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Class:

# Climate Change and Cars Worksheet

Do gas-powered and electric cars affect our climate?

Together, we are going to find out:

- What is the greenhouse effect?
- What is the carbon cycle?
- How does transportation affect the greenhouse effect?

## 1. What is the Greenhouse Effect?

**Instructions:** After watching the video "[What is the Greenhouse Effect?](#)" answer following questions.

- Describe the **greenhouse effect** in your own words.
- Why is the greenhouse effect **important to life** on Earth?
- How do **human activities impact** the greenhouse effect?
- What else did you learn from the video?

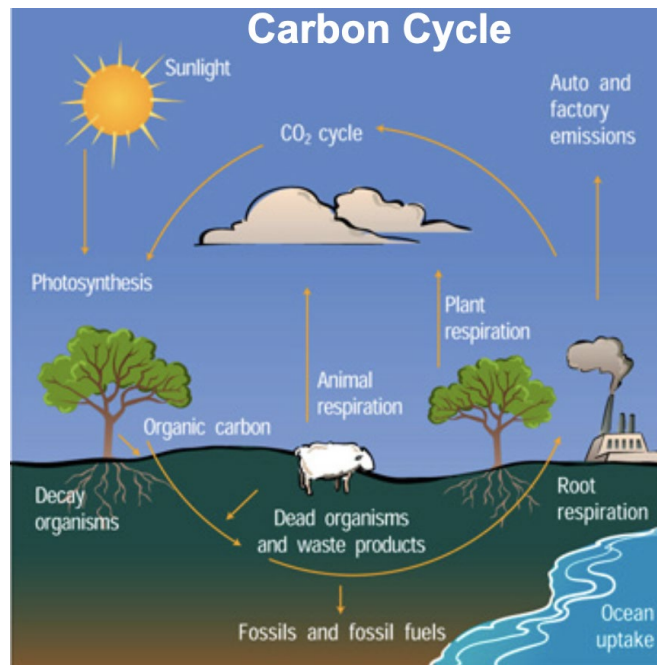
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## 2. Carbon Dioxide (CO<sub>2</sub>) on Earth

**Carbon dioxide**, also called **CO<sub>2</sub>**, is a type of gas naturally found on Earth. Take a few minutes to look over the Carbon Cycle image below. What do you notice?



After watching "What is the Carbon Cycle?" video, answer the following questions.

- Where is **CO<sub>2</sub>** released into the atmosphere?
- How does **CO<sub>2</sub>** move from the atmosphere through Earth?

### Let's review!

- **CO<sub>2</sub>** comes from natural sources...(respiration of animals and humans, decay of dead plants & animals, etc.)
- **CO<sub>2</sub>** also comes from human sources...(burning of fossil fuels for energy in cars, power plants, etc.)
- **CO<sub>2</sub>** moves through Earth's atmosphere (air), hydrosphere (water), biosphere (living things), and geosphere (land).

