



# CLIMATE DETECTIVES 2020 – 2021

## THE INFLUENCE OF A GROWING CITY ON THE CLIMATE

Heat Coolers  
Colegio Austriaco Mexicano

### RESEARCH QUESTION

What influence does uncontrolled urban growth have on the climate using the city of Querétaro as an example?

### SUMMARY OF PROJECT

With the intention of investigating more about the influence of the uncontrolled urban growth and the climate using the city of Querétaro as an example, two interviews with experts were conducted from questions that were prepared and had arisen during our investigation. In addition to finding answers to our questions, the scientists also shared solutions, which have been combined to positively impact the ground, climate and vegetation of our school. Further, we used satellite data and our own temperature measurements to prove the impact of surrounding vegetation on the temperature.

### MAIN RESULTS

An interview with scientist MS. Elizabeth Fuentes-Romero was arranged, in which we gathered important information about Querétaro's soils, showing how a serious deterioration is occurring underground. The cause: urbanization. This shows consequences of our actions, as well as the significance of our coming decisions to make. We noticed that the soil of Querétaro is intertwined with its exponential growth. With Dr. Bernal we learned about the relationship between the temperature of the water, the interaction between weather and soil, as well as soil with the climate. In this interview we learned about the health of the soil, its own features and the factors that benefit and/or harm these, along with the importance of the soil for plant growth. Moreover, we obtained information about climate change and its relationship with the climate, and although this has always existed, it scars the ground.

Our group is focusing on what influence the uncontrolled urban growth has on the climate using the city of Querétaro as an example. Searching for information and conducting two interviews with experts on the topic is how we achieved our conclusions and results. Querétaro is a city that has grown exponentially in the past 10 to 15 years. The city's population has increased rapidly, and so has the demand for resources, such as space, electricity and water. In conclusion, we've learned all about the changes that Querétaro has undergone and the importance of green areas in this kind of region.

#### Endemic flora



Palo blanco



Asclepias (Monarch butterfly caterpillar flora)



Palo bobo

Figure 2: Planting native trees in the area as well as small bushes to regulate the general temperature of the city.

### ACTIONS TO HELP LESSEN TO THE PROBLEM

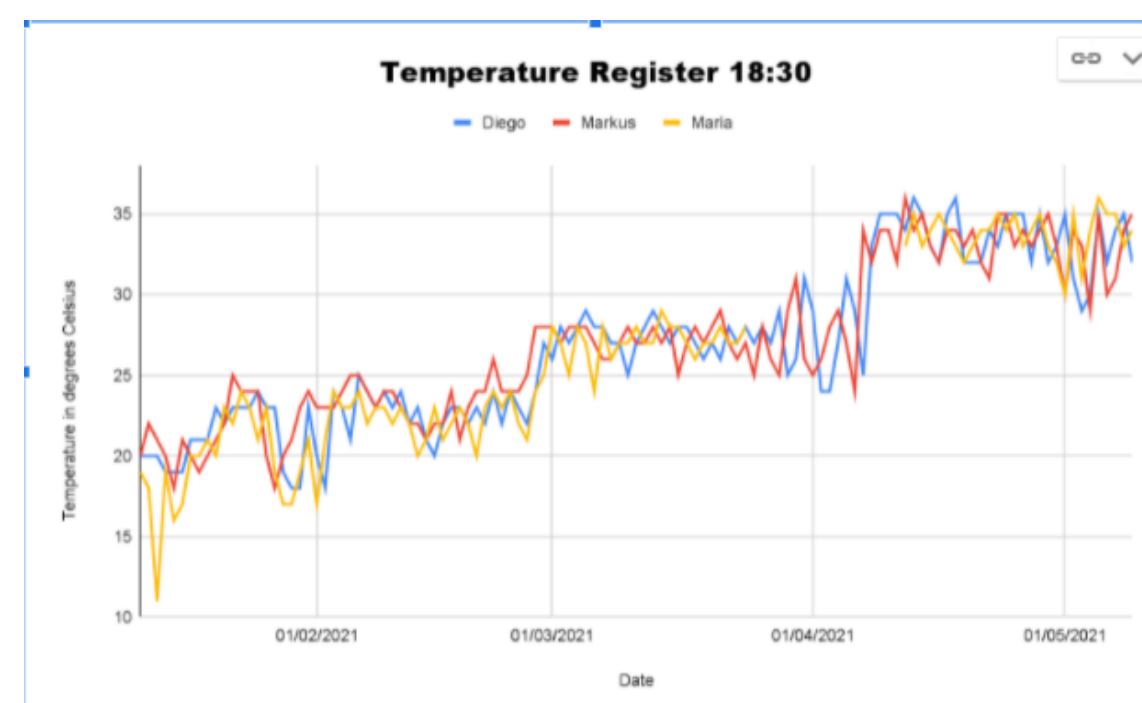


Figure 1: The line diagram is a collection of all three registers that were measured at 18:30 pm. It clearly shows a



Figure 3: We made a garden blueprint in collaboration with the school management to see where we can carry out our idea of planting endemic

Scientists we talked to shared some suggestions to make a difference. As a first option in our private as well as our scholarly environment, we can improve traffic problems with carpooling. Secondly, planting native trees as well as small bushes on our school grounds to regulate the temperature of our school area. Fortunately, there is an organization in Querétaro (FIRCO) that comes into agreements with schools and donates native plants that are used for reforestation and restoration of green areas.

However, we got in touch with the association named FIQMA that is supporting us. They recommended visiting their greenhouse to see which trees are the best to plant in the area where we're located. We made a garden blueprint in collaboration with the school management to see where we can carry out our idea of planting endemic flora. We are organizing activities to involve elementary and high school school students in the development of our solution to make a change. Additionally, we will be able to create awareness among young students of the problem we face, with the sole purpose of continuing to maintain and taking care of our green area, as well as inspiring the generations to come to make a change at home.