

Calculate your school's carbon footprint



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Eco-Topics:



School Grounds



Energy



Transport



Waste



Water



Healthy Living

This hands-on activity gets students involved in collecting data to help calculate your school's carbon footprint using Count Your Carbon. They'll meet with staff, run surveys, and learn about how school activities can create carbon emissions. A staff member will need to collect some additional data, and then you'll be able to sit down with your students and complete your calculation. Understanding your footprint is the first step in taking climate action!

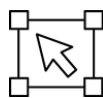


Green Skills and Learning

Young people will develop the following skills in a green context:



Technical



Digital skills



Collaboration



Project
Management

Young people will develop their knowledge of:

- Which areas of their school's operations and activities produce carbon emissions.
- Gathering, analysing and entering data to calculate a carbon footprint.

The Issue

Every day, humans create energy, drive cars, grow food and power factories, all of which release huge amounts of carbon into the atmosphere. The total amount of carbon created by the activities of an individual, business, or country is called a 'carbon footprint'.

In England, it's estimated that all schools combined have a carbon footprint of over **10 million tonnes per year**.

Carbon traps heat and stops it from escaping the planet, and this is creating climate change. It is already having a negative impact on weather, ecosystems, human health and our food supply.

The good news is that we can do something about it. By learning about your school's carbon footprint, you're taking the first step to making a difference. When we understand where we're creating carbon emissions, we can find ways to reduce them, and ultimately protect our planet's future.



Find out more

- [BBC Newsround - Climate change - your questions answered \(video\)](#)
- [Department for Energy, Business and Industrial Strategy - My 2050 \(game\)](#)
- [NASA - Climate kids](#)
- [WWF - Climate change resources for schools](#)
- [STEM Learning - Climate change resources for KS1 and KS2](#)

Follow These Steps

A note for staff: We would recommend registering your school with Count Your Carbon (www.countyourcarbon.org) and gathering the remaining data required before you sit down with your students to complete a carbon footprint calculation in Step 4. You'll need to gather data about school vehicles, school trips, purchasing and uniform, and support your students to gather the rest using the guidance below. Download the Data Collection Sheet from www.countyourcarbon.org/getting-started, and input all of the data here as you gather it.

To help students to understand how the areas they are collecting data for produce emissions, share the 'Why does _____ produce emissions?' fact sheet (page 9) with them.

1. Gather Energy, Waste and Water data.

Gather information about how much electricity, fuel and water your school uses, and how much waste is produced, by speaking with the school Finance Manager, Site Manager or Caretaker.

Ask them the questions on the 'Gather Energy, Waste & Water data' worksheet (page 10-12) and write down the answers. Hand your answers over to your Eco-Coordinator who will input them into the Data Collection Sheet.

2. Gather Staff and Student Commuting data.

Find out about how far people travel to school and the mode of transport they use. Use the 'Gather Staff and Student Commuting' worksheets (page 13-15) to conduct a survey.

There are two survey questions:

- What mode of transport do you use to travel to school most often?
- What distance do you travel to get to school?

Visit several classes and ask the survey questions to both students and staff. Read out the answer options and ask people to put their hand up to give you their answer. Keep a tally on the worksheet of how many people put their hand up for each option. You should aim to survey a minimum of 20% of staff and students.

Hand your answers over to your Eco-Coordinator who will input them into the Data Collection Sheet.

3. Gather Food data.

Find out about the types of meals people choose to eat in school. In most cases, this information will be held by the school Canteen Manager.

Ask them the questions on the 'Gather Food data' worksheet (page 16) and write down the answers. Hand your answers over to your Eco-Coordinator who will input them into the Data Collection Sheet.

4. Calculate your carbon footprint.

Now it's time to calculate your carbon footprint. First, make sure you have all of the data that you and your Eco-Coordinator have gathered to hand.

Head to www.countyourcarbon.org and sign in. Start a new calculation, and make your way through the questions, making sure to double check your answers as you go. Your Eco-Coordinator will need to input the additional data that they have gathered too.

Once you've reached the end of the questions, click 'submit'. At this point, your carbon footprint figure will be revealed. Well done! You've completed your carbon footprint calculation.

