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Beyond Lightbulbs

The Jones Household Goes Carbon Free in 10 Years

**START
HERE**

YEAR 1

A Big Difference from Small Changes

The family starts off with easy changes: They wash clothes in cold water and air dry them in the summer, replace incandescent bulbs with compact fluorescents (CFLs), turn off their computer when not in use. That's an instant, virtually free savings of 6,200 pounds of CO₂. They make one simple transportation change: One of the adults commutes by bus three days a week—enough to see whether it can be done, but keeping the second car just in case. That's worth another 2,200 pounds. They're down to 51,600 pounds and it hasn't cost them anything but the price of the CFLs and a clothesline. They're actually saving money.

60,000 lbs
- 8,400 lbs
51,600 lbs



YEAR 2

Home Improvement

They stop donating so much heat to the outdoors: attic and basement insulation, sealing and insulating heat ducts, and patching the large air leaks typical of standard construction saves them a whopping 7,100 pounds. These savings aren't free up front, but the savings in heating and cooling bills will repay the cost over time. Besides, Mrs. Jones is handy with home repair, and does a lot of this work herself. Down to 44,500 per year.

51,600 lbs
- 7,100 lbs
44,500 lbs



YEAR 3

House and Car

The bus commute's gone well, so Mr. Jones now buses to work all the time. They've worked on consolidating trips outside work, and find they can do without the second car altogether. That's 5,900 pounds gone. They finish weatherproofing their house: beefing up wall insulation, weatherizing doors and windows, and upgrading to high performance windows. Another 1,800 pounds disappear. They're at 36,800.

44,500 lbs
- 7,700 lbs
36,800 lbs



YEAR 4

Shed Carbon on Vacation

Instead of flying for their annual vacation, the Joneses take the train: a leisurely way to save 7,200 pounds every year. (If they took the bus, they'd save even more.) They're at 29,600 pounds per year—half-way there a year early.

36,800 lbs
- 7,200 lbs
29,600 lbs



YEAR 5

Car Upgrade

Time to replace the car. Thanks to consumer demand, electric cars have become widely available, and they buy one. Even charging on dirty power, they save 9,000 pounds. Household total is now 20,600.

29,600 lbs
- 9,000 lbs
20,600 lbs



Brooke Jarvis and Doug Pibel

Meet the Joneses. They're your average U.S. energy consumers. They haven't yet upgraded to energy-efficient appliances, their house needs better insulation, and they keep the place as cool in the summer and warm in the winter as most Americans do. The two adults commute 30 miles each per day, in separate cars with average fuel efficiency, and every year they each drive an additional 4,500 miles running errands and taking their child to soccer games and violin practice. The family takes one vacation trip per year, flying to visit grandparents 1,350 miles away. How much CO₂ do their house and cars produce? We figure it at 60,000 pounds, or 10 tons for each family member.

Lately, though, the Joneses have been reading about climate change, and they're getting worried. Ecological crisis has never felt so urgent before. Even little Joey Jones is talking greenhouse gases—he learned at school that scientists are predicting a worldwide climate catastrophe that will change the rest of his life, unless we stop the worst effects by making big changes in the next ten years. The Joneses decide: change is necessary, and they're ready to do their part. But how much can they really do? A lot, it turns out.

In 10 years, without sacrificing their way of life, the Jones family eliminates the CO₂ emissions that their home and transportation used to create—the bulk of their carbon footprint.

Count Your Carbon

Want to keep up with the Joneses? Here are the numbers we used. Use them to find—then shrink—your own carbon footprint.

*CO₂ output,
in pounds*

| | |
|--|--------------|
| Gallon of gas | 19.36 |
| Gallon of fuel oil or diesel | 22.38 |
| Kilowatt hour of electricity (national average) | 1.43 |
| Therm of natural gas | 11.71 |
| Gallon of propane | 12.67 |
| <i>Per passenger:</i> | |
| Airplane mile | 1.28 |
| Train mile | 0.42 |
| Long-distance bus mile | 0.18 |
| Local mass transit mile | 0.50 |
| Electric bike mile | 0.02 |

The Rest of the Story

The Joneses only changed their housing and transport habits. How can you go further?

Eat meatless. For every day of the week you skip meat, you'll save 215 lbs. per year.

Buy local. Most food eaten in the U.S. has traveled 1,500 miles to your plate.

Be a low-impact consumer. Choose local products, reduce the stuff you buy, and save embedded energy by buying used.

Reduce waste. Stop junk mail, reduce packaging, and reduce the 2,020 lbs. each American's waste produces annually.

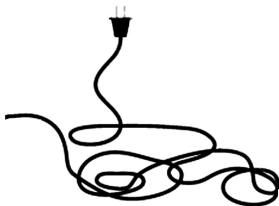
Avoid the McMansion. A smaller house saves a lot of carbon: on average, 11.4 lbs. of CO₂ per square foot per year.



YEAR 6

Hot and Cold

They improve their water system, including insulating their hot water heater and their pipes, and also lower the temperature of their water heater: 1,000 pounds down. When the old refrigerator kicks the bucket, the Joneses buy a new energy-efficient one and finally unplug a second fridge in the garage, knocking off another 1,300. Total remaining: 18,300.



YEAR 7

Close to Home

Grandma and Grandpa retire and move nearby. The Joneses now vacation within the range of their electric car, saving 3,300 pounds of CO₂ each year. The city converts its bus fleet to clean electricity, which saves another 1,200 pounds. They're down to 13,800.



YEAR 8

A Few More Things Around the House

An efficient clothes washer saves carbon on its own, and saves dryer time. With all the money they're saving, they decide it's time to invest in a solar hot water system. Total: 2,000. Leaving 11,800.



YEAR 9

Electric Bikes

While the Joneses have been on this journey, their town has responded to citizen pressure and gone bike friendly. The new bike paths make it easy for both to ride to work. To ease the hills, they buy electric bikes. There are four months of the year when they can't bike, so they continue their usual commute patterns then. Savings: 3,500. Total remaining: 8,300.



YEAR 10

Green Power

The Joneses' furnace has been groaning and working overtime. They replace it with an electric heat pump, which also cools the house in summer. They also buy certified green, renewable power from their electric company, and the switch from coal plants eliminates the remaining 8,300 pounds of CO₂ produced by the electricity for their house and car.

20,600 lbs
– 2,300 lbs
18,300 lbs

18,300 lbs
– 4,500 lbs
13,800 lbs

13,800 lbs
– 2,000 lbs
11,800 lbs

11,800 lbs
– 3,500 lbs
8,300 lbs

8,300 lbs
– 8,300 lbs
0 lbs