

Data Literacy Learning Activity - Atmosphere



**Air Temperature across GLOBE
on the same day**

Air Temperature across GLOBE on the same day

Topic: Comparison of the air temperature measured at different locations at similar latitude the same day (noon local time).

Age of students: 7-12

Skills developed: graph construction (incl. correct description of axis and legend), comparing the data of the same parameter, asking questions on why the data differ from each other

Prerequisites: basic knowledge of the GLOBE Visualization Tool

Big Idea: There are various local factors that impact the air temperature at particular study site (altitude, relief and weather conditions such as windspeed, cloud cover, precipitation etc.)



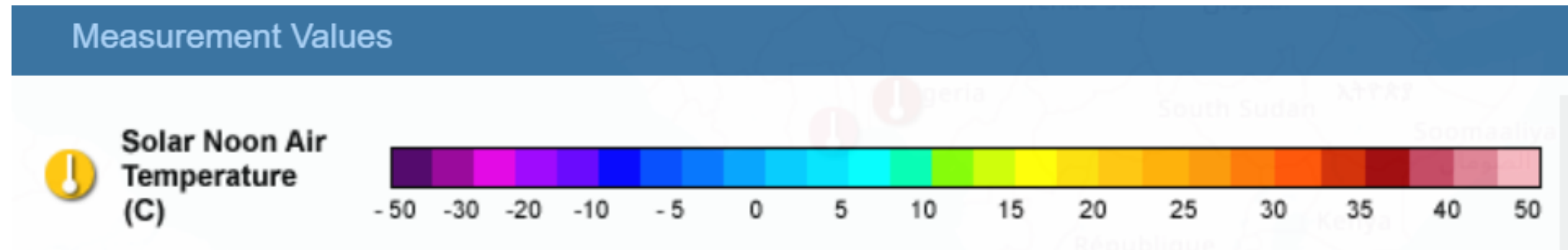
Content

Slide 4: Work Assignment for students

Slides 5-7: Instruction on how to find and filter out selected range air temperature data in the GLOBE Visualization Tool – following the process that the teacher from Zadar school did with her class.

Slide 8: The dataset students can work with (in case you don't want to spend time looking for the more up-to-date dataset or data from the latitude of your school)

Slides 9-11: Examples of the graphs constructed manually by students



Work assignment for students:

Task:

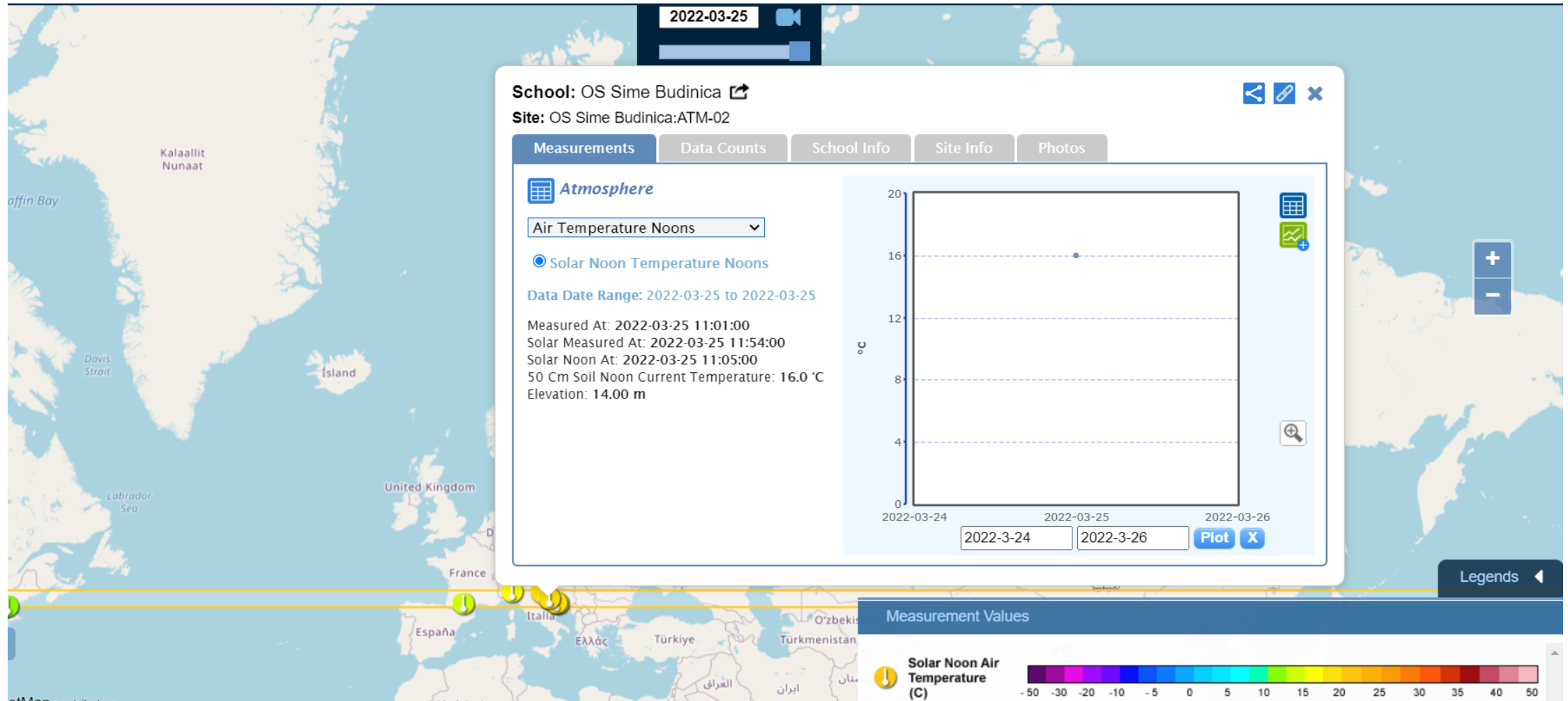
Compare air temperature measured on March 25, 2022 in GLOBE schools, Latitude 43 to 45, Longitude -180 to 180 and construct a graph of those readings. *Comment: Latitude was derived from that on which Zadar school was located (Lat: 44.1173°), you can come with your own.*

