

The Problems of Bus Idling

Many school districts nationwide have adopted policies that require school buses to shut off their engines while they wait for students at the end of the day. The problems below will help you understand the rationale behind this "No-Idling" policy and how it may affect our environment.

A bus that idles (the engine is running, but the bus is not moving) for 10 minutes uses approximately 0.10 liters (L) of gas and produces 0.25 kg of CO_2 gas. Assume that there are 8 school buses that come to BHS every day and that these buses idle for approximately 30 minutes each day.

1. How many gallons of gas does one bus use in 10 minutes of idling? (1 liter = 0.26 gallon)
2. How many gallons of gas does one bus use in 30 minutes of idling?
3. How many gallons of gas do all 8 buses use in their 30 minutes of idling?
4. If gas costs \$3.15 a gallon, how much money is spent on gas while the buses are in park?
5. There are 180 school days in one year. How many gallons of gas are used idling?
6. How much CO_2 gas is produced each day by the 8 buses? Show all of your work!
7. How much CO_2 gas is released into the atmosphere each year from these buses?
8. What takes longer: the time to convert 1 liter of fossil fuel to CO_2 or the time it takes nature to form 1 liter of fossil fuel? Explain.
9. Use your answer to #7 to explain why atmospheric CO_2 has increased by more than 30% since 1800.
10. Using the values you calculated in questions 1-7, do you think a nationwide adoption of "No Bus Idling" at school will affect the annual worldwide supply of fossil fuels? Explain.
11. In light of your previous answer, why might a no-idling policy be beneficial or necessary?