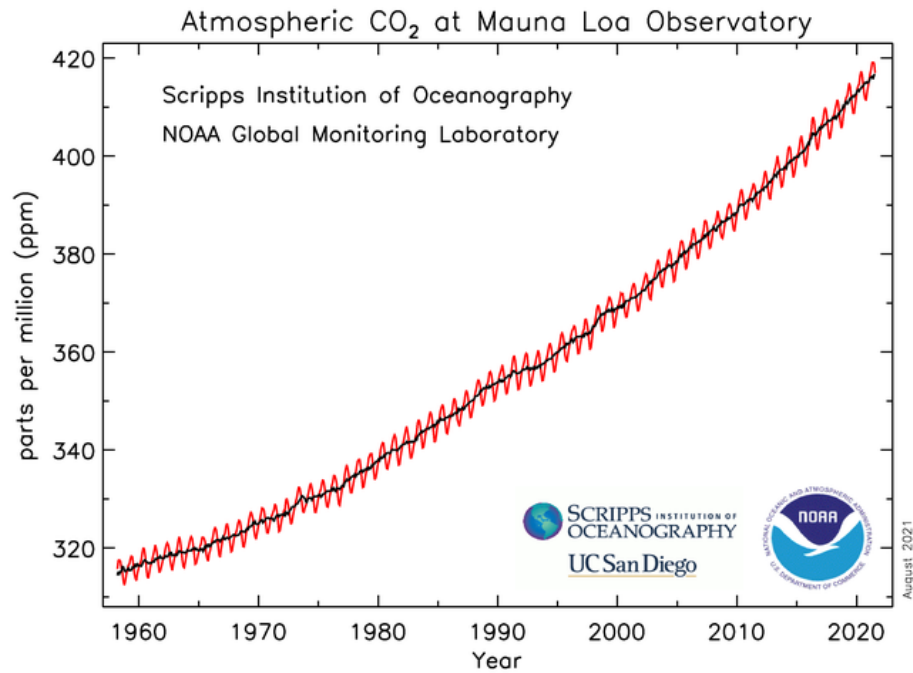
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### 3. How are humans increasing CO<sub>2</sub> levels in the atmosphere?

Look over the graph below showing the amount of CO<sub>2</sub> in the atmosphere.



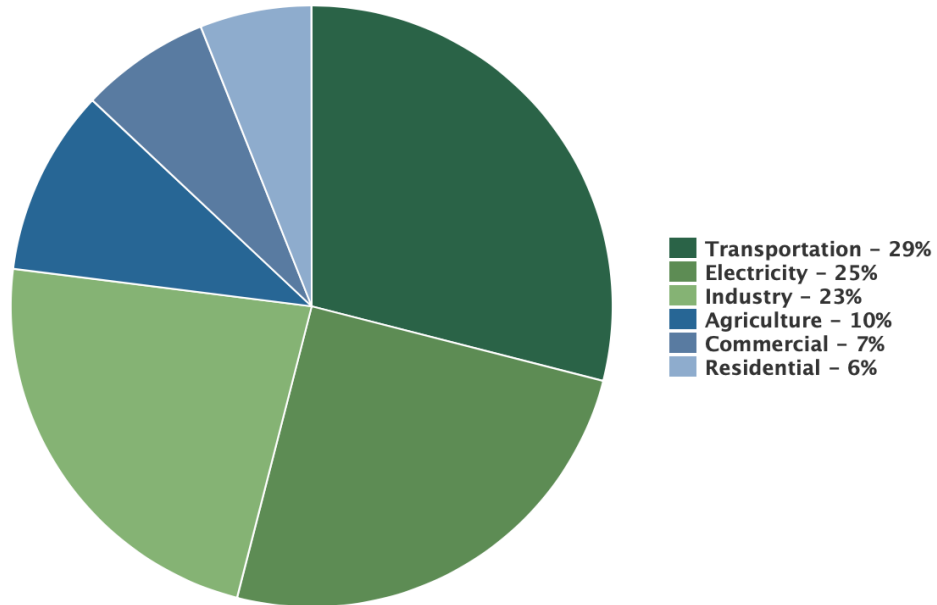
- What **patterns** do you notice in the graph?

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### 2019 U.S. GHG Emissions by Sector



- Look at the image above. What category of human activities contributes the **most** to the **extra CO<sub>2</sub>** in the atmosphere?

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#### 4. Carbon *emissions* (exhaust) from cars.

After watching the video “What if Carbon Left Your Tailpipe as Solid Chunks?” think-pair-share the following questions as a class:

- What do they show coming out of the car’s tailpipe in the video?
  
  
  
  
  
  
  
  
  
  
- How many car “turds” does an average car dump per year? Per mile? How is that shown in the video?

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

- How do you get to school? Do you take the bus? Do your parents drop you in their car? Do you walk? Do you carpool with a friend?
- Which form of transportation do you think is cleaner?
- Which form of transportation do you think is less clean?
- Are there cars out there that do not have exhaust or (or “turds” like the car in the video)?