Students on roll – 1956 students (11-18)

Age of buildings – range 10-62 years old

Gross floor space – 21,653m^2

Sustainability at Comberton Village College

CLIMATE AMBASSADORS
In association with EAUC, STEM Learning and the University of Reading

What is a Climate Action Plan?

A climate action plan (CAP) is a detailed plan to enable your education setting, or trust, to progress or commence sustainability initiatives.

Decarbonisation

Adaptation and resilience

Biodiversity

Climate education and green careers

Decarbonisation

Aim to reduce emissions and support students to be part of the transition to net zero.

Measures Taken to Improve Efficiency

The final stage of the Re-fit programme alongside Cambridgeshire County Council and Bouygues, (Equans) is complete at Comberton Village College with the installation of a ground source heat pump. The project has replaced oil boilers at the college with 720 kW of Ground Source Heat Pump capacity, drawing heat from an array of 60 x 200m deep boreholes in the college car parks and distributing heat to 11 plant rooms.

During this reporting period, 1 September 2023 – 31 August 2024, schools have fully returned to pre- Covid levels of occupancy and operation. There has been a sustained cross-Trust focus on all "energy saving initiatives" including a reduction in heating hours, BMS reviews to maximise efficiencies, turning lights/PC's off etc.

During the summer all fluorescent tube lights at Jeavons Wood Primary School were replaced with LED intelligent lights.

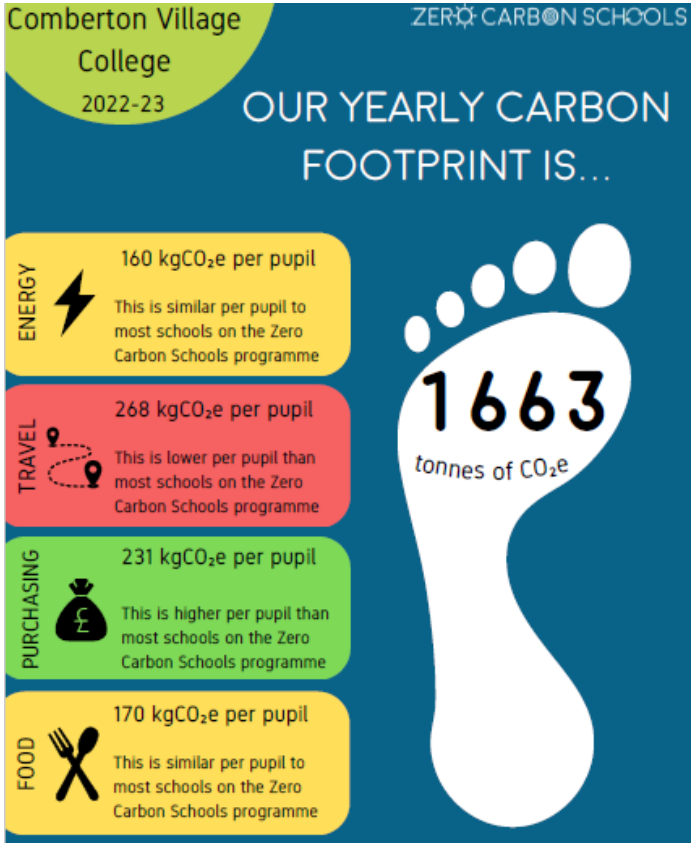
SCOPE1 and SCOPE 2

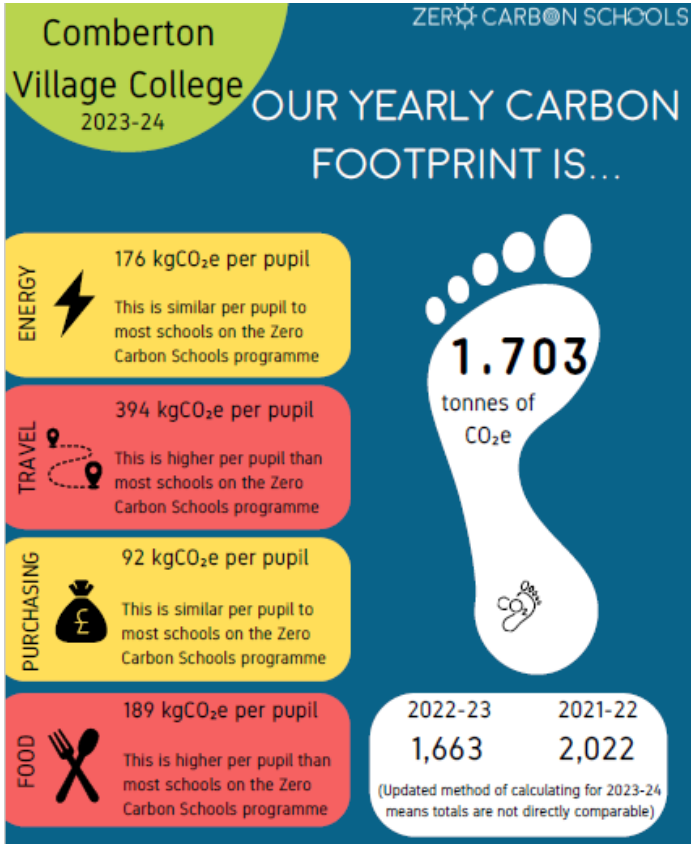
CAT Trust reported carbon emissions 2024

THE CAM ACADEMY TRUST
(A company limited by guarantee)

UK Greenhouse gas emissions and energy use data for the period 1 September 2023 to 31 August 2024	**2023/24**	**2022/23**
Energy consumption used to calculate emissions (kWh)	7,153,421	7,786,793
Energy consumption break down (kWh):		
• gas	3,909,260 (2023 – 5,367,635)	
• electricity	3,117,801 (2023 – 3,015,277)	
• transport fuel	108,632 (2023 – 186,202)	
Scope 1 emissions in metric tonnes CO2e		
Gas consumption	718.80	843.10
Owned transport – mini-buses	5.49	7.30
Total Scope 1	724.29	850.40
Scope 2 emissions in metric tonnes CO2e		
Purchased electricity	726.88	702.98
Scope 3 emissions in metric tonnes CO2e		
Business travel in employee owned vehicles	27.51	41.68
Total gross emissions in metric tonnes CO2e	1,478.68	1,595.07
Intensity ratio Tonnes CO2e per pupil	0.210	0.233

Carbon Footprint of CVC as measured by the Green Schools Project's calculator – measured each January





Your schools total carbon footprint:

