



# Ko te ine i ā tātou tukuwaro

## Counting our Carbon Emissions

### What teachers need to know

The purpose of this activity is to measure individual carbon dioxide output for the school week, to give baseline data to be able to compare before and after the effects of any actions taken. It will bring awareness to how much carbon we do emit and highlight where we could change our behaviour.

Your ākongā (students) will need these learning resources:

- [Ko aku haerenga: Ko te ine i aku tukuwaro \(My Trips: Counting my Carbon\)](#)

#### Teacher preparation:

 5 mins

- Read through this resource.
- Print and photocopy [Ko aku haerenga: Ko te ine i aku tukuwaro \(My Trips: Counting my Carbon\)](#) per student or send it to them digitally.
- Print or display this example [Ko aku haerenga: He tauira ine tukuwaro ā-wiki \(My Trips: Weekly Carbon Counter Example\)](#).

#### Learning intention – students will:

- Measure individual carbon dioxide output for the school week.
- Increase awareness of how much carbon we emit and highlight where we could change our behaviour.
- Know the importance of collecting baseline data to be able to compare before and after the effects of any actions that encourage change.

#### Success criteria – students can:

- Collect data on the amount of carbon dioxide produced as a comparison tool.



## New Zealand Curriculum Achievement Objectives:

### Mathematics and Statistics:

#### Level 2 – Number and algebra – Number strategies:

- Students will use simple additive strategies with whole numbers and fractions.

#### Level 3 and 4 – Number and algebra – Number strategies:

- Students will use and understand a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals and percentages.

### Educational for Sustainability Concepts:


- Sustainability – see [Education for sustainability](#).




## Addressing climate anxiety in your class




- [Future Curious](#) – provides relevant resources about climate change developed by a registered teacher based in New Zealand.
- NZASE has a guide on [Teaching climate change](#), including how to address student anxiety.



# Learning experience

 45-60 mins

1. Reflect on the knowledge about carbon dioxide previously learned in:  
**He aha rā te hirahira o te Āhuarangi Hurihuri (Climate Change – What’s the big deal?).**  
Explain that carbon dioxide is one of the main gases causing the Greenhouse Effect and it is one of the main waste products from vehicles. When we drive places, we contribute to carbon emissions.  5 mins
  2. Look at the example of a weekly carbon counter record sheet.  
See **My Trips: Weekly Carbon Counter Example**.
  3. Model how to keep a record of a school week of journeys, using the website **Trip Go** to work out the carbon emissions of your journey to kura (school).  10 mins
  4. Give each ākonga a copy of **My Trips: Counting my Carbon**  
**Note:** This sheet could be sent home to do as a homework activity with whānau. Also, ākonga could also use spreadsheets to calculate individual and class totals.
  5. Let them use the website Trip Go to work out their own carbon emissions of their journey to kura, and other trips they make during a school week. Alternatively, ask ākonga to calculate their personal carbon daily then add up at the end of the week.  20 mins
- Instructions – How to use Trip Go to calculate how much carbon gets used for each school trip:**

  - Type your home address and school address in the search boxes.
  - Click on the green ‘route’ button.
  - Find out how long each mode takes and the amount of carbon used. Record on the sheet.
6. Add up and display the total amount of carbon dioxide the class emits.  5 mins
  7. Discuss what influenced their decisions to travel by car.  10 mins
  8. Ask ākonga to consider these questions:  10 mins
    - How much carbon would I use over a full school year?
    - If I walked twice a week how much carbon could I reduce over a year?
    - What are the costs on the car for a year?
    - How much carbon am I saving by walking every day?

## Further activities, resources and links

- Visit our **Ko te Kete Āhuarangi (Carbon Kete)** for a wide range of relevant resources.
- Watch this video from Auckland Council **Getting your head around climate change** (youtube.com)
- **Carbon calculators:**
  - **FutureFit**
  - **Climate Hero**
  - More links from **Wellington City Council**
  - **Drive it Down!** (GNS Science)