Steps:

1. Find schools (sites) on the (moreless) the same latitude, which collected the data for air temperature on the given date
2. Construct the graph displaying the different air temperatures coming from the selected locations
3. Make sure you describe the graph correctly (axis, scale, units, legend)
4. Interpret the data displayed and ask questions (Why the temperature differs? What local factors influence the temperature?)

The activity is based on the assignment from Elementary School Sime Budinica, Zadar, Croatia (teacher Zrinka Klarin) that they did as a part of 2022 Earth Day Air Temperature Challenge.

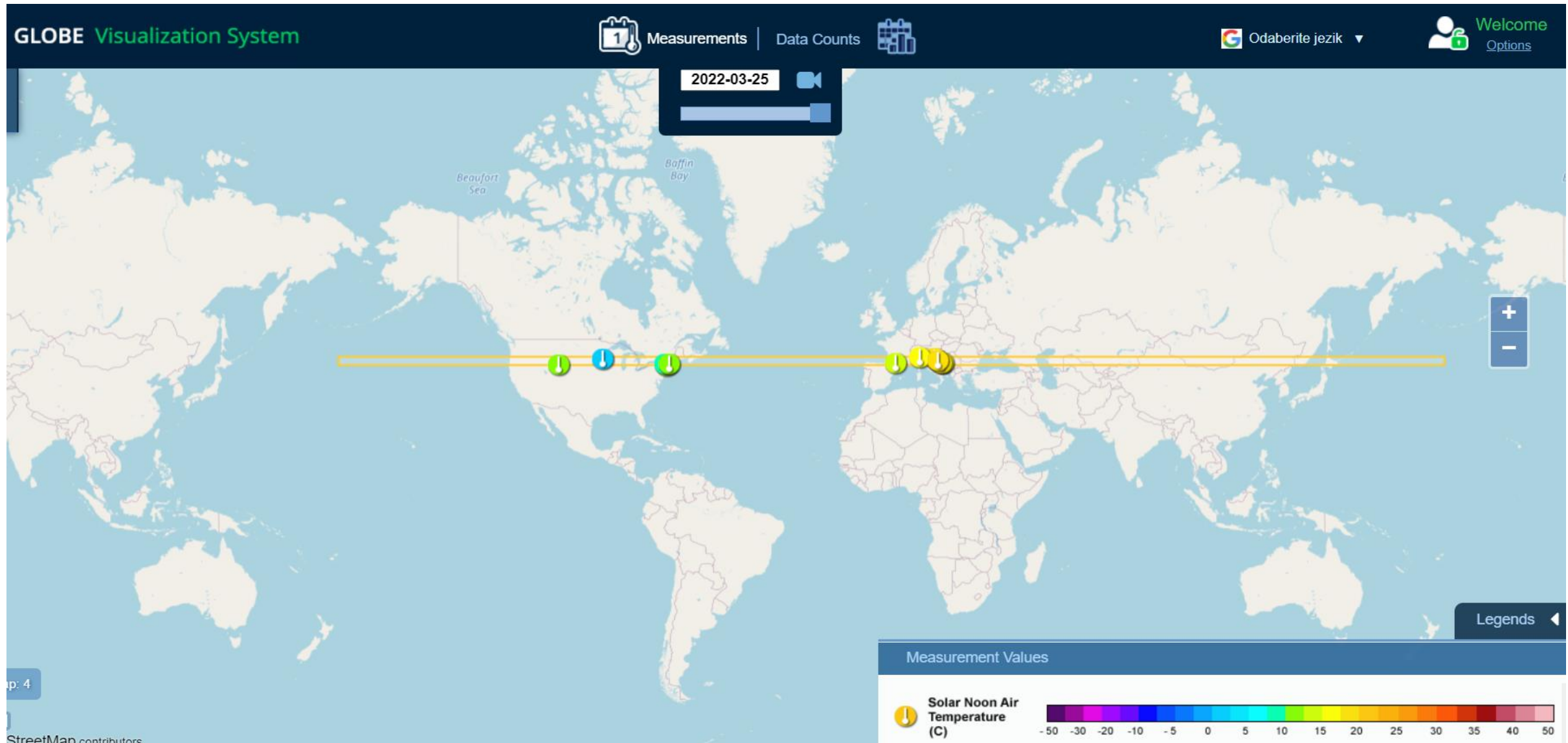
You can follow the steps of Zrinka's students – see the slides that follow.



Step 1: finding schools that measured air temp. on 25 March 2022 and are located in the given Latitude – see set up of the filter:

The screenshot displays the GLOBE Visualization System interface. At the top, the logo and name 'GLOBE Visualization System' are visible. Navigation tabs include 'Measurements' (with a calendar icon showing '1'), 'Data Counts', and a language selector 