2,894.15

Tonnes co_2e* per year

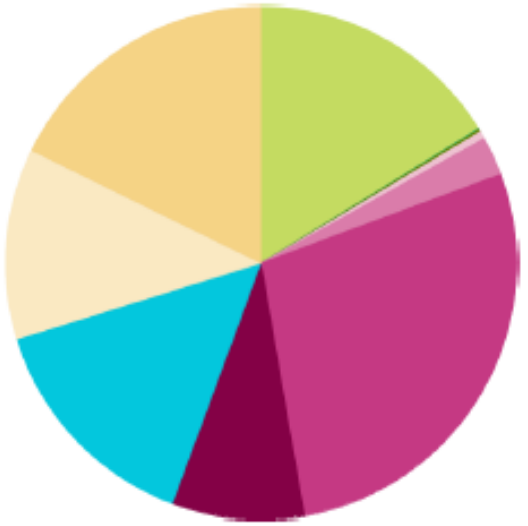
Carbon footprint according to ‘Count your Carbon’

Includes uniform

Your Carbon Footprint Report

Your schools total carbon footprint is estimated to be: 2,894.15 tonnes co_2e* per year

Operational area	Emissions area	t co_2e*	% of footprint
Energy & Utilities	Fuel Usage	0	0%
	Electricity Usage	468.2	16%
	Waste Usage	1.3	0%
	Water Usage	3.6	<1%
Transport	Vehicles	12.8	<1%
	School Trips	70.7	2%
	Student Commutes	808.5	28%
	Staff Commutes	242.2	8%
Food & Drink	Meals	419.8	15%
Purchases	Spending	347.4	12%
	Uniforms	519.6	18%



*‘t co_2e’ or ‘co_2e’ tonnes means ‘tonnes of Carbon Dioxide Equivalent’. Under the GHG protocol, 7 greenhouse gases are tracked and summarised as the equivalent amount of Carbon Dioxide that would produce the same warming effect.

Uniforms	519.6	18%

CAMPUS changes at CVC since 2018

- Rooftop solar PV
- Sitewide LED lighting upgrades
- Updated Building Energy Management Systems
- Plantroom insulation
- Emitter controls

