

# 24 Hours of Edgar's Air Pollution

*This story is a part of the Whirling, Swirling Air Pollution activity from the UCAR Center for Science Education.*

*For more information, visit:*

*<https://scied.ucar.edu/activity/whirling-swirling-air-pollution>*

**How this story works:** You'll learn what Edgar does during his day and how his actions contribute to air pollution. For each hour of the day there is a part of the story (on the right), the time, and the source of air pollutants (on the left).

<p><b>6:00 AM</b></p> <p>Air pollutants from: Burning natural gas Products that release chemicals</p>	<p>Edgar takes a really long shower trying to wake up. The water is hot thanks to a water heater that burns natural gas releasing <b>nitrogen oxides and carbon dioxide</b> into the air. When it doesn't completely burn, natural gas also releases <b>methane</b>. The soap, shampoo, and shaving cream Edgar uses release <b>Volatile Organic Compounds (VOCs)</b> into the air. Edgar can make a lot of air pollution as he showers.</p>
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**6:00 AM**

Air pollutants from:  
Burning natural gas  
Products that release chemicals

Edgar takes a really long shower trying to wake up. The water is hot thanks to a water heater that burns natural gas releasing **nitrogen oxides and carbon dioxide** into the air. When it doesn't completely burn, natural gas also releases **methane**. The soap, shampoo, and shaving cream Edgar uses release **Volatile Organic Compounds (VOCs)** into the air. Edgar can make a lot of air pollution as he showers.

**7:00 AM**

Air pollutants from:  
Burning coal

Edgar enjoys eating eggs, toast, and coffee for breakfast. To make the eggs he uses a stove that uses electricity. His coffeemaker and toaster use electricity too. The electricity comes from a power plant where coal is burned releasing air pollution such as **carbon dioxide, sulfur dioxide, nitrogen oxides, particulate matter, and mercury**. Some coal-fired power plants release **lead, carbon monoxide and VOCs** too. The technology that scrubs air pollution from a power plant's smokestacks is much better than it used to be, but pollution is still released into the air.

**8:00 AM**

Air pollutants from:  
Burning gasoline

Edgar gets in his old van and goes to work, speeding all the way except when he is slamming on the breaks. Edgar doesn't know that speeding and breaking release more pollution into the air than driving a steady speed. The burning gasoline releases **carbon monoxide, carbon dioxide, nitrogen oxides, particulate matter, and VOCs**.

**9:00 AM**

Air pollutants from:  
Burning gasoline

Because he was speeding all the way, Edgar gets to the house he is painting early. Edgar and his crew are giving it a fresh coat of blue paint. He lets his van idle as he checks his email, waiting for the rest of his crew to arrive with the blue paint. Idling the van burns gas, releasing **carbon monoxide, carbon dioxide, nitrogen oxides, and VOCs** into the air.

**10:00 AM**

Air pollutants from:  
Products that release chemicals

Edgar and his painting crew use the cheapest paint they can find. This is how they can charge low prices for house painting. Their customers like low prices, but would they like to know that the cheap paints release VOCs into the air?

**11:00 AM**

Air pollutants from:  
Burning gasoline

There's a tree in the way of the house they are painting so they cut it down with a chainsaw. The homeowner will eventually come home and yell at the painters for killing his pretty tree. It was pretty but it was also helpful. Trees take some pollutants out of the air. Without this tree, more air pollution will stay in the air. The chainsaw they used to cut the tree down burns gasoline and adds **carbon monoxide, carbon dioxide, nitrogen oxides and VOCs** into the air.

**12:00 PM**

Air pollutants from:  
Burning gasoline  
Products that release chemicals

It's lunchtime. Edgar is excited to take a break. He drives to get fast food and eats it in his van with the engine running so that the air conditioning is on. Burning gas on the drive and idling in the parking lot releases **carbon monoxide, carbon dioxide, nitrogen oxides, particulate matter, and VOCs** into the air. The container that his burger came in is made of Styrofoam, also known as polystyrene foam, which releases VOCs into the air.

**1:00 PM**

Air pollutants from:  
Burning coal  
Particulate matter from printing

Edgar leaves the crew painting the house to get flyers printed about their business so that they can advertise to the neighborhood. Printing releases **particulate matter** into the air and the energy that is used by the printers comes from the local coal-fired power plant which releases pollution too.

**2:00 PM**

Air pollutants from:  
Burning gasoline

Edgar delivers the flyers to all the neighbors. He drives to each house and then lets his van idle while he walks to the front door and tapes a flyer to the doorknob. The houses are close together, but Edgar is tired and decides to drive.