5. Share your results.

Once you've completed your carbon footprint calculation, it's time to share your downloadable report with your teachers and classmates so that you can start taking action!

The report should be shared with your school's leadership team and operational staff so that they can create a plan of action to reduce your school's emissions. You could even set up a meeting to discuss it with them.

Then, make sure it's shared with your students, so that they can begin taking climate action too. This might be through an assembly, or creating a display board.

Green Careers

Carbon Accountant

Carbon Accountants investigate how much carbon businesses produce by gathering data on their operations, and calculating their carbon footprint. They analyse and report on this information, and provide companies with advice on how their emissions can be reduced in order to help the planet stay healthy.

Retrofit Coordinator

Retrofitting means to install new materials and technology into older buildings, to help them become more energy efficient and reduce carbon emissions. Retrofit Coordinators assess buildings and plan upgrades, like adding insulation to stop heat escaping, or installing solar panels to generate green electricity. The coordinator also plans and oversees the installation of the improvements.

Academic Researcher and Lecturer

Combating climate change and creating a sustainable society takes cutting-edge research and innovation. Academic Researchers and Lecturers work at universities, where they become experts in one special topic - for example food sustainability, renewable energy, or eco-friendly materials. They teach students - helping to inspire the next generation of planet protectors, and conduct research with other experts to solve real-world problems.



Go Further

- Explore The Playground! The Playground is a fun tool that you can find through the Count Your Carbon dashboard. It takes your school's real footprint data and lets you explore how making changes in school can help to reduce your carbon footprint. It's a great way to learn by doing, test out scenarios and share ideas with others.
- Create a decarbonisation plan for your school. Explore the different actions you could take to reduce your school's footprint, and create a plan to help make them a reality. This can tick off the Decarbonisation strand of a Climate Action Plan

Curriculum Ideas

Maths

Take your school's carbon footprint and think about the best way to present it using data visualisations such as charts and graphs. Create some interesting visuals to help share your footprint data with the rest of the school.

English

Write a report about how you calculated your school's carbon footprint, what the results showed, and the actions that you think could be taken to reduce it, to share with your school's senior leadership team.

PSHE and Citizenship

Research and discuss what simple actions students can take in school to help reduce carbon emissions in school. Design a poster communicating these to be displayed around school.

Pupil data collection and information sheets

Why does _____ produce emissions?



Electricity

Electricity often comes from non-renewable, carbon emitting sources such as fossil fuels and nuclear reactions, however there are renewable sources too, such as the sun (solar energy), wind, water (hydroelectric), and even organic matter such as food waste (biomass).

Fuel

A fuel is a substance that is used to provide heat or power, usually by being burned. Types of fuel include gas, oil, coal and wood. When fuels such as gas, oil, coal and wood are burned to produce heat or power, it creates carbon emissions.

Waste

All waste has to be transported to its point of disposal in vehicles, and this produces carbon emissions due to the fuel being burned. Most methods of waste disposal, whether that be landfill, incineration, or industrial composting, create emissions too.

Water

Water itself doesn't emit carbon, but in order for it to be used it must be treated and transported. These processes require energy, and generating energy can emit carbon.

Staff and Student Commuting

Each method of transport has its own related carbon emissions. These depend upon a range of factors such as whether it uses fuel or electricity, and how many people can travel within one vehicle.

Food

Food creates emissions because producing, processing, packaging and transporting it all require electricity, water and fuel. Plant-based foods typically produce less emissions than meat.

Gather Energy, Waste and Water data

Speak to the person in your school who has data on energy, waste and water. In most cases, this is your Business Manager, Site Manager or Caretaker. Ask them the question below and note down their answer in the box. Finally, pass completed sheets on to your Eco-Coordinator who will record them on the Data Collection Sheet.

Fuel

In the last 12 months, what types of fuel, and how much fuel, did you use in your school buildings? (Fuel type, amount, units)

Your school might use one type, or even a combination of fuels. e.g. Natural gas for heating, Diesel in generators. You don't need to ask about fuel used in vehicles.