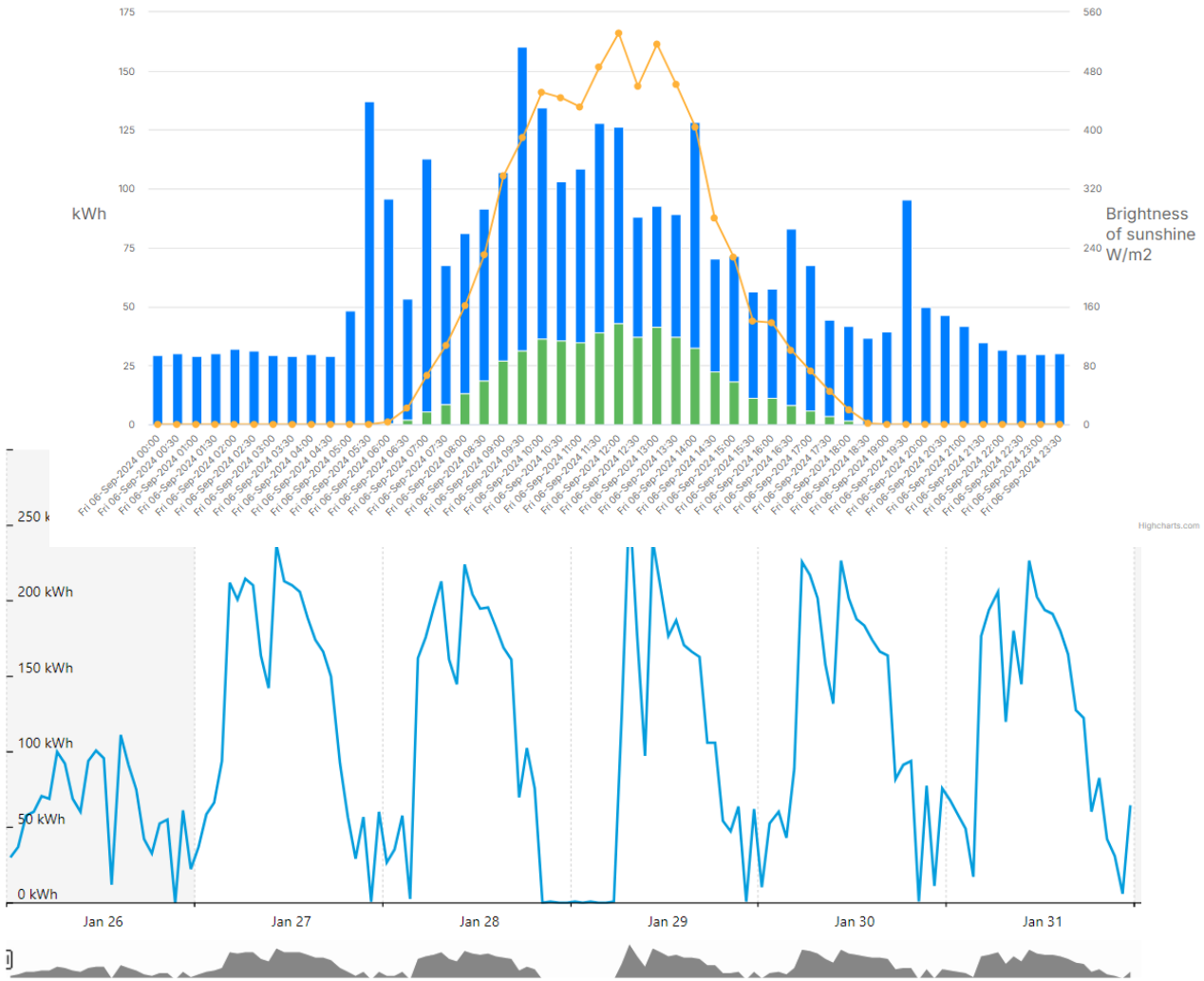
RE:FIT 3 Framework

eat Pump retrofit to replace oil

SOLAR PANELS

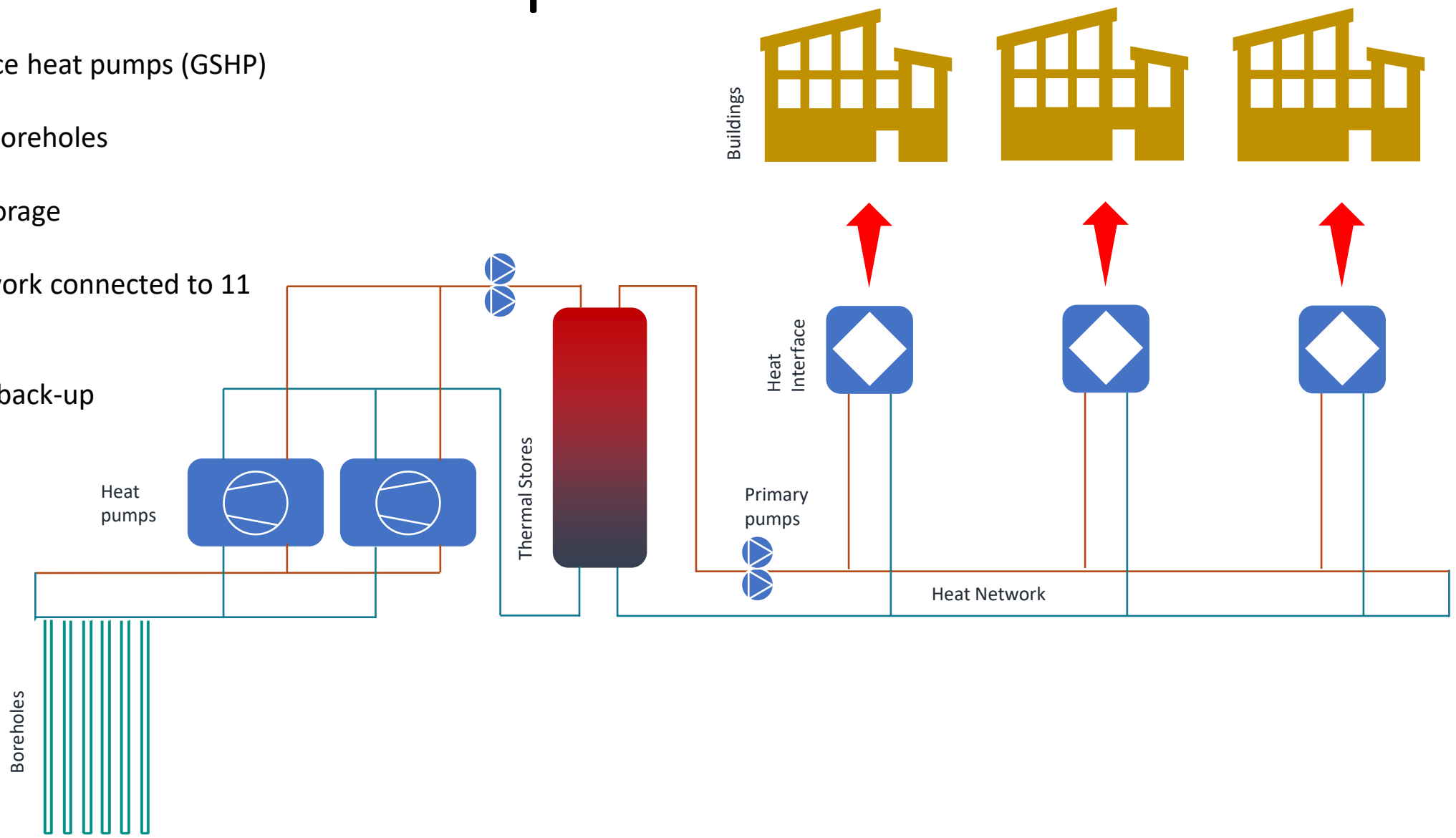
3 arrays at the school – use now includes powering GSHP

A good day is shown on the graph where the solar panels produced half the electricity used in the school



