



MYTH:
It is important to warm up the engine with a long idle period, especially in cold weather.

FACT: With today's school bus engines, bus and engine manufacturers routinely suggest a warm up time of less than five minutes. In fact, running an engine at low speed with a longer idling period causes significantly more wear on internal parts compared to driving at regular speeds.

MYTH:
It is better for an engine to run at low speed idling than to run at regular speeds.

FACT: Running an engine at low speed causes twice the wear on internal parts compared to driving at regular speeds.

MYTH:
The engine must be kept running in order to operate the school bus safety equipment (flashing lights, stop sign). It is impossible to run this equipment off the internal circuitry of the bus because the battery will run down.

FACT: Safety equipment can be operated without the engine running through re-wired circuitry for up to an hour with no ill-effects on the electrical system of the bus.

MYTH:
Idling is necessary to keep the cabin comfortable.

FACT: Depending on the weather, many buses will maintain a comfortable interior temperature for a while without idling. Idling is also not an efficient way to keep the cabin warm. Bus routes should be timed so children and drivers do not need to spend a lot of extra time off the bus when it is not en route, particularly in hot or cold weather. In addition, an auxiliary heater can be purchased and installed to keep the cabin comfortable.

MYTH:
It is better to just leave the engine idling because a "cold start" produces more pollution.

FACT: An EPA study has found that the emission pulse measured after the school bus is restarted contain less carbon monoxide, nitrogen oxides, and other pollutants than if the school bus was idling continuously over a 10-minute period. The analysis indicated that continuous idling for more than three minutes emitted more fine particle (soot) emissions.

MYTH:
The engine should be warmed up before driving.

FACT: Idling is not an effective way to warm up your vehicle, even in cold weather. The best way to do this is to drive the vehicle. With today's modern

engines, you need no more than 10 seconds of idling on winter days before driving.

MYTH:
Idling is good for your engine.

FACT: Excessive idling can actually damage your engine components, including cylinders, spark plugs, and exhaust systems. Fuel is only partially combusted when idling because an engine does not operate at its peak temperature. This leads to the build up of fuel residues on cylinder walls that can damage engine components and increase fuel consumption.

MYTH:
Shutting off and restarting your vehicle is hard on the engine and uses more gas than if you leave it running.

FACT: Frequent restarting has little impact on engine components like the battery and the starter motor. Component wear caused by restarting the engine is estimated to add \$10 per year to the cost of driving, money that will likely be recovered several times over in fuel savings from reduced idling. Bottom line, more than ten seconds of idling uses more fuel than restarting the engine.

Sources: Environmental Protection Agency, Anti-Idle Campaign; Idle Free Utah; and California Energy Commission



Did You Know?

- Each of us takes approximately 20,000 breaths each day.
- The average American breathes 3,400 gallon of air a day.
- Children breathe 50 percent more air per pound than adults.
- Vehicle exhaust is the one of the major contributors to toxic air pollution in Arizona.
- Idling consumes $\frac{1}{2}$ gallon to one gallon of fuel per hour and wastes more fuel than turning your engine off and on.
- Idling your vehicle with the air conditioning running can increase emissions by about 13 percent.
- Diesel exhaust contains microscopic soot, a particle that is about 200 times smaller than the period at the end of this sentence.
- Diesel exhaust contains both very small particles and 40 chemicals that are classified as "hazardous air pollutants" under the Clean Air Act.
- Idling buses tend to accumulate diesel exhaust, which may be retained during the ride depending upon bus ventilation rates.
- It is more efficient to turn off most warmed-up vehicles than to idle for more than 10 seconds.
- A single vehicle dropping off and picking up kids at one school puts three pounds of pollution into the air per month.
- Carbon monoxide (a component of exhaust) reduces the ability of blood to bring oxygen to body cells and tissues.
- Children's asthma symptoms increase as a result of vehicle exhaust. Asthma is the third leading cause of hospitalization among children under the age of 15.
- Asthma is the most common chronic illness in children and the cause of most school absences.
- Exposure to vehicle exhaust increases the risk of death from heart and lung disease and lung cancer.
- For every 2 minutes a car is idling it uses about the same amount of fuel it takes to go about one mile.
- Idling for 10 seconds uses the same amount of gas as restarting your car.