'Vyberte jazyk'. A user profile icon shows 'Welcome Options'. The main map area shows a geographical view of Europe and surrounding regions, with numerous circular data points representing school measurements. A date filter '2022-03-25' is active. A sidebar on the left contains a 'Filters' section with three options: 'Choose Site', 'Choose Site by School', and 'Choose Site by Teacher'. Underneath, the 'Find Multiple Sites:' section is expanded to 'By Lat/Lon Range'. The 'Latitude Range' is set to '-90° to +90°' and the 'Longitude Range' is '-180° to +180°'. Input fields show 'Latitude' as '43 to 45' and 'Longitude' as '-180 to 180'. A green 'Submit' button and a 'Clear' link are at the bottom of the filter sidebar. At the bottom of the map, a 'Measurement Values' legend shows a color scale for 'Solar Noon Air Temperature (C)' ranging from -50 to 50. The map also includes zoom controls and a 'Legends' button.

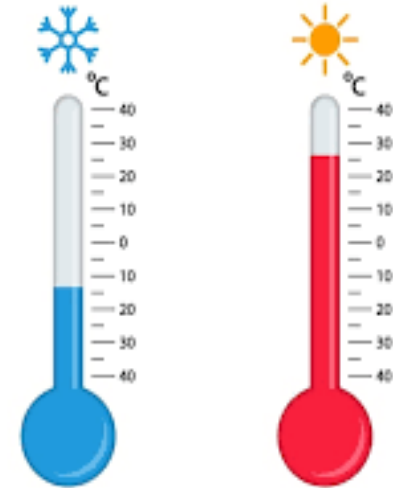
Step 2: analyzing results given by the Visualization Tool



Step 3: Recording the name of all selected GLOBE schools along with the air temperature for the given date:

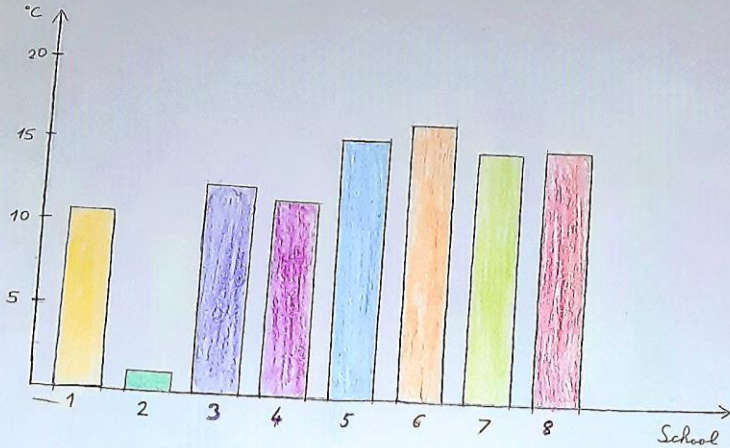
GLOBE schools located in the belt and air temperatures measured at each school:

- Willow Creek Elementary School, USA 11.5°C
- Sibley East Middle High School, USA 1.1°C
- Lone Oak Campsites , USA 13.1°C
- 1.Lycée Henri Matisse Cugnaux, France 12.7°C
- Italy GLOBE v-School, Italy 16.8°C
- OŠ dr Mate Demarina, Croatia 17.6°C
- OS Sime Budinica, Croatia 16.0°C
- OS Josip Pupacic, Croatia 16.1°C



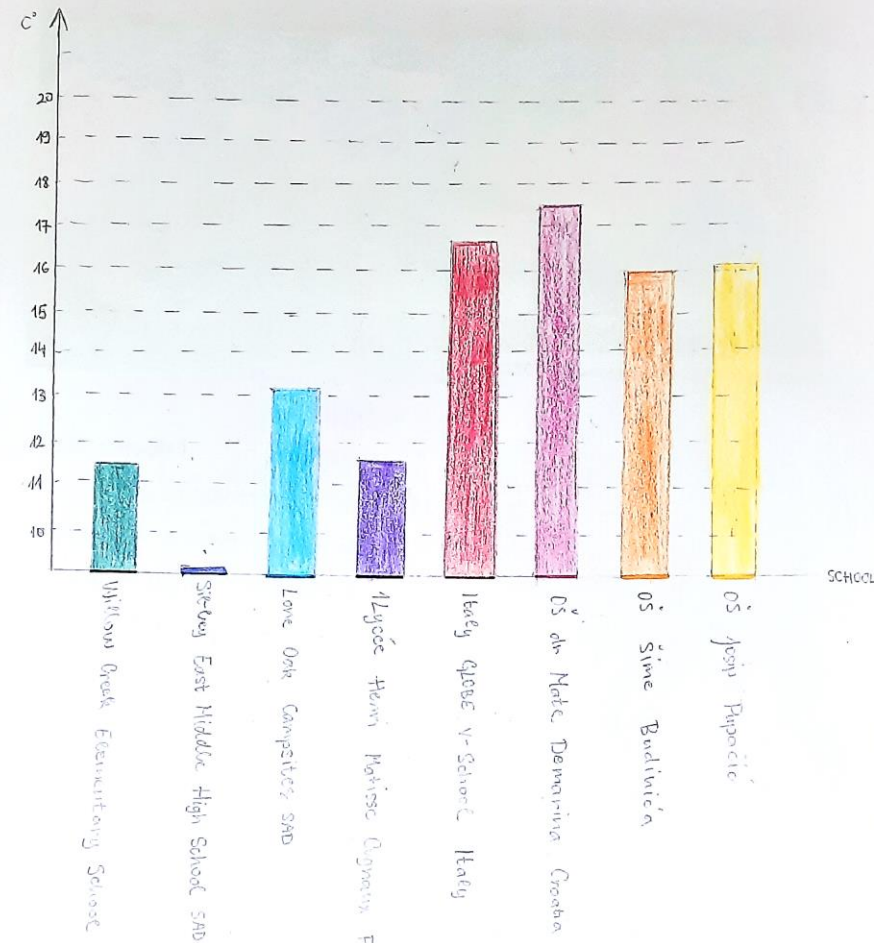
Step 4: students constructing the graph manually

Comparison of air temperature measured on March 25, 2022 in GLOBE schools, Latitude 43 to 45, Longitude -180 to 180