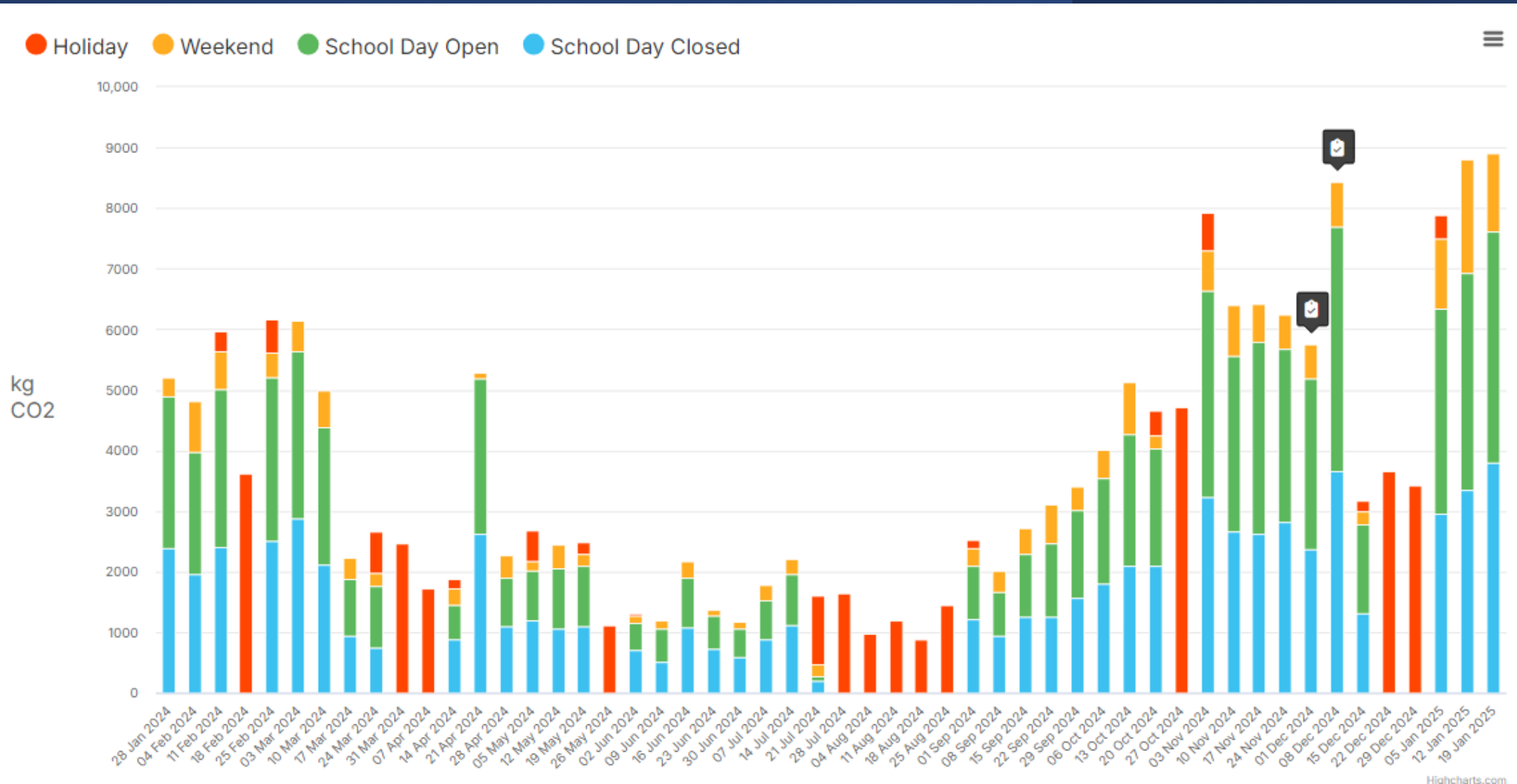
Ground Source Heat Pump

- 2 x Ground-source heat pumps (GSHP)
- 60, 200m deep boreholes
- 15m^3 thermal storage
- 500m Heat Network connected to 11 plant rooms
- Electrode boiler back-up



Electricity Use January 2024 – January 2025 - Measured in CO2e

Usage over the last 12 months. From Energy Sparks. Eco team and site team analysed daily use.



Food from the canteen

Balance of Veggie meals to meat has changed – reducing the average carbon footprint of a meal. Sandwiches now with a carbon footprint label!!

2023

WEDNESDAY 10TH MAY

SWEET & SOUR CHICKEN (G/F) £1.25
SAVOURY MINCE & RICE (G/F) £1.25
PASTA BASILICO (VEGAN) £1.25
SWEET POTATO CURRY (G/F VEGAN) £1.25
APPLE SPONGE 80P

THURSDAY 11TH MAY

SHEPHERDS PIE (G/F) £1.25
TUNA SWEETCORN & PASTA BAKE £1.25
QUORN BOLOGNESE (VEGAN) £1.25
VEGETABLE CURRY (G/F VEGAN) £1.25
GINGERBREAD 80P

2024

THURSDAY

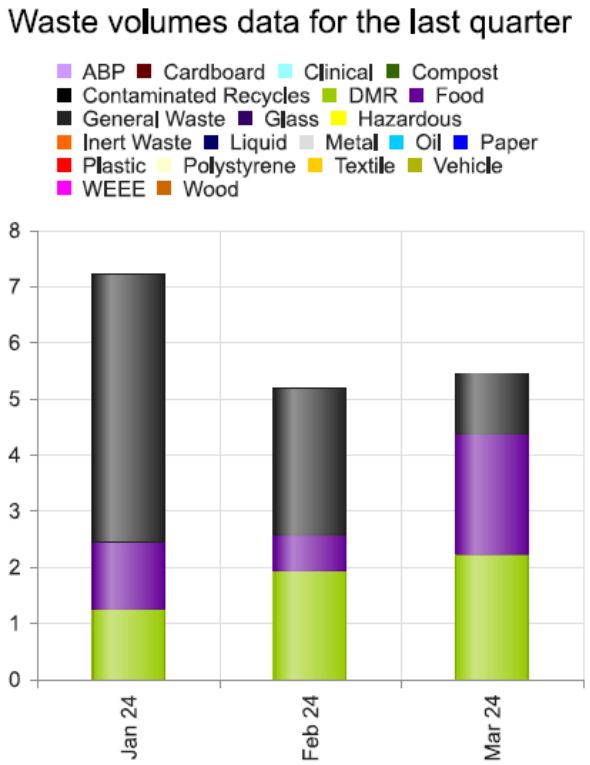
PORK & VEGETABLE PASTA BAKE £1.25 1.42kgCO2e
SWEET CHILLI VEG STIR FRY (GF & VEGAN) £1.25 0.20kgCO2e
COTTAGE PIE (GF) £1.25 4.02kgCO2e
GINGERBREAD 80P 1.40kgCO2e

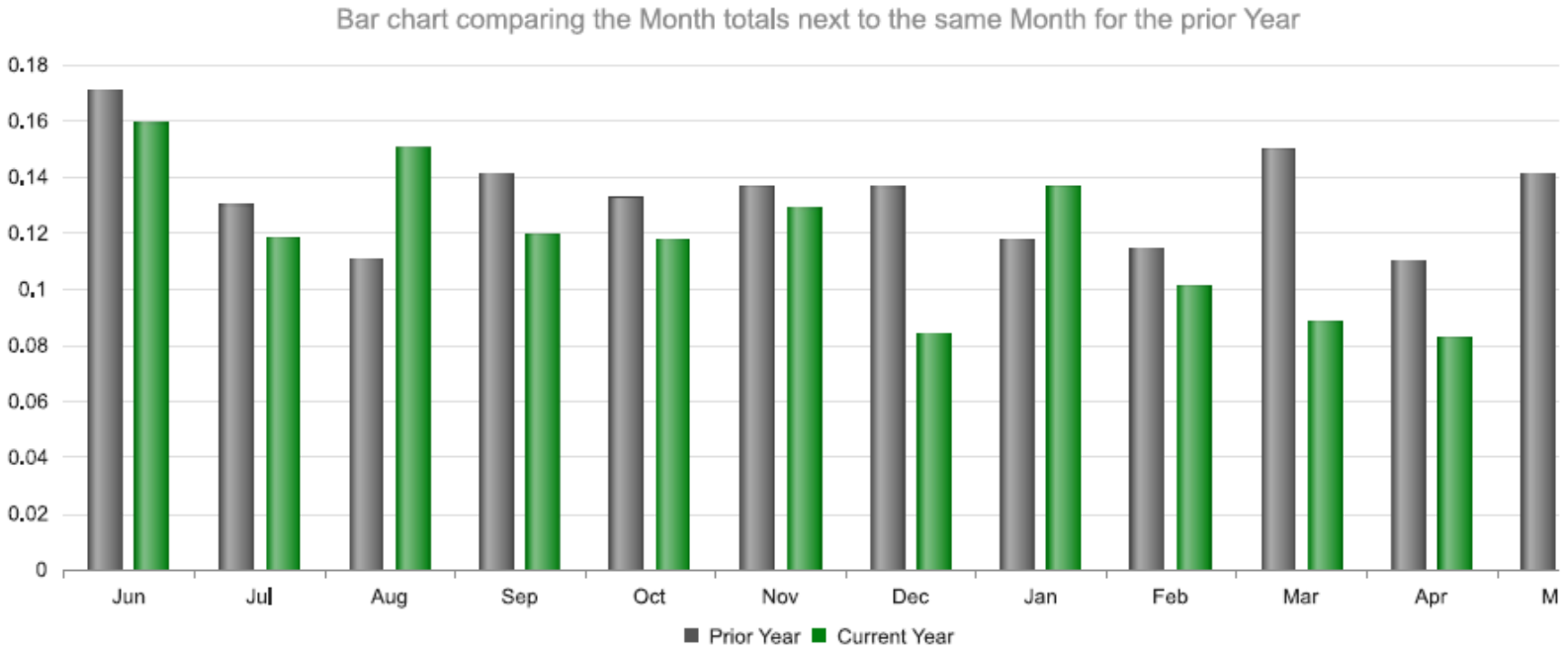
FRIDAY

CHICKEN CURRY (GF) £1.25 1.54kgCO2e
VEG KORMA CURRY (GF & VEGAN) £1.25 0.69kgCO2e
MAC N CHEESE £1.25 0.79kgCO2e
TREACLE SPONGE 80P 0.55kgCO2e

