



The GLOBE – Air Quality Campaign as a STEAM Learning Ecology

Between 11th November 2024 - 6th December 2024

SMC Erin Serracino Inglott
Middle School, Cospicua



Location of the site





Installation of the NO₂ tube and shelter

11th November 2024 at 8am in the school
parking area near the main road



Collection of data - 1

Counting by tally of the vehicles, bikes, construction trucks

Collection of data 2- Air Quality Monitor

Air Quality monitor readings of:

- Humidity
- Temperature
- VOC
- PM
- CO2





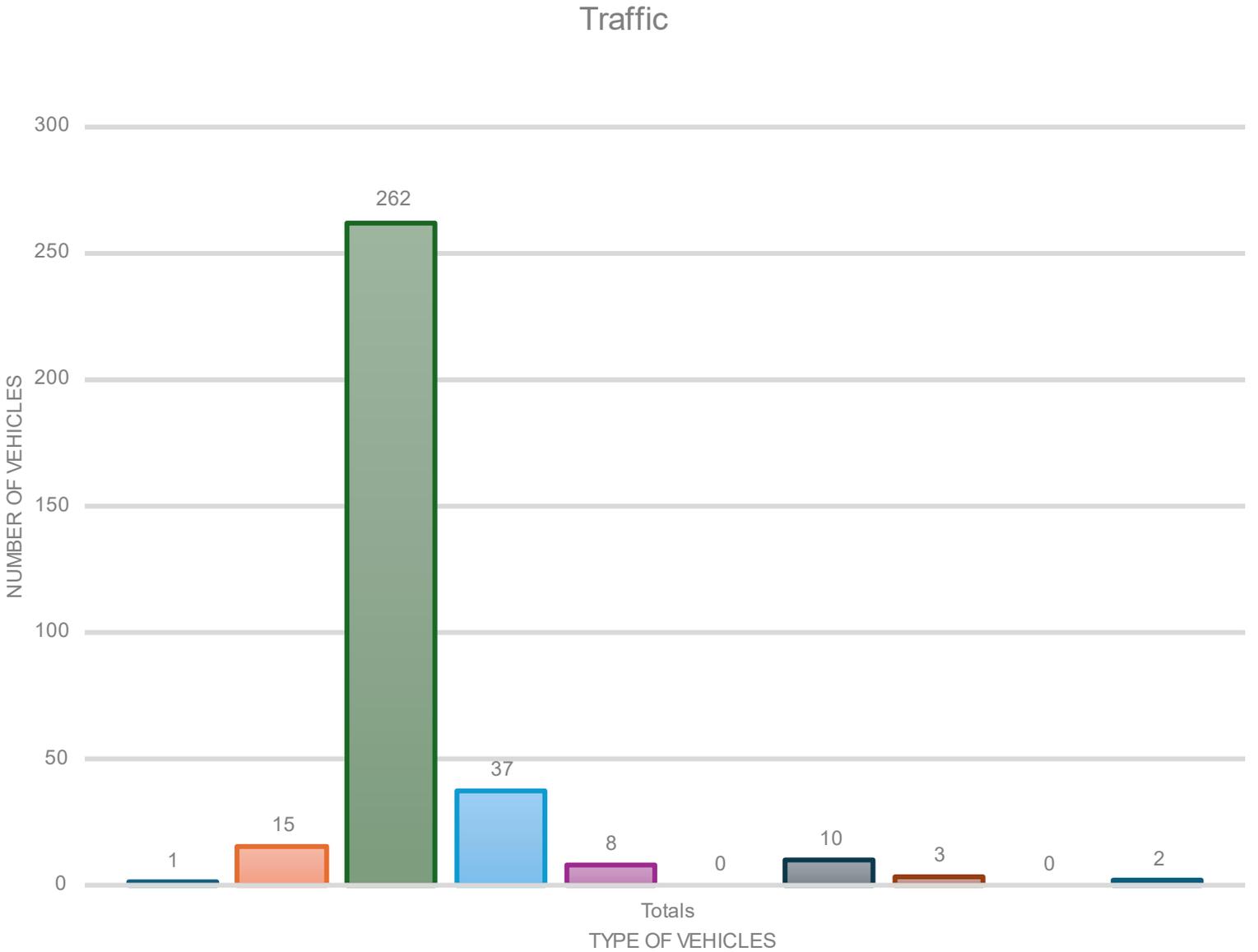
Data Collection 3 - Cloud Data

- Filling in sheets as regards visibility, type of clouds, wind force and rain,
- Teacher's Mobile Globe app was used to upload data on website.

