

Case: Reducing Carbon Usage at the Smith Household

The Smith family is a family of four living in Toronto, Ontario, Canada. Growing up, Mr. and Ms. Smith loved swimming in the clear blue waters of Lake Ontario. Recently, they took their two children to Lake Ontario, and they are saddened to see the polluted state of the water. They heard about pollution in a news before, but it was totally different seeing it in person.



They also heard about climate change, but they didn't really think much about it until they experienced snow on June 3, 2019 while taking a family trip to Algonquin Park.



Just recently, on May 28, 2021, they experienced snow in Toronto, which killed a lot of the new plants they had just planted in their garden!



The Smith family decided that it's time to make some changes to help the Earth and reduce their carbon usage. However, they're not too sure where to begin. That's why they've come to you, their environmentally educated friend, for advice!

A Daily Life in the Smith Household

The Smith household wakes up at 7:00AM. The first thing they do is unplug their phones, which were charging all night. The parents prepare breakfast and get ready for work, while the children get ready for school. For breakfast, they usually eat some quick-to-make meals like fried eggs, bacon, toast, cereal, and milk.

After breakfast, Mr. Smith takes the bus to work, while Ms. Smith drives the kids to school (a 10-minute drive) and then drives to her workplace. Despite not being at home, they like to keep the house thermostat set at 23 degrees so that when they return home, it's not hot and not cold.

For lunch, sometimes they will pack leftovers from yesterday's dinner; other times, they will just buy lunch. Mr. Smith likes to visit a Thai restaurant near his office, where he often orders teriyaki chicken or beef. Ms. Smith likes to visit an Italian restaurant near her office, where she often orders pizza or lasagna. The kids often buy lunch from the school cafeteria, and they like to buy hamburgers and fries.

When the kids finish school at 3PM, they walk home. Ms. Smith finishes work at 4PM and then goes home. Upon arriving home, she checks all the paper mail and sorts between all the advertisement flyers versus real mail that she needs to read. Mr. Smith finishes work at 5PM, but sometimes he has to work overtime until 7PM. If he finishes work on time, he goes home for dinner. If not, then he gets take-out for dinner at the office.

Ms. Smith usually likes to prepare a big dinner for the family because that's when they have to most time to spend together, and any leftovers can be packed for lunch the next day or composted in their garden. They grow many flowers and some easy-to-manage vegetables in the garden, such as tomatoes, beans, and lettuce. For dinner, the Smith family likes to have 50% of the plate be meat, 30% grains, and 20% vegetables. For example, they might have a steak with some rice and steamed broccoli.

After dinner, everyone takes turns taking a nice hot shower, usually around 15 minutes long. The kids will do their school work, while the adults go for a walk, talk to neighbors, or watch some TV.

By 10PM, the kids are told to go sleep as soon as they can, and the parents like to read their books before bed. They've changed all their lightbulbs to LED lights, so it's nice and bright for them when reading books. All lights shut off by 11PM for bed.

Case Questions

1. What good things does the Smith Family do to reduce carbon usage?
2. How can the Smith Family reduce carbon usage? Give a list from biggest impact to smallest impact.