Waste

Food waste now being collected, plus school compost heap. Carbon footprint reduced most months.





Water

A leak in October increased the usage this year, previous use 9,626 units.

Total Cost £32 124

Activity	Consumption Units	Year	Consumption	Conversion Factor	Emissions (tCO_2e)
Water Supply	Cubic Meter	2023-24	13,142	0.344	4.52
Water Treatment	Cubic Meter	2023-24	13,142	0.708	9.30
Total					13.83

CVC had a Life Cycle Analysis (LCA) done for all the devices in the school.

ICT

It is calculated that Comberton Village College generates 325,036 $kgCO_2e$ of information and communications technology (ICT) related greenhouse gas (GHG) emissions during the total lifespan of the current end user computing (EUC) environment (Figure 1 and Table 2).

The total ICT carbon footprint of 325.0 thousand $kgCO_2e$ is equivalent to emissions caused by an average car driving of 1.9 million kilometres (km) or 48 times around Earth's equatorial circumference.

The annual GHG emissions of 61,471 $kgCO_2e$ requires 2,794 mature trees to remove the resulting ICT carbon footprint from the Earth's atmosphere via photosynthesis during every year of operation.

86% of the total carbon footprint is generated by computer supply chain GHG emissions (scope 3) including device production, distribution and eventual end of life services such as recycling e-waste. This equates to 278,160 $kgCO_2e$.

The remaining 46,876 $kgCO_2e$ or 14% of the total carbon footprint is caused by computer electricity consumption which generates use-phase GHG emissions (scope 2). Annually, 43,721 kWh of electricity is consumed generating 9,051 $kgCO_2e$ emissions per year. At £0.30 per kWh, this costs £13,116 annually.

Potential e-waste based upon the current computer asset inventory is 2,925kg. With 3,044 identified EUC devices in operation, the average e-waste value per device is 1.0kg.

Lifetime Carbon Footprint ($kgCO_2e$)	Scope 3 Emissions ($kgCO_2e$)	Annual Scope 2 Emissions ($kgCO_2e$)	Annual kWh (kWh)	Annual Electricity Cost (£)	E-Waste (kg)
325,036	278,160	9,051	43,721	£13,116	2,925

Travel

How many pupils **Walk, Scoot or Cycle** to school? 236
How many pupils take the **Bus** to school? 1146
How many pupils take the **Train or Tube** to school? 0
How many pupils are driven by **Petrol or Diesel Car**? 157 (estimated - 90% of 174)
How many pupils are driven by **Electric or Hybrid Car**? 17 (estimated - 10% of 174)

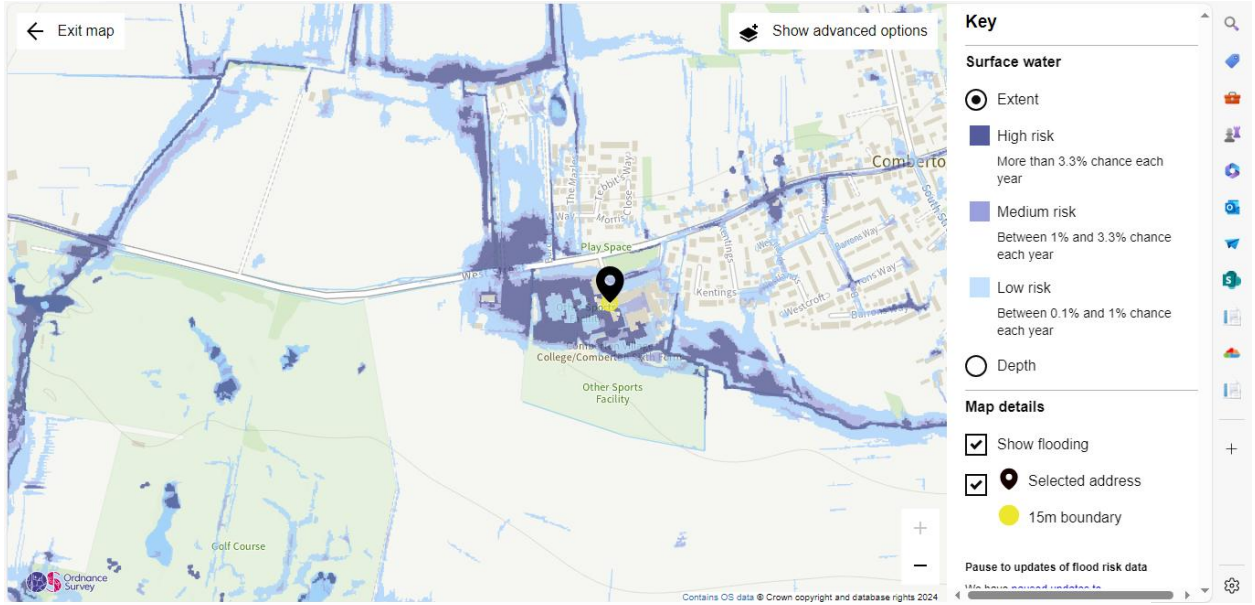
Pupils					
Method	Number	Miles	EF	CO2 (kg)	CO2(t)
Walk/Scoot/Cy	236		0	0	0.0
Bus	1146	5138664	0.053	128012	128.0
Train/Tube		0	0.04	0	0.0
Car	121	622908	0.28	174414	174.4
Car share		0	0.28	0	0.0
Taxi	36	3.4	0.14876	5535	5.5
Electric Car	17		0.09		
Total	1556			302426	302.4
Total on roll	1957			380365	380.4

