How does the soil temperature in the school prairie compare to the soil temperature in the turf grass and the playground?

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Our Team

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Why are Native Prairies Important?

- Prairies are important because you don’t have to mow as much.
- They decrease the amount of carbon dioxide in the air which is poisonous to humans and carbon warms our planet.
- They give habitats and food to animals.

Research Question & Hypothesis

How does the soil temperature in the school prairie compare to the soil temperature in the turf grass and the playground?

We think the soil temperature will be greater in the prairie than the grass because there are more plants that soak up the sunshine for food and energy which creates heat.

Research Abstract

Our team researched soil temperature. The data tells us that the playground has the highest temperature at 5 cm.
The prairie has the lowest temperature at 10cm. Prairies are ideal because they decrease the amount of carbon dioxide. Some solutions to benefit our environment is to plant more native plants and be a nice home for animals. If we plant more native prairie plants, then the soil will be cooler in the summer and warmer in the winter because plants give off heat. So, our prairies help regulate soil temperatures for our native plants. This is why we all need to plant more native prairies!

Variables

- **Dependent Variable:**

The soil temperature was tested. The temperature was measured using degrees Celsius.

Prairie

- **Independent Variable:**

The locations tested were the the school prairie, school playground, and turf grass.

Playground

Materials

- GLOBE cloud observation chart
- Red thermometer probe
- Soil can
- Clip boards
- Pencils
- Record sheet
- Sunny day

Step by Step Procedures:

1. Find a sunny spot in the prairie.
2. Take the red thermometer probe to find the soil temperature at 5 cm using the can to stop the probe at 5 cm.
3. Find the soil temperature at 10cm pushing the probe all the way down into the soil.
4. Repeat #2-3 times within a square ft.
5. Repeat steps #2-4 in the turf grass and playground.

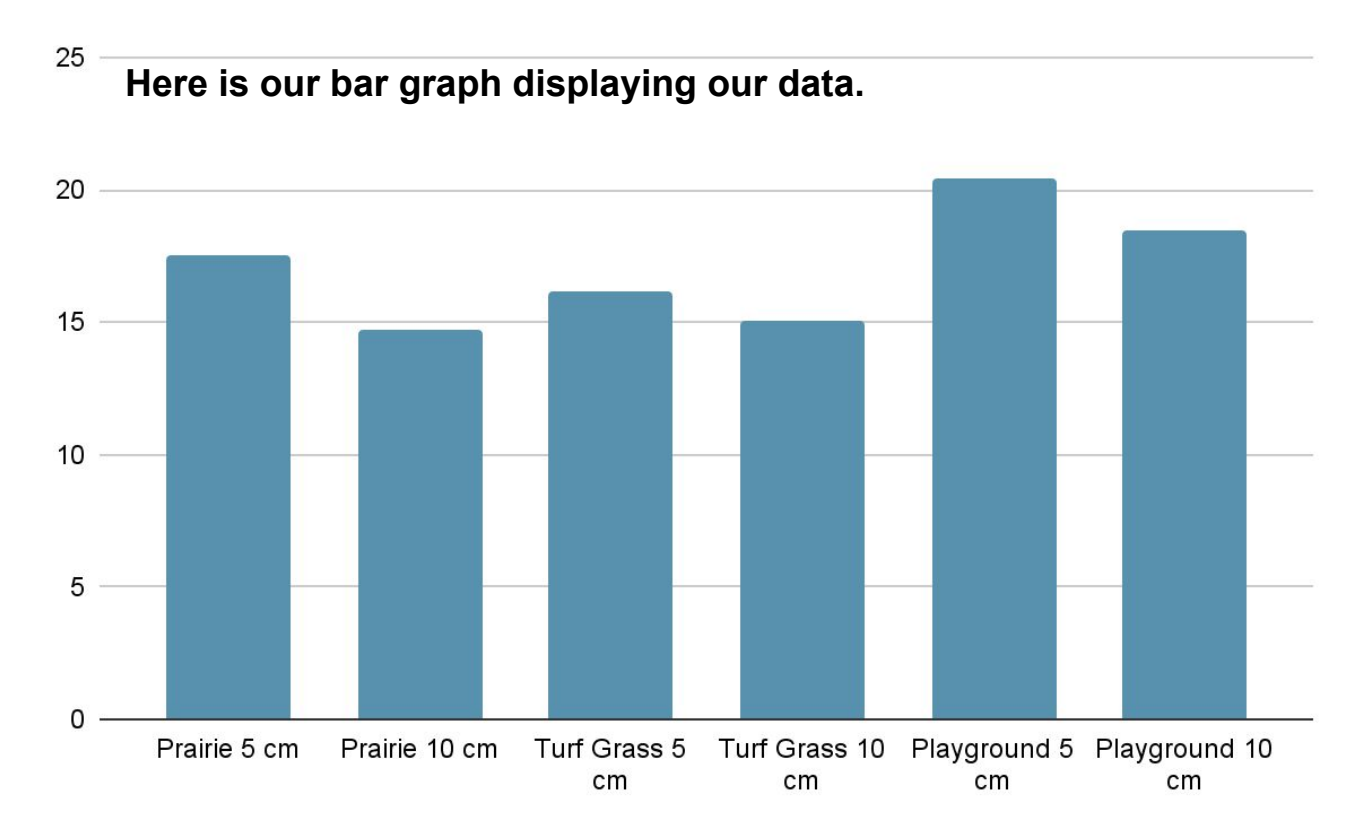
Weather Conditions on the Day of Data Collection

- Mostly sunny
- 72 degrees Fahrenheit
- Little to no wind
- No precipitation
- No snow

Data Table Soil Temperature in degrees Celcius

Soil depth	trials	Playground	Turf Grass	Prairie
5 cm deep	1	22.6	16.0	17.3
	2	18.3	15.9	17.9
	3	20.3	16.6	17.2
Average at 5 cm		**20.4**	**16.2**	**17.5**
10 cm deep	1	18.0	15.3	14.9
	2	18.3	15.1	14.6
	3	19.1	14.8	14.5
Average at 10 cm		**18.5**	**15.1**	**14.7**

Results: How does the soil temperature in the school prairie compare to the soil temperature in the turf grass and the playground?



Conclusions:

- The playground soil has the hottest temperatures at both 5 cm and 10 cm.
- The prairie had the coolest temperature at 10 cm deep.
- The turf grass had the coolest temperature at 5 cm.

Discussion: What does this mean?

- The playground is mostly gravel so it absorbs more heat, because there isn't much nutritious soil there. It is mostly gravel.
- The rocks absorb heat from the sun which makes it hotter on the top surface.
- We think the prairie had the coolest soil at 10 cm, because prairies keep the soil cool during the summer and warmer during the winter.
- This helps the plants grow better, because they need certain nutrients and temperatures.
- The prairie also has more animals, because there are more healthy plants.

Discussion: Possible Solutions!

- **You should plant more native plants or even a prairie for our native animals.**
- **They like the cooler soil in prairie during the summer and warmer