Presentation of Data



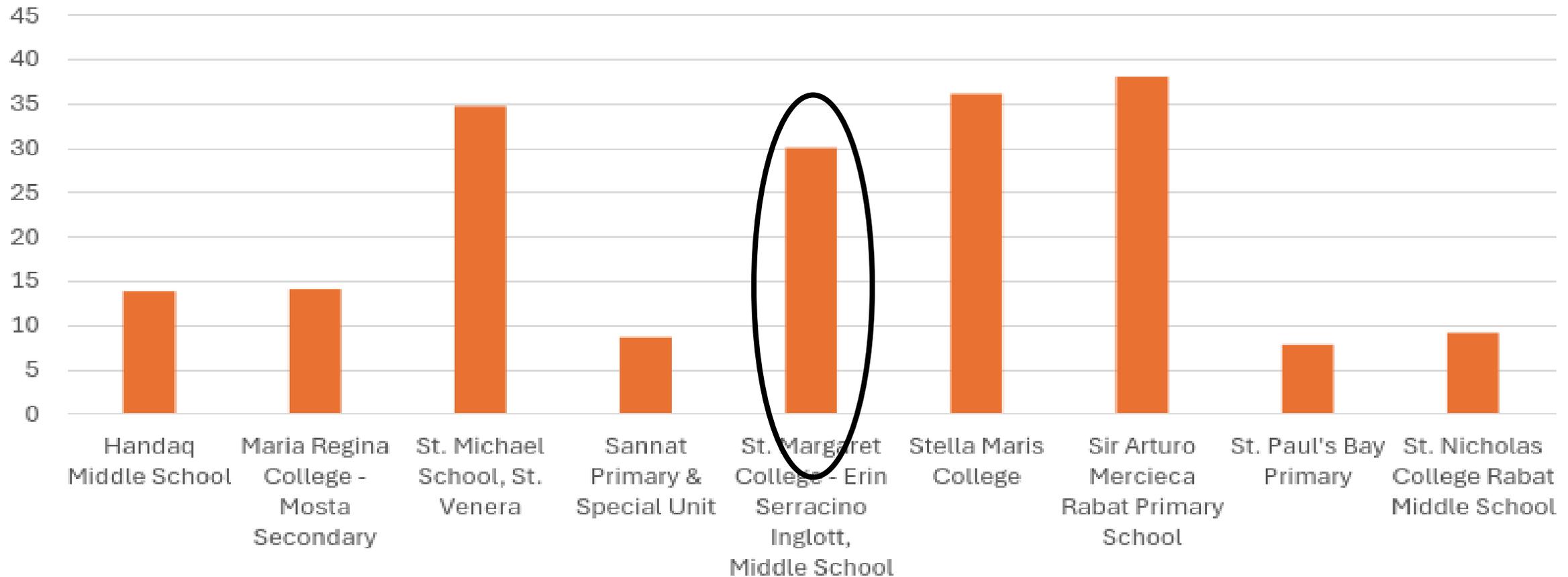
Traffic
passing
daily



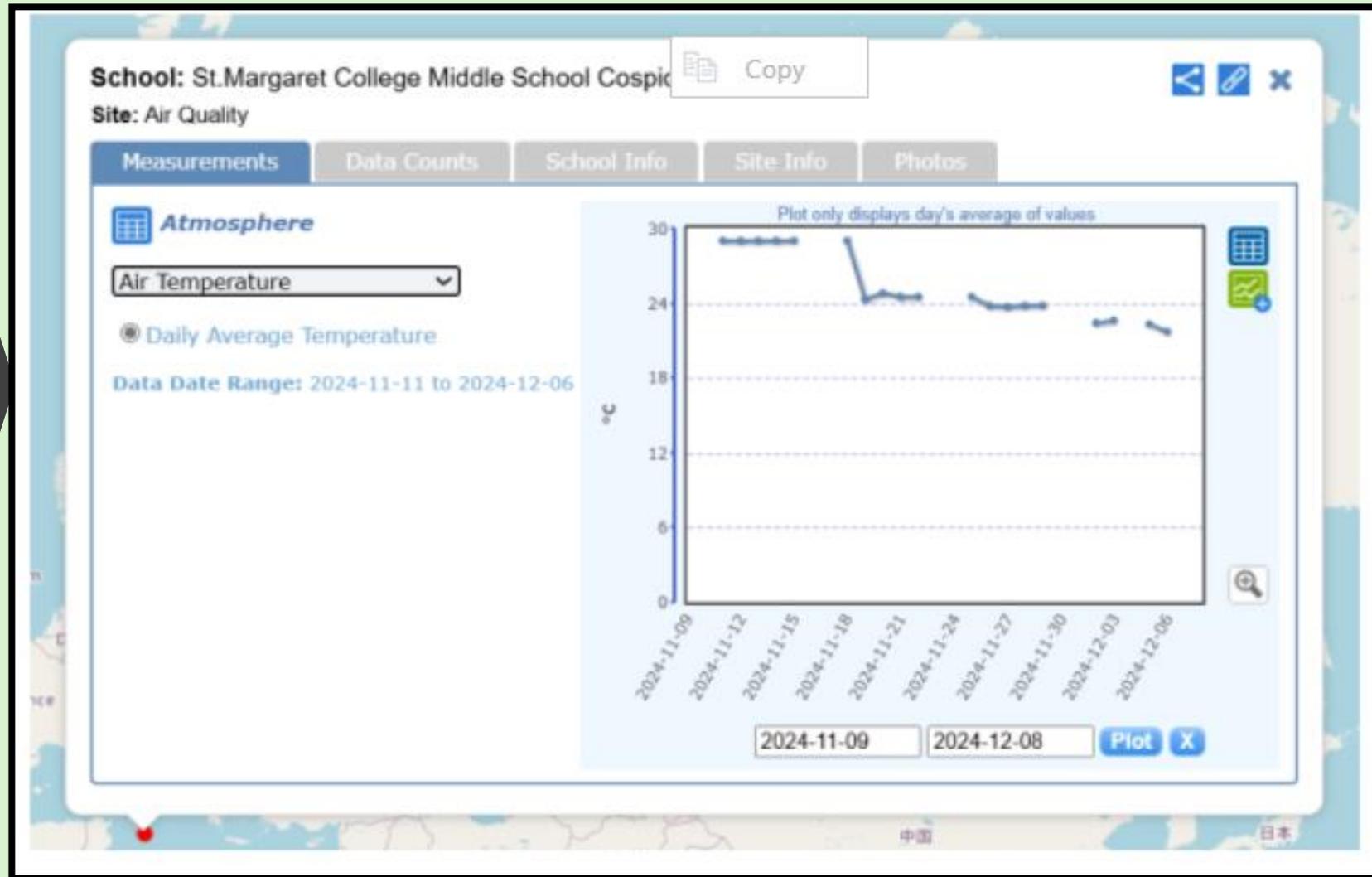
■ Bicycle ■ Motorcycle ■ Car ■ Van/Pickup ■ Small Lorry ■ Articulated Lorry ■ Bus/Coach ■ Construction Vehicle ■ Farm Vehicle ■ Others