Adaptation and Resilience

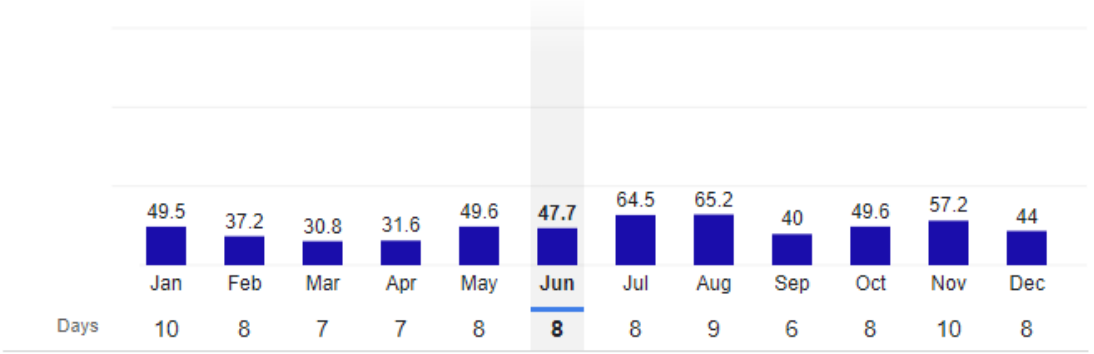
- Met Office- Explore the Climate of your Local Authority
- What will climate change look like in your area? - BBC News
- UK Climate Risk- CCRA3-Young-Persons-Factsheet.pdf
- ClimateJust
- Check the long-term flood risk for an area in England - GOV.UK
- Climate Risk Indicators

Resilience

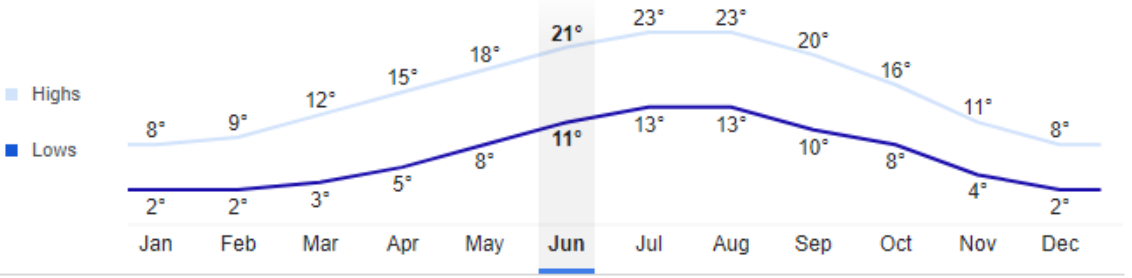
Need to identify areas of risk due to extreme weather



Rainfall (millimetres)



Temperatures (°C)



Rainfall (millimetres)

Biodiversity

Biodiversity Stripes from WWF Living Planet Index

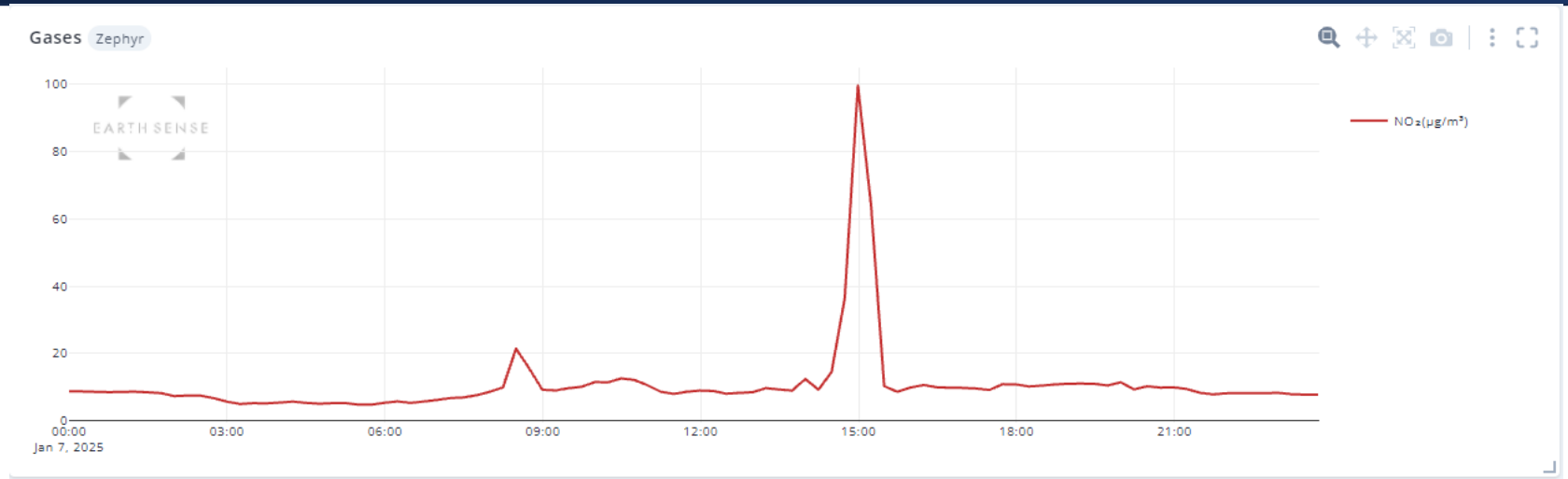
Species are going extinct
1000 – 10,000 times faster
than background levels

