

Bellringer **REVIEW:**

- How could a carbon atom go from CO₂ to an animal?
- What can you do to help rebalance the carbon cycle?
Name a few things.

Learning Objectives:

- I can evaluate my impact on the earth and make changes to reduce pollution and waste.

Check for Understanding Questions:

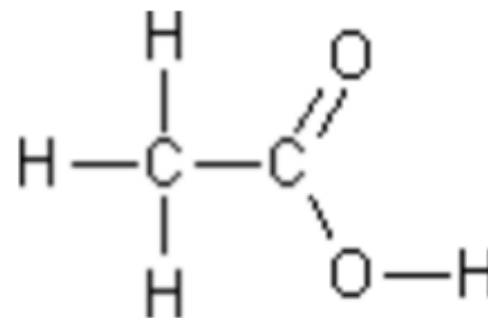
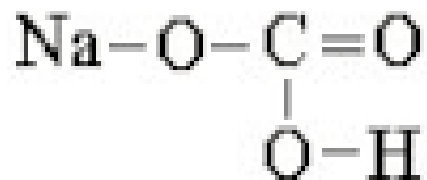
- Questions throughout lesson.

1. Some organisms may not be able to evolve fast enough to climate change to survive. How might this affect this biodiversity on Earth and why is this so important to consider?
2. Humans will have to adapt to climate change too. Predict the future for those people living in areas that will be most affected (coastal areas, those in warmer climates, Arctic areas).

Baking Soda is made of NaHCO_3 , aka Sodium Bicarbonate

Chalk is similar and is made of CaCO_3 , aka Calcium Carbonate

Vinegar is made of CH_3COOH , aka acetic acid or ethanoic acid.



When the two react together they form H_2O , CO_2 , leftover crud.

Note: Questions 1-3 should be answered before the chemical reaction between the vinegar and crushed chalk is carried out.

1. Record the mass of the Baking Soda (container #1). _____
2. Record the mass of the Vinegar (container #2). _____
3. Record the mass of the reactant products (exhaled dinosaur breath (CO₂) + water + calcium compound) after the experiment has been carried out.
4. By adding vinegar to the baking soda, how much carbon was released? Hint: Add the mass of the crushed chalk and the vinegar before the experiment was carried out. Subtract from this value the mass of the reactant products. _____
5. Write the chemical reaction that occurred between the crushed chalk and the vinegar _____ + _____ => _____ + _____ + _____

Carbon is increasing in atmosphere, oceans, and land biota. Plate tectonics and the rock reservoir is not.

Source of CO₂ is from fossil fuels and burning.

Explain why people are concerned with the rising level of carbon dioxide in the atmosphere (CO₂).
What are engineers doing to rebalance the carbon cycle?

Electric Cars vs. Gasoline Cars

Which do you think is better for the environment?

Watch
Video

What if I love my gas guzzler? How can I still cut down on CO₂ emissions?



5 Reasons Not to Idle

1. Reduces greenhouse gas emissions
2. Decreases fuel costs and dependency
3. Improves air quality and contributes to a clean environment
4. Decreases need for unnecessary engine maintenance
5. Improves overall health of citizens

Idling is a habit we all easily can break if we just take a moment and think about the overall effects of the pollution emitted into our air. 50 percent of Utah's air quality problems come from vehicles. Our vehicles are an everyday necessity, but it's important to use them wisely. You can do your part – *Turn Your Key and Be Idle Free!*

Read the exert below and use it to answer questions on the next slide.

There are three different kinds of activities that account for most of our environmental impacts as consumers. These are transportation, food, and household operations (heating, cooling, lighting, cleaning, etc.) These three activities account for about 75% of our consumer impacts on global warming, air pollution, water pollution, and alteration of habitat. Transportation account for 32% of our impact on global warming and 51% of our toxic air pollution.

1. What are the three activities that account for most of our global impact as consumers?
2. Come up with five ways to reduce the pollution and carbon dioxide released by transportation.
3. Come up with three ways to reduce the use of fossil fuels in your home.
4. List two ways to reduce pollution and environmental impact through food? (Think hard about this one, where do you get your food, how it is made, etc.).

Conclusion: Do you think enough people would be willing to make these changes in North America to help bring the carbon cycle back in to balance? Why or why not?



**I ain't no tree huggin
hippie, is there anything
easy I can do to still help?**

Watch Video

Check for Understanding Questions:

- You should've answered questions throughout class. Next time is the notebook check. Make sure you're caught up.

Learning Objectives: Did you accomplish them?

- I can evaluate my impact on the earth and make changes to reduce pollution and waste.

Self-Evaluation

- How well did you understand the material today?
(1-Lost, 2- understand, 3-can teach it)
- How well did you and your team members participate in class?
(1-didn't do anything, 2-Bare minimum, 3-fully participated)