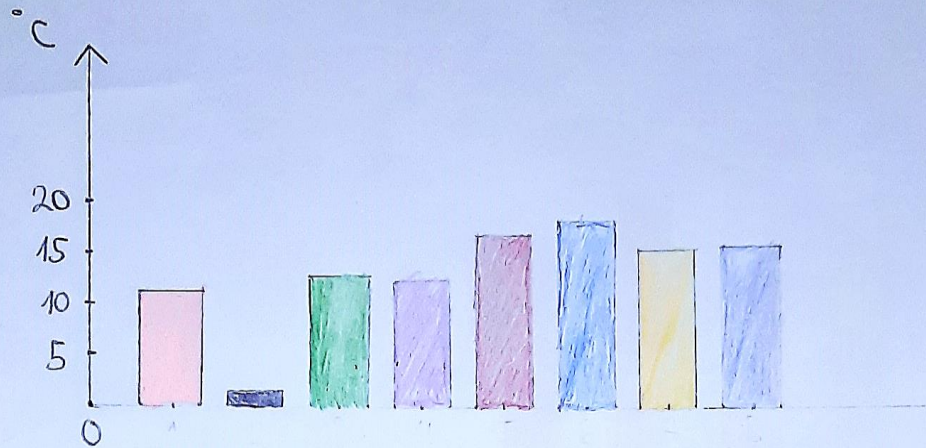


1. Willow Creek Elementary School SAD 11.5°C
2. Sibley East Middle High School SAD 1.1°C
3. Lone Oak Campsites SAD 13.1°C
4. Lycée Henri Matisse Cugnaux France 12.7°C
5. Italy GLOBE r-School Italy 16.8°C
6. OS dr Mate Demarina Croatia 17.6°C
7. OS Sime Budinica 16.0°C
8. OS Josip Rupucic 16.1°C

Comparison of air temperature measured on March 25, 2022 in GLOBE schools, Latitude 43 to 45, Longitude -180 to 180

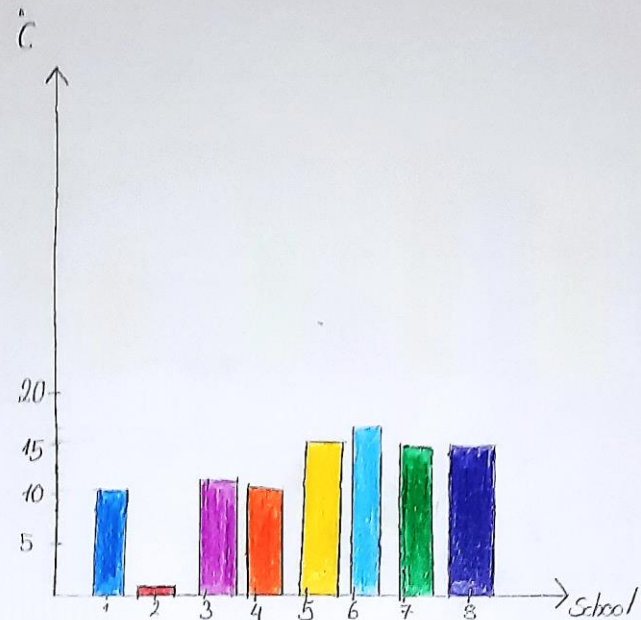


Comparison of air temperature measured on March 25, 2022 in globe schools, Latitude 43 to 45, Longitude -180 to 180