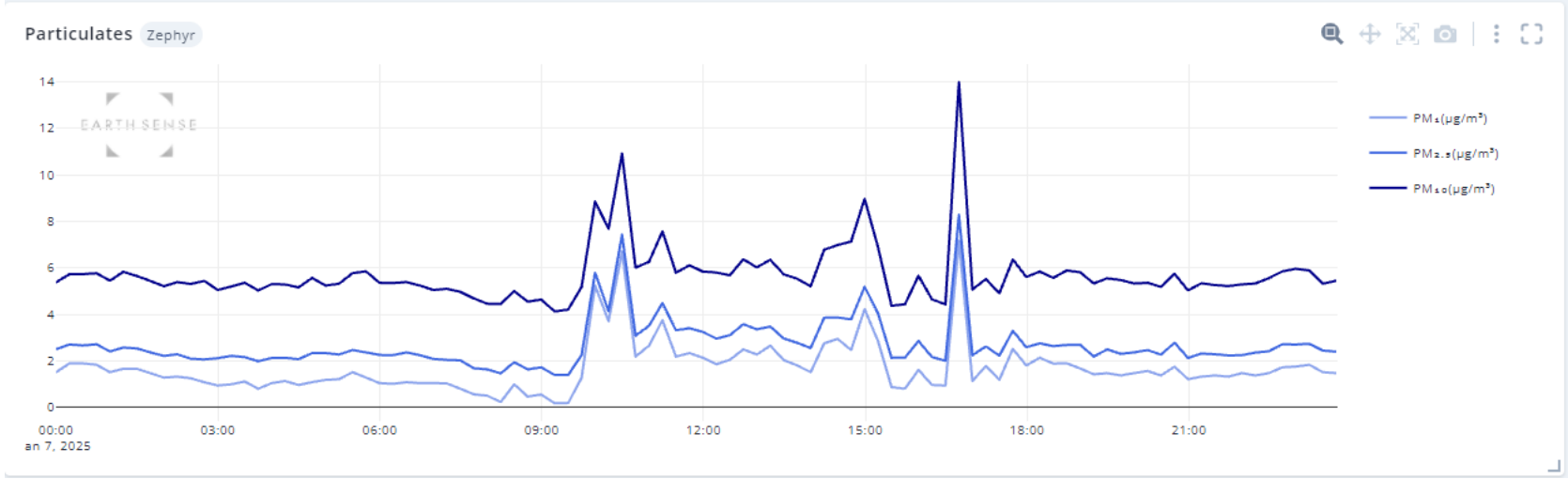
How many species are we losing? | WWF (panda.org)

Biodiversity tracking: National Education Nature Park

Air Quality Monitor put in by South Cambs Council

Letter has been sent to the bus companies from the school council about the air quality results.





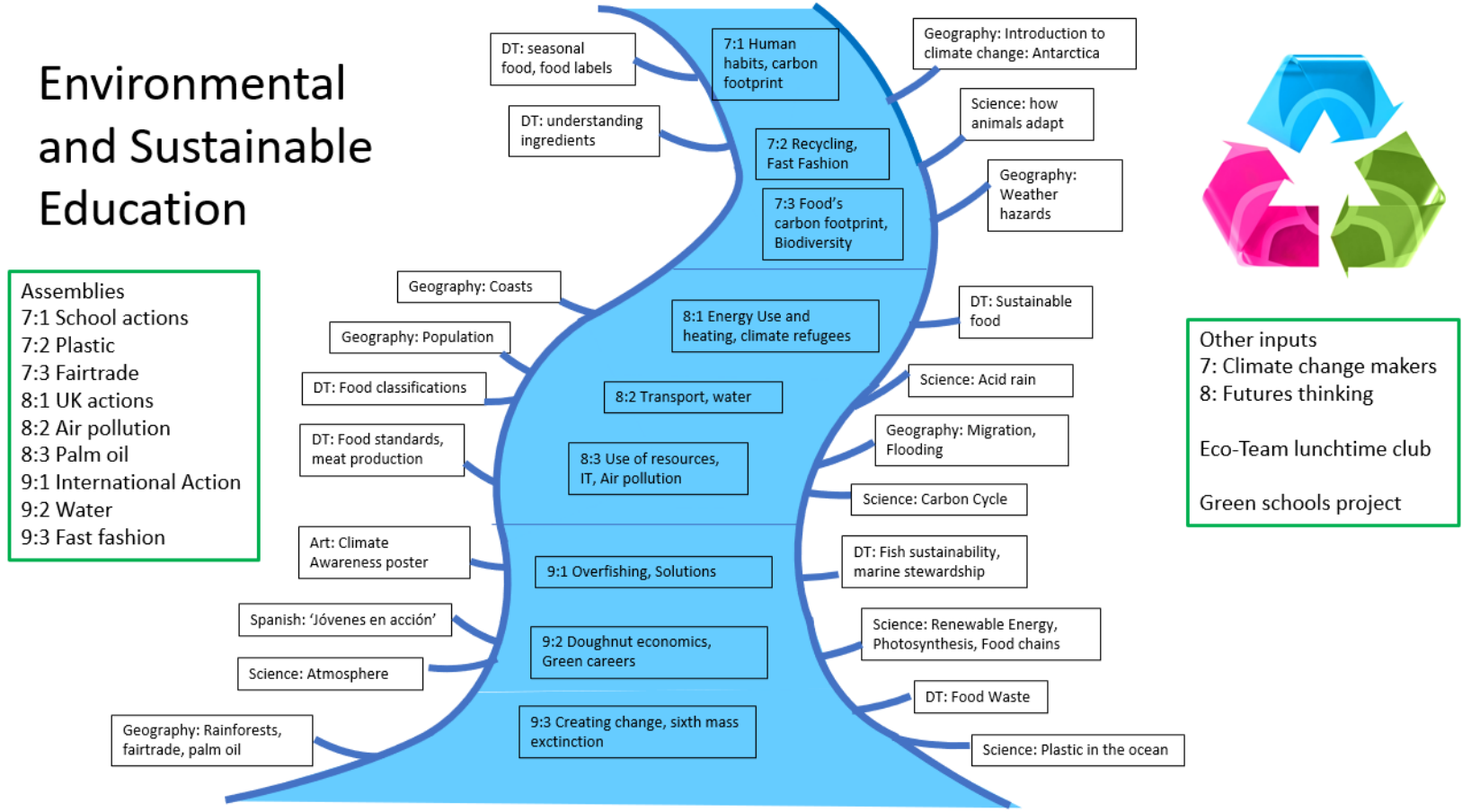
https://portal.earthsense.co.uk/SouthCambsCouncilPublic/data

Climate Education and Green Careers

Prepare students for a world impacted by climate change through education & practice.

- We have set up an Environmental and Sustainable Education (ESE) curriculum for Key stage 3. This is 20 lessons worth of eco lessons focused on the head, heart and hands approach – so combining knowledge, how we might feel about the issues involved and most importantly climate action.

- We have also included Sustainability within the Curriculum Immersion days.



