

## LESSON 2 : RESOURCE

# Carbon Crunch: The Travel Challenge Game

### Rules and Cards

#### Purpose:

To explore how different combinations of travel modes affect your carbon output over a week—and find the most sustainable solutions.

#### How to Play:

- Divide the class into small groups of 3–5 students.
- Provide each group with:
  - A deck of Carbon Crunch Scenario Cards (provided below)
  - A Weekly Emissions Record Sheet or spreadsheet
  - Access to carbon emission values per km for transport modes:
    - 🚗 Car (solo): 194 g CO<sub>2</sub>/km
    - 🚙 Carpool (3 people): 65 g CO<sub>2</sub>/km
    - 🚌 Bus: 22g CO<sub>2</sub>/km
    - 🚲 Bike: 0 g CO<sub>2</sub>/km
    - 🚶 Walk: 0 g CO<sub>2</sub>/km
    - 🛴 E-scooter: 30 g CO<sub>2</sub>/km
    - 🚆 Train: 0 g CO<sub>2</sub>/km (metro) 14g CO<sub>2</sub>/km (regional)

#### Objective:

Work through a set of scenario cards. For each card:

1. Calculate the total weekly emissions using the formula:  
Distance × Emissions per km × Days
2. Record your answers on the Weekly Emissions Record Sheet.
3. At the end of the game, compare your group's weekly totals across all cards and identify:
  - The lowest emission travel plan
  - The most surprising result

## Lesson 2 Resource: Carbon Crunch: The Travel Challenge Game

### Carbon Crunch Scenario Cards (20 Examples)

Each card includes:

- Travel distance to school (one way)
- A week's worth of transport habits

#### Level 1: Everyday Habits (Easier Calculations)

1. You live 2 km from school. You walk every day.
2. You live 3 km from school. You ride your bike 3 days and take the bus 2 days.
3. You live 4 km from school. You're driven alone 5 days a week.
4. You live 5 km away. You carpool with 2 friends all week.
5. You live 1 km away. You ride your e-scooter every day.
6. You live 3 km away. You walk 3 days, get a lift 2 days.
7. You live 4 km away. You bus 3 days, ride 2 days.
8. You live 2.5 km away. You train 5 days.

#### Level 2: Mixed-Mode Weeks (Medium Difficulty)

9. You live 6 km from school. You ride 2 days, carpool 2 days, and get driven solo 1 day.
10. You live 5 km away. You take the bus 2 days, walk 1 day, carpool 2 days.
11. You live 4 km away. You're driven solo 2 days, train 2 days, and walk 1 day.
12. You live 7 km away. You train 3 days, e-scooter 2 days.
13. You live 5 km away. You walk to a friend's house (1.5 km) and carpool together the remaining 3.5 km every day.
14. You live 3 km away. You mix walking and riding: ride 2 days, walk 3 days.
15. You live 6 km away. You ride 3 days, bus 1 day, e-scooter 1 day.

#### Level 3: Real-World Dilemmas (More Complex)

16. You live 8 km from school. Your parents insist on driving you 3 days. You bus 2 days on your own.
17. You live 10 km away. You train 3 days and e-scooter to the station (1 km). On 2 days, you carpool the full way.
18. You live 3 km away. You ride 4 days but get a lift on rainy days (1 day/week).
19. You live 4 km away. You start walking halfway and get picked up (2 km walk + 2 km car) each day.
20. You live 5 km away. You walk 2 days, bus 1 day, ride 1 day, and get driven 1 day.

### **1. Carbon Crunch Scenario Card**

You live 2 km from school. You walk every day.

### **2. Carbon Crunch Scenario Card**

You live 3 km from school. You ride your bike 3 days and take the bus 2 days.

### **3. Carbon Crunch Scenario Card**

You live 4 km from school. You're driven alone 5 days a week.

### **4. Carbon Crunch Scenario Card**

You live 5 km away. You carpool with 2 friends all week.

### **5. Carbon Crunch Scenario Card**

You live 1 km away. You ride your e-scooter every day.

### **6. Carbon Crunch Scenario Card**

You live 3 km away. You walk 3 days, get a lift 2 days.

### **7. Carbon Crunch Scenario Card**

You live 4 km away. You bus 3 days, ride 2 days.

### **8. Carbon Crunch Scenario Card**

You live 2.5 km away. You train 5 days.

### **9. Carbon Crunch Scenario Card**

You live 6 km from school. You ride 2 days, carpool 2 days, and get driven solo 1 day.

### **10. Carbon Crunch Scenario Card**

You live 5 km away. You take the bus 2 days, walk 1 day, carpool 2 days.

### **11. Carbon Crunch Scenario Card**

You live 4 km away. You're driven solo 2 days, train 2 days, and walk 1 day.

### **12. Carbon Crunch Scenario Card**

You live 7 km away. You train 3 days, e-scooter 2 days.

### **13. Carbon Crunch Scenario Card**

You live 5 km away. You walk to a friend's house (1.5 km) and carpool the remaining 3.5 km every day.

### **14. Carbon Crunch Scenario Card**

You live 3 km away. You mix walking and riding: ride 2 days, walk 3 days.

### **15. Carbon Crunch Scenario Card**

You live 6 km away. You ride 3 days, bus 1 day, e-scooter 1 day.

### **16. Carbon Crunch Scenario Card**

You live 8 km from school. Your parents insist on driving you 3 days. You bus 2 days on your own.

### **17. Carbon Crunch Scenario Card**

You live 10 km away. You train 3 days and e-scooter to the station (1 km). On 2 days, you carpool the full way.

### **18. Carbon Crunch Scenario Card**

You live 3 km away. You ride 4 days but get a lift on rainy days (1 day/week).

### **19. Carbon Crunch Scenario Card**

You live 4 km away. You start walking halfway and get picked up (2 km walk + 2 km car) each day.

### **20. Carbon Crunch Scenario Card**

You live 5 km away. You walk 2 days, bus 1 day, ride 1 day, and get driven 1 day.