years to come?



METRO VANCOUVER DEVELOPS AND IMPLEMENTS PLANS, POLICIES, REGULATIONS AND PROJECTS THAT IMPROVE AIR QUALITY AND REDUCE GREENHOUSE GAS EMISSIONS.

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EXTENSION QUESTIONS

- Choose one of the Sources of Smog-Forming Emissions and conduct additional research, exploring the following questions:
 - What are the main activities for this source that lead to emissions?
 - Using the [Metro Vancouver Satellite Map](#), where are “hot spots” where this source may be releasing a significant amount of emissions?
 - How have these emissions changed over time?
 - What can we do to lower emissions from these activities?
- Explore the [Integrated Air Quality and Greenhouse Gas Management Plan Progress Report](#) and consider the following questions:
 - What are the three main goals of the plan?
 - What are some key strategies and actions being taken by Metro Vancouver (and partners) to reduce emissions?
 - What could you do to help keep our air healthy, clear and clean?

LEARN MORE!

Check out [Metro Vancouver Air Quality & Climate Change](#):

How does Metro Vancouver develop and implement plans, policies, regulations and projects that improve air quality in our region?

Check out the [Metro Vancouver School Programs](#):

Where can you go to find more K-12 resources, field trips, teacher workshops and youth leadership programs?