Curriculum: Emvironmental and Sustainability Education

	• Climate Emergency / eco anxiety – National Action • Students are familiar with current targets and understand what computer models suggest the impacts will be of achieving or not achieving these targets • Students are familiar with some current data findings and the possible implications of these for levels of heating in the future – typically in 2100 • Population increase • Climate Migration	• Lesson • Lesson • Geography • Geography	• Year 9 Term 1 • Year 9 Term 1 • Year 8 Term 2 • Year 8 Term 3
Responses to Climate Change, 	Carbon Footprint • Individual • National Mitigation of climate change • Individual solutions Lifestyle choices, sustainable living • Local Solutions • National Solutions • Global solutions • Net Zero • Geo-engineering – carbon capture • UN agreements - Intergovernmental agreements (COP), NET ZERO?	Changing our behaviour • Thought box activities on Climate pledge (individual) • Climate campaigns (school) • Advocacy (Local and National) – Climate strikes, XR • Thought box: Climate heroes • UNccElearn	• Year 7 term 1 • • Year 7 Term 1 • Year 7 Curriculum Extension • Year 8 Curriculum Extension • Year 9 Curriculum Extension • Year 9 Term 1

Environmental and Sustainable Education

Term 1	Term 2	Term 3
Year 7		
Lesson: What is climate change, Actions Lesson: Carbon footprints	Lesson: Waste, Reduce, reuse, recycle Lesson: Fast Fashion	Lesson: Increasing Biodiversity in school and at home Lesson: Sustainable food
Assembly: Climate change and School actions	Assembly: Consumer choices (fairtrade)	Assembly: Food Assembly: COP26 Assembly: Transport
Other: Curriculum extension – global changemakers	Other:	Other:
Other subjects: Introduction to climate change (Geography) Seasonal fruit, Local v imported produce Reading and understanding food labels (Food Technology)	Other subjects: The impact of climate change on Antarctica (Geography) Understanding ingredients and issues around using them via pop tart disassembly (Food Technology) Physics Energy Module L01 – Energy Stores L02 – Temperature & Thermal Conduction L03 – Infrared Radiation L04 – The Greenhouse Effect L05 – Climate Change & Renewable Energy L06 – Green Homes & your Carbon Footprint	Other subjects: The living world – how animals adapt to different weather conditions and environments (Science) Weather hazards and the impact of climate change (Geography). In our unit 'How do people respond to Evil and suffering?' we look at Natural evil and natural disasters. We discuss the reasons for some of these disasters and question if humans are partly responsible for these due to their care or lack of for the environment (RPE)
Assessment:	Assessment:	Assessment:

[Environmental & Sustainability Education - Comberton Village College (combertonvc.org)]

Snapshots of the ESE curriculum and curriculum audit

Next steps

- More accurate measuring of data
- Publishing and use of sustainability data
- Sustainability committee to include more stakeholders
- SMART targets set up in Climate Action Plan
- Sustainability within curriculum immersion
- Sustainability across all policies

Curriculum, Campus, Community, Culture

- At CVC, we have used the 4C's to look at sustainability. Curriculum and Campus are incorporated into the climate action plan.

Culture

- As a school we declared a climate emergency in November 2020.
- We have a strong eco team, made up of students from year 7 – 13, along with an environmental prefect in both the lower school and the sixth form
- The eco team regularly do school assemblies on different themes such as: – FairTrade, Palm Oil, Energy Saving, Plastic use, international events like COP.
- We have a sustainability committee that includes: Senior Management, the site team, the catering team and the eco team.
- We have a blog with news of our activities linked from the school's website: https://ecoteamcvc.wordpress.com/

Fom left, Emily Grey, Kat Piotrowicz, Lily Burton and Mabel Fletcher. Back, Olivia Seagrove
Picture: Keith Heppell

A 'climate emergency' week has been declared at Comberton Village College.

Katrina Barnes, a languages teacher at the school, said: "We're writing it into our school development plan that we have to be prioritising environmental action and environmental education.

"We've got different things going on across the week. For example, we launched the new blog on Monday (November 30) and Thursday we're doing a tree-planting session. And on Friday, each year group is declaring which pledges they will make, as individuals, to fight the climate emergency."

Katrina added: "We're really proud of the students and how much initiative they show."

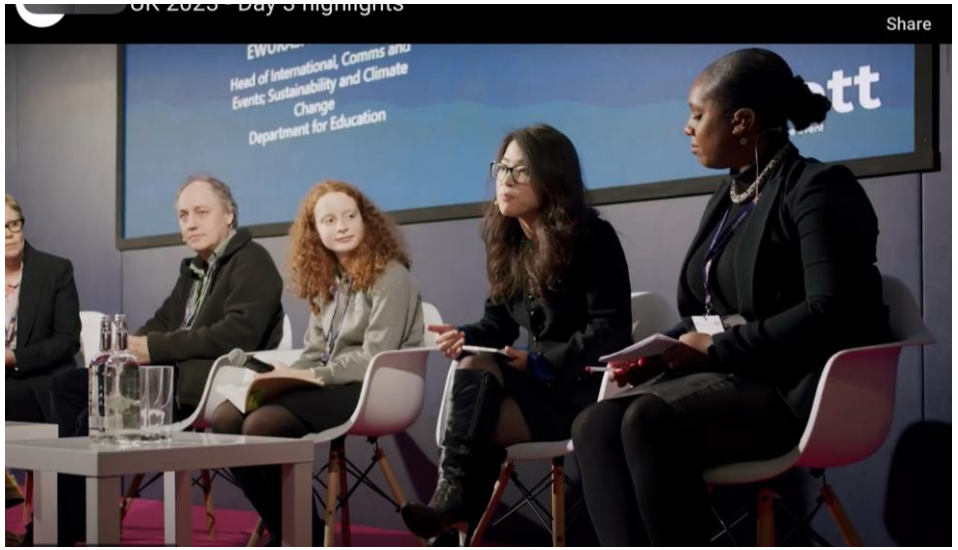
Community

As a school community we have implemented lots of eco initiatives in the school. Some are mentioned below

- We were instrumental in removing all single use plastic cutlery from the school canteen.
- Students have designed a resuable school water bottle.
- We provide paper recycling boxes to all classrooms and have written a school eco code
- We have created a compost heap, which the food tech department use for their food scraps.
- We put up signs to encourage cars to turn of their engines to improve air quality
- More initiatives can be found on the blog
- https://ecoteamcvc.wordpress.com/

COMMUNITY

- We have joined with a group of schools around Cambridge to form the Cambs Sustainable Schools Network, which is part of the wider UKSSN.
- The eco team have also given talks at a local eco fair at the South Cambs Council.
- We joined with 3 schools in South Cambs to take part in the Environment Action Group at the council.
- Photo shows a student and teacher at BETT taking part in a panel discussion on sustainability education.
- CVC has been included in sustainability education training videos as part of the UCL's Climate Change and Sustainability Education Centre.



Climate Action Plan

Climate Action Plan

Comberton Village College

One year plan: Autumn 2024 – Summer 2025

Your Carbon baseline: 1703 tonnes CO2e | **Date: January 2024**

Decarbonisation and Energy Efficiency: **Calculating and taking actions to reduce carbon emissions and becoming more energy efficient**

A climate action plan has been written and is an attachment on the website.
This will be reviewed each September.