NO2 Results

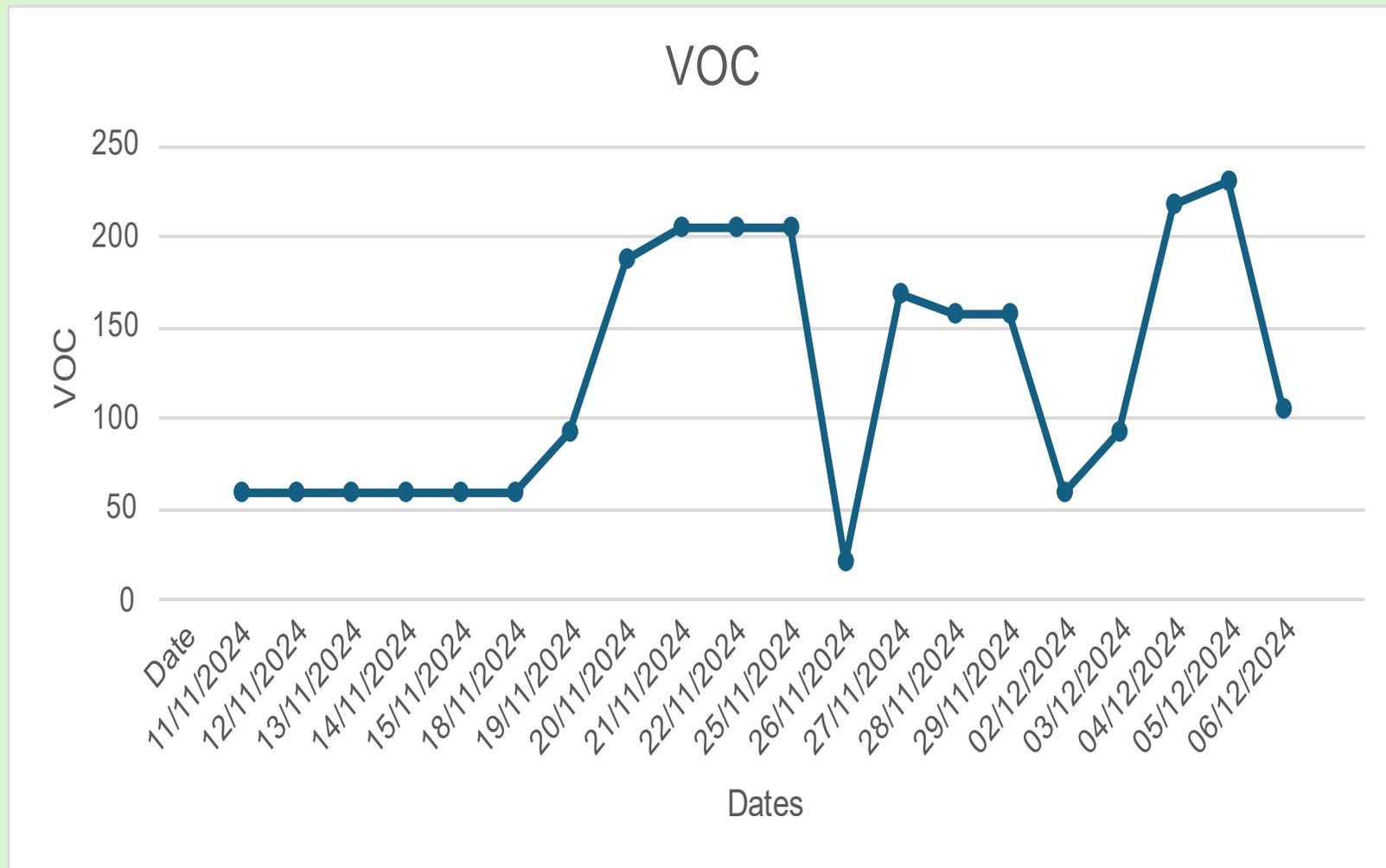
Level of NO₂ (µg/m³)