Fuel type options: Natural Gas / Butane / CNG / LNG / LPG / Propane / Burning Oil / Fuel Oil / Coal / Biogas / Landfill Gas / Biopropane / Biomethane / Wood Chips / Wood Logs / Wood Pellets / Grass/Straw / District Heat and Steam

Unit options: kg, tonnes, kWh, cubic metres, litres, GJ

Electricity

Over the last 12 months, how much electricity, in kWh, did your school use from your energy supplier?	
Does your school purchase 100% of it's electricity from a certified renewable or 'green' tariff? Note for teachers: Please see the additional guidance on the Data Collection Sheet to ensure you answer this question correctly when inputting your data.	Yes / No
Over the last 12 months, did your school generate energy onsite from renewable energy systems?	Yes / No
Roughly how much energy, in kWh, did your school generate onsite from your renewable energy systems?	

Water

Make sure to combine fresh (drinking) water usage and sewerage (also referenced as treatment or waste) to get the total water usage.

In the last 12 months, roughly how much water, in m3, did your school use?	
In the last 12 months, roughly how much did your school spend on water?	

Waste

The Site Manager might have this information. If they don't, go on a walk around school to count how many bins there are and their types. There's a diagram at the bottom of the page to help with this. Only count the big bins that are collected by the waste company.

In the last 12 months, how many of the following size bins could be found in your school and approximately how many times per month were they collected? (bins/collections)						
Type of bin	50L	120L	240L	360L	660L	1100L
General			/	/	/	/
Recycling			/	/	/	/
Garden Waste			/	/	/	/
Food Waste	/	/	/			



50L

73cm x
45cm



120L

95cm x 50cm
x 50cm



240L

107cm x
58cm x 74cm



660L

1200cm x
1370cm x 770cm



1100L

1400cm x 1200cm
x 1000cm

Gather Staff and Student Commuting data

Ask staff and students the survey questions below and use the table to keep a tally of their responses. Then hand your results to your Eco-Coordinator so they can record them on the Data Collection Sheet.

What mode of transport do you use to get to school on an average day?

Mode of transport	Students	Staff
Car		
Battery EV		
Plug-in hybrid EV		
Bus		
Tram/train		
Walk/wheel		

What distance do you travel to get to school?

Distance travelled to school (one-way)	Students	Staff
0-5 miles		
5-10 miles		
10-15 miles		
15-20 miles		
20-25 miles		
25-30 miles		
30+ miles		

Count up the total number of people you surveyed and note these figures down here.



Total students surveyed

Total staff surveyed

Optional: Transport mode percentages

The Data Collection Sheet where you'll be recording your data will turn your survey results into percentages automatically, however if you'd like to test your maths skills, why not try calculating them yourself below?

Begin by counting up your tallies and noting these figures down in the 'count' column. Then, use this formula to calculate the percentages:

(total for mode of transport ÷ total no of staff or students surveyed) × 100.

For example, if you asked 60 students in total and 15 said that they walk to school: Calculate $15 \div 60$, which equals 0.25. Multiply that by 100. Answer = 25% of students walk to school.

Students	Count	Percentage
Car		%
Battery EV		%
Plug-in hybrid EV		%
Bus		%
Tram/train		%
Walk/cycle/scoot		%

Staff	Count	Percentage
Car		%
Battery EV		%
Plug-in hybrid EV		%
Bus		%
Tram/train		%
Walk/cycle/scoot		%

Gather Food data

Speak to the person in your school who has data on food served in school. In most cases, this is your Canteen Manager. Ask them the questions and note down their answers in the boxes below. Then pass these on to your Eco-Coordinator who will record them on the Data Collection Sheet.

In the last 12 months, did your school serve hot meals?	Yes/No
In an average week, how many meals including meat, does your school serve?	
In an average week, how many vegetarian meals does your school serve? Vegetarian = meat / fish free but can include dairy and eggs.	
In an average week, how many plant-based meals does your school serve? Fully plant-based meals = no meat/ fish, dairy or eggs.	
In an average week how many 100% meat-free days does your school offer?	
In an average week, how many 100% plant-based days does your school offer?	