

Pretzel Power Teacher Guide

🌟 Objective

- Students will be able to describe the energy efficiency of different kinds of transportation and list the benefits of carpooling.

🕒 Time

- 30-60 minutes

📄 Materials

- 3 x 5 Cards
- Internet access for students (optional)
- Bag of pretzels
- Plastic sandwich bags
- Three signs (Home, Near Town, Far Town)
- *Pretzel Power* worksheet
- Scissors
- Glue

📋 Preparation

- Make copies of the worksheets for each student.
- Prepare a plastic bag with ten pretzels for each student.
- Make three signs, one labeled "Home" one labeled "Near Town" and one labeled "Far Town." The signs should be large enough to see from across the room.
- Select a large area and place the Home, Near Town, and Far Town signs on poles or walls. The distance to Near Town should be 50 steps. The distance to Far Town should be 100 steps. (Do not give these distances to students.)

✓ Procedure

1. Have students look up a car they would like to drive on www.fueleconomy.gov. On 3" x 5" cards, students should record the car's name, model year, miles per gallon, and the number of passengers the car holds. It may be helpful, if students have chosen a FFV (flex fuel vehicle), that they choose which fuel they will use—gasoline or E85—before recording mileage.
2. Distribute a bag of pretzels to each student. Tell students not to eat the pretzels until they are instructed to begin.
3. Explain to the students that each pretzel represents one gallon of gasoline, and each step (heel-to-toe) the student takes represents one mile traveled.
4. Students eat a pretzel and take the appropriate number of steps before eating the next pretzel. All steps are heel-to-toe.

① Round One

- Use only 5 pretzels for this round. Each person will drive his/her car to work in Near Town and return Home. If anyone runs out of fuel (pretzels), he/she must stay at that point until round one is over. Line up at Home and start stepping!
 - DISCUSS:** Which cars got you to work and home? Which didn't?
 - Did anyone have extra fuel remaining?
 - What alternatives to driving your own car are there?

② Round Two

- Using the remaining five pretzels, try some of the alternative suggestions discussed above. Everyone will travel to Far Town and return Home. Expect "negotiations." Suggest students carpool to work. Drivers may eat each passenger's pretzels as fuel. Line up at Home and start stepping!
 - DISCUSS:** Who made it to Far Town and back? How did you do this?
 - Who did not make it to Far Town and back? Why not?

NOTE: If students choose to use dedicated electric vehicles, they would have a shorter range they would be able to travel, despite higher MPGe ratings. Discuss with students how the game would have changed if they chose those vehicles and could only travel 30 to 60 miles at a time before refueling.