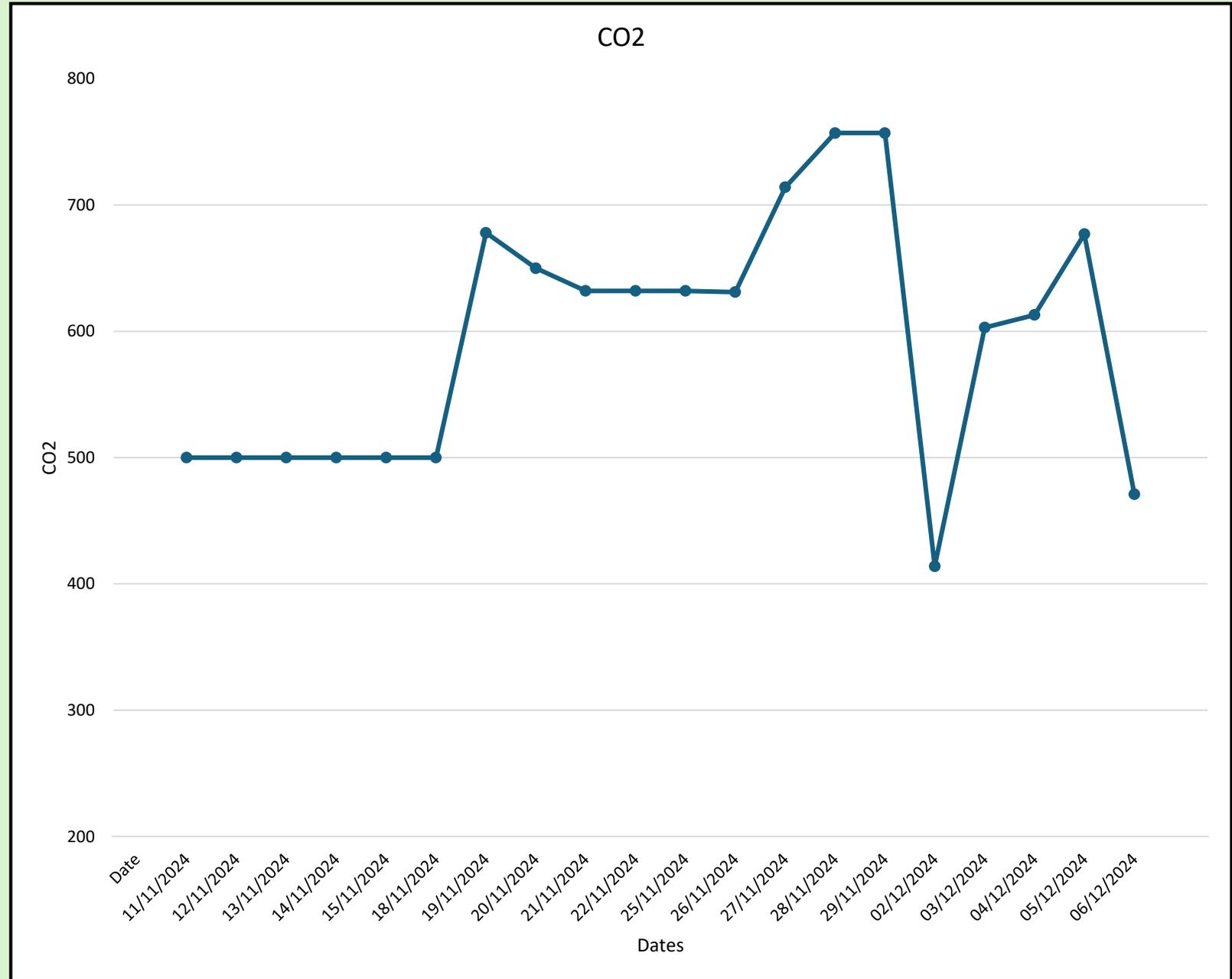
Air Temperature



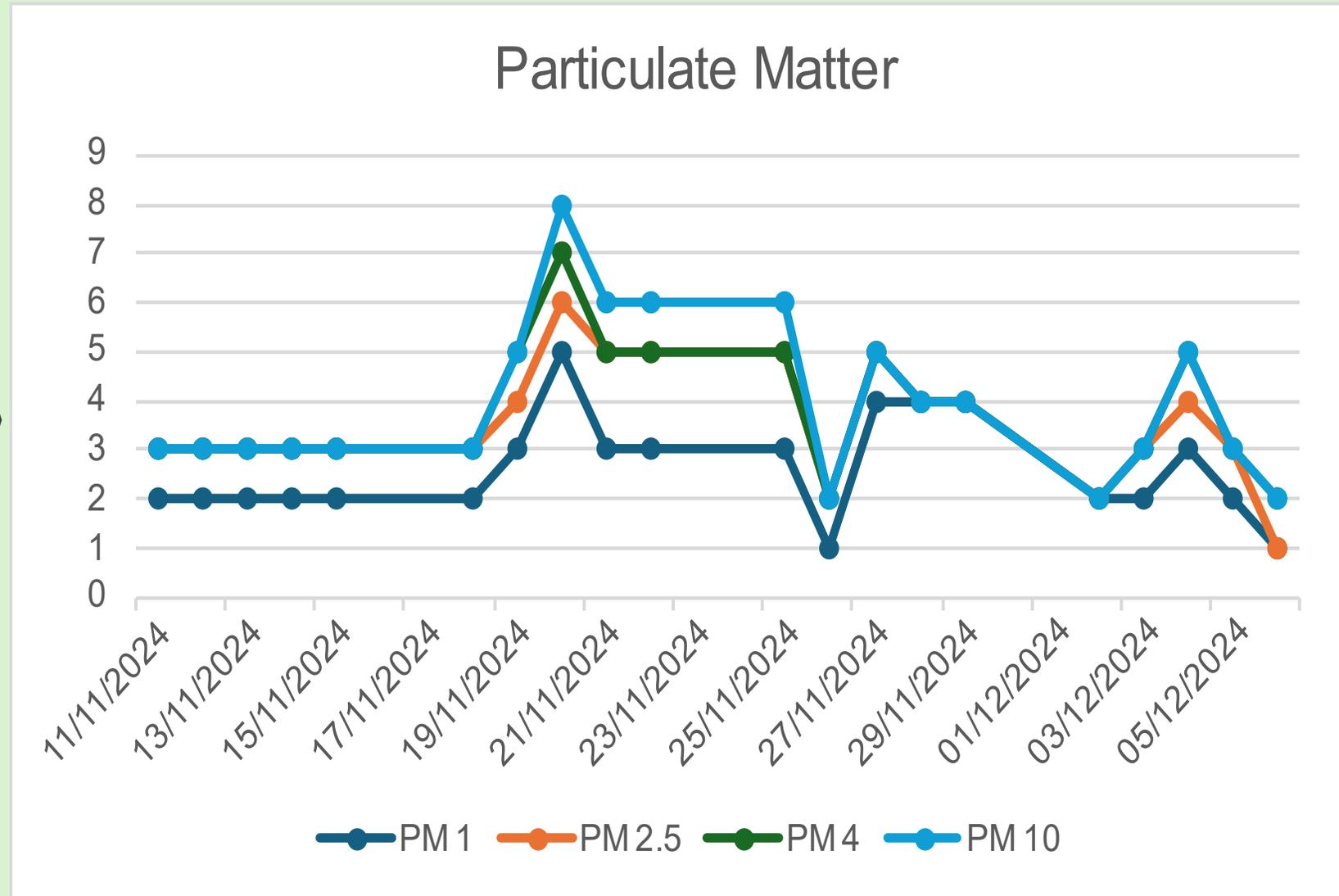
Volatile Organic Compounds



Carbon Dioxide Levels



Particulate Matter



Studying Clouds

- Percentage cover
- Cloud types (Low, Mid and High)
- Take pictures and upload on Globe website
- Satellite comparison and report