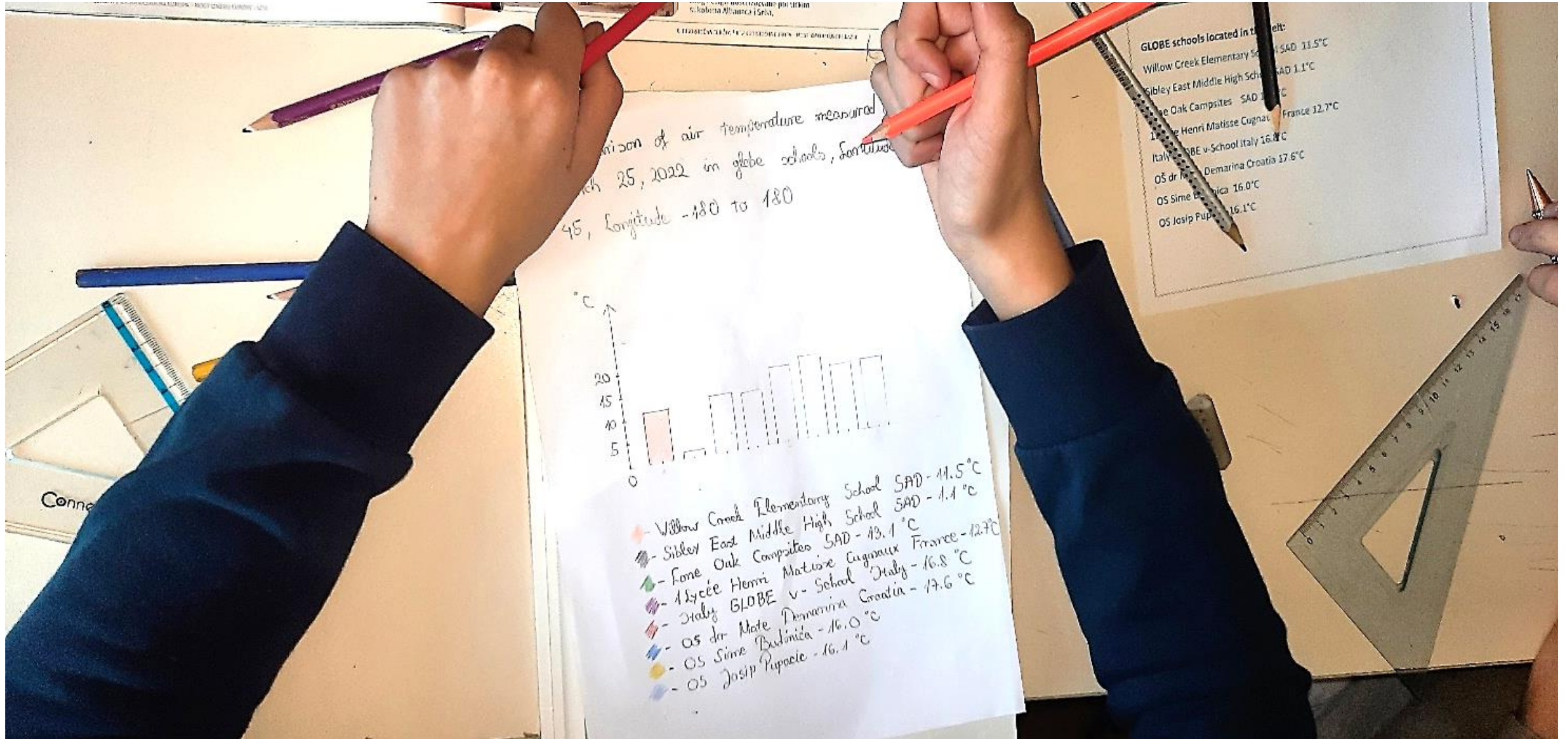
- 1 - Willow Creek Elementary School SAD - 11.5 °C
- 2 - Sibley East Middle High School SAD - 1.1 °C
- 3 - Lone Oak Compsters SAD - 13.1 °C
- 4 - Lycée Henri Matisse Cugnaux France - 12.7 °C
- 5 - Italy GLOBE v-School Italy - 16.8 °C
- 6 - OS dr Mate Demarina Croatia - 17.6 °C
- 7 - OS Sime Budinica - 16.0 °C
- 8 - OS Josip Pupačić - 16.1 °C

Comparison of air temperature measured on March 25, 2022, in GLOBE schools, Latitude 43 to 45, Longitude -180 to 180



1. Willow Creek Elementary School SAD 11.5 °C
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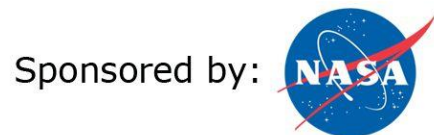
Hope you liked the activity!





The data literacy learning activity was prepared by GLOBE Program Europe and Eurasia Region Coordination Office, inspired by a real classroom activity coming from a GLOBE school.

Thanks to the teacher Zrinka Klarin, from Elementary School Sime Budinica, Zadar, Croatia for the inspiring idea, photos and materials.



Implemented by: The UCAR logo, featuring a stylized blue starburst symbol followed by the letters "UCAR" in a bold, sans-serif font.