

Name:

Date:

Class:

## Cars and Air Quality Connections (K-2) – Answer Key

Do gas-powered and electric cars affect our air?

Together, we are going to find out:

- Do cars change how clean the air is?
- Does dirty air affect our health?
- Can certain cars help make the air cleaner?

1. Watch the [video](#) of vehicles in traffic. Draw or write about what you saw:

Answers vary

**Class Reflection:** Do you think cars affect how clean the air is? Share your thoughts as a class.



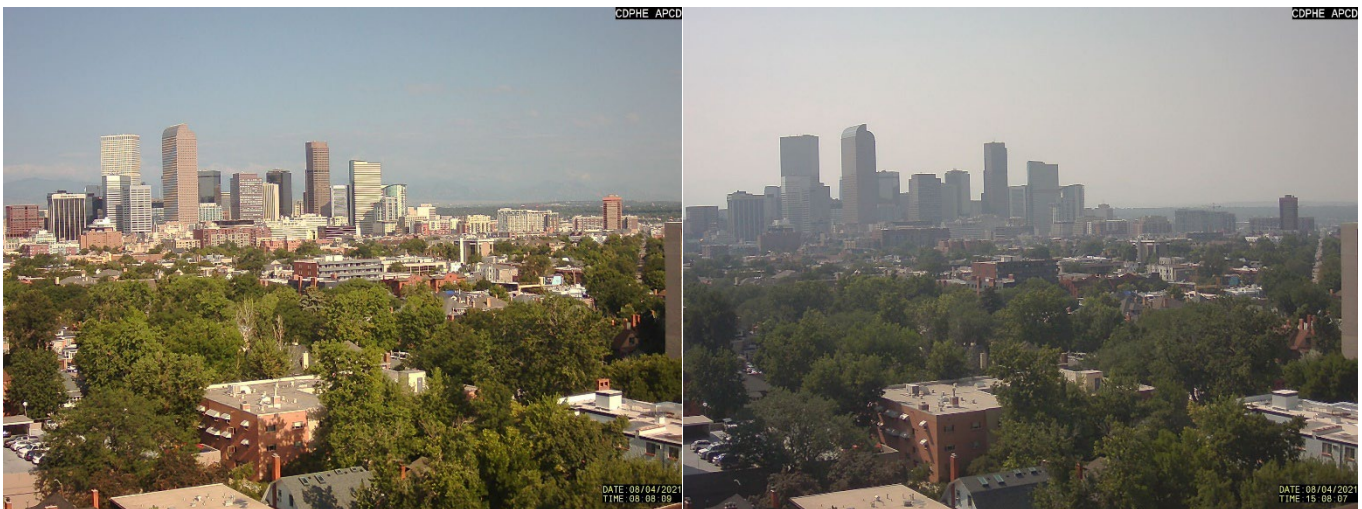
## 2. Let's find out about one type of air pollution that comes from vehicles.

### Particulate Matter (PM)

**Particulate Matter**, also called **PM**, is a type of air pollution. Let's learn more about air pollution in this [video](#) (watch up to 2:24).

**Particulate Matter** is a **pollutant** made up of **very tiny particles** and **droplets** that **float** in the air.

- PM comes from **natural** sources like **dirt**, **dust**, and **wildfire smoke**.
- PM comes from **human-made** sources like **soot** from **burning fuels** for energy and heat.
- PM can make the air **hazy**.



Look at two photos that were taken on the same day at different times.

What looks the same? What looks different? Describe what you observe.

1. Write a plus sign “+” on the photo that has **more PM**.
  - Tell why you think this photo has more PM.
2. Write a minus sign “-” on the photo that has **less PM**.
  - Tell why you think this photo has less PM.
3. Draw a “☹️” on the photo that has  **dirtier air**.
  - Tell why you think this photo has dirtier air.
4. Draw a “😊” on the photo that has **cleaner air**.
  - Tell why you think this photo has cleaner air.

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### 3. How does air pollution affect our health?

Draw a line to **match the words and pictures** to explain how **breathing PM** affects our health:

Words:

- Irritates the **eyes, nose, and throat**

Middle image

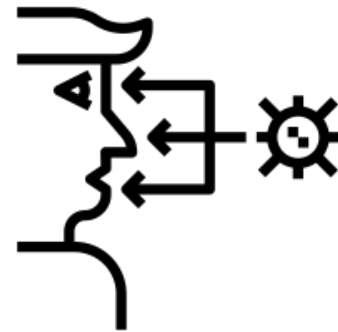
- Gets into the **lungs** and bloodstream

Bottom image

- Triggers **asthma and allergies**

Top image

Pictures:



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#### 4. Let's figure out how gas-powered cars and electric cars work.

Now, let's put together what we now know about **PM air pollution** and its **health effects** to learn how different types of **vehicles** affect how clean the air is.

- First, watch the [video](#) about how a **gas-powered car** works.
- Now, watch the [video](#) about how an **electric vehicle**, also called an EV, works.

How are **electric cars** and **gas-powered cars** the **same**? Draw or write your answer:

EV and ICE vehicles both use a source of energy to power the vehicle. EV and ICE vehicles both range in size from personal cars and trucks to buses to semi-trucks. ICE and EV meet people's transportation needs.

How are **electric cars** and **gas-powered cars** **different**? Draw or write your answer:

EVs have a battery motor that must be charged to run. EVs do not release any emissions or air pollution into the atmosphere when they are on or driving. EVs have a shorter driving range than ICE. EVs can be charged using renewable energy sources but are mainly charged by plugging into the power grid.

ICE vehicles have an engine that burns gas to run. ICE vehicles release emissions and air pollution into the atmosphere when they are on and driving. ICE vehicles have a longer driving range than EV. ICE vehicles use non-renewable fossil fuels that release greenhouse gases when burned, which contribute to climate change.

**Class Reflection:** Share your thoughts on the following questions as a class:

- Is **clean air** important?
- Do **gas-powered** or **electric cars** make our air **dirtier**?
- Do **gas-powered** or **electric cars** make our air **cleaner**?