GLOBE Cloud Observations Paired with NASA Satellite Data

Total Satellite Comparisons: 1,254

Useful Resources: [How to Read My NASA GLOBE Clouds Satellite Comparison Table](#), [How to Compare My Cloud Observations with Satellite Data](#), [Cloud Cover](#), [Cloud Type](#), [Cloud Opacity](#), [Satellites](#)

Observation	GLOBE	METEOSAT-10 Satellite	Terra Satellite	NOAA-20 Satellite
Universal Date/Time	2023-08-16 11:22:00	2023-08-16 11:10	2023-08-16 11:28	2023-08-16 11:14
Latitude	51.45	51.13 to 51.77	51.01 to 51.81	51.04 to 51.84
Longitude	-0.98	-1.3 to -0.66	-1.38 to -0.58	-1.3 to -0.5
Total Cloud Cover	Scattered (25-50%)	Scattered 27.87%	Scattered 44.35%	Broken 60.24%
High Clouds	Short Lived Contrails: 1 Non Spreading Contrails: 3	No Clouds	Cover: Few (1.70%) Altitude: 10.25 (km) Phase: Ice 226.95 (K) Opacity: Transparent	Cover: Few (4.20%) Altitude: 8.27 (km) Phase: Ice 241.06 (K) Opacity: Transparent
Mid Clouds		Cover: Few (1.64%) Altitude: 2.08 (km) Phase: Water 284.68 (K) Opacity: Transparent	No Clouds	Cover: Isolated 19.38% Altitude: 2.48 (km) Phase: Water 277.9 (K) Opacity: Translucent
Low Clouds	Cumulus Cover: Scattered (25-50%) Opacity: Opaque	Cover: Scattered 26.23% Altitude: 0.91 (km) Phase: Water 291.24 (K) Opacity: Transparent	Cover: Scattered 42.65% Altitude: 0.98 (km) Phase: Ice/Water Mix 286.09 (K) Opacity: Transparent	Cover: Scattered 36.65% Altitude: 1.43 (km) Phase: Water 283.08 (K) Opacity: Translucent
GLOBE Cloud Photos and Corresponding NASA Satellite Images.	GLOBE Photos North East South West Up Down 	METEOSAT-10 Visible Infrared GEO Tutorial	MODIS Terra Worldview Worldview Tutorial	VIIRS NOAA-20 Worldview Worldview Tutorial
Click image to view ->				
Note: Photos submitted through GLOBE need approval before being displayed, this may take a few days.				
Sky Conditions, Surface Conditions and Observer Comments	Sky Conditions Sky Visibility: Clear Sky Color: Blue Surface Conditions Snow/Ice: No Standing Water: No Muddy: No Dry Ground: No Leaves on Trees: Yes Raining or Snowing: No	Are there any comments you would like to add? Be sure to add the name of the satellite for our record.		
		<input type="text"/>		
		<input type="button" value="Submit Comment"/>		



Sustainable Developmental Goals (SDG's)

SDG Number 3:
Good Health and Well-Being

SDG Number 4:
Quality Education

SDG Number 11:
Sustainable Cities and Communities

SDG Number 13:
Climate action

3 GOOD HEALTH
AND WELL-BEING



4 QUALITY
EDUCATION



11 SUSTAINABLE CITIES
AND COMMUNITIES



13 CLIMATE
ACTION



**Involving the
whole school
community
and the local
community**





Participating Students:

**Mason Muscat, Anais Pulis, Matthias Zerafa, Ella Haidon, Kaia Gauci,
Jake Dimech, Cataleya Desira, Matthias Bonnici,**