### 3:00 PM

Air pollutants from:  
Burning gasoline  
Gasoline vapors

After all that driving from house to house, Edgar's van is low on gas. He fills up his gas tank at the hottest point in the day, and notices that his tires look a little low. He decides to fill them later, not realizing that he will use less gasoline if they are inflated properly. Burning more gas releases more air pollution into the air. At the gas station, **gasoline vapors** are released into the air (which is why gas stations smell like gasoline). At the hottest point in the day, those gasoline vapors are very likely to become the building blocks of **ozone**, part of smog.

### 4:00 PM

Air pollutants from:  
Products that release chemicals  
Burning gasoline

Edgar checks in on the house painting crew. They shout from their ladders that they are behind schedule. Edgar needs to get back to painting.

"Get to work!" Shouts a painter from the top of her ladder.

Edgar grumbles and picks up a paint sprayer filled with the blue paint that releases **VOCs**. He lets his van idle because he thinks he'll be leaving soon.

### 5:00 PM

Air pollutants from:  
Products that release chemicals  
Burning gasoline

Edgar drives home from work. On the way he remembers that he has to pick up his suit from the dry cleaner. When he went to a fancy party last weekend, he spilled fancy mustard on his jacket. He hopes that the dry cleaner got the stain out. Dry cleaners use products to clean stains that release **VOCs** and other contaminants into the air.

### 6:00 PM

Air pollutants from:  
Particulate matter  
Burning gasoline  
Gasoline vapors

As he pulls into his driveway, Edgar notices that his lawn is a bit messy. There are leaves everywhere. The grass and dandelions are knee high. Edgar rakes the leaves and then burns them, releasing **particulate matter** into the air.

Edgar's old lawnmower is out of gasoline. He finds the gasoline container and spills a little as he pours it into the mower. **Vapors** get into the air each time he spills.

**7:00 PM**

Air pollutants from:  
Burning gasoline  
Burning coal

Edgar hears his stomach rumbling. It is time to make dinner. He pulls a lasagna from his freezer. It was made at a factory where materials (like tomato paste and noodles) are brought in and then energy is used to put them together and package them. The energy used at the lasagna factory came from coal. The ingredients came from all over the world and had to be transported to the factory by trucks and ships burning fossil fuels. Then a frozen foods truck transported the lasagna to a store burning more gasoline. Edgar heats up the lasagna in his electric oven, which gets its power from the coal-fired power plant.

**8:00 PM**

Air pollutants from:  
Burning gasoline  
Burning coal

Edgar watches TV and orders a new pair of shoes online that will ship from India tomorrow. (He got fancy mustard all over his fancy shoes during the party last weekend so he threw them away.) Running the television and the computer requires power from the coal-fired power plant. Shipping a package from India will burn fossil fuel and release air pollution. And in India, the factory making his shoes will be making air pollution too.

**9:00 PM**

Air pollutants from:  
Particulate matter

It's chilly in Edgar's house. Edgar starts a fire in the wood-burning fireplace. Burning wood releases particulate matter into the air.

**10:00 PM**

Air pollutants from:  
Products that release chemicals  
Burning coal

After cleaning the kitchen with products that release chemicals into the air, Edgar reads in bed, falling asleep with the light on, using electricity that comes from coal. Edgar is even making air pollution while he sleeps.

**11:00 PM**

Air pollutants from:  
Burning coal

Edgar is still asleep but he continues to make air pollution because his lights are still on.

**12:00 AM**

Edgar is still asleep but he continues to make air pollution because his lights are still on.

Air pollutants from:  
Burning coal

**1:00 AM**

Edgar is still asleep but he continues to make air pollution because his lights are still on.

Air pollutants from:  
Burning coal

**2:00 AM**

Edgar heads to the kitchen for a snack. He is hungry but he is also sleepy and he dozes off while standing at the door of the refrigerator considering what to eat.

Air pollutants from:  
Burning coal

**3:00 AM**

Edgar wakes up confused. Why am I so cold? He wonders. Edgar realizes that the cold is coming from the refrigerator, which has been open as he napped. He no longer wants a snack. He just wants to get back into his warm bed. Edgar turns off the lights, turns on his electric blanket, and drifts off the sleep.

Air pollutants from:  
Burning coal

**4:00 AM**

Edgar is asleep but he continues to make air pollution because his electric blanket is on.

Air pollutants from:  
Burning coal

**5:00 AM**

Edgar is asleep but he continues to make air pollution because his electric blanket is on.

Air pollutants from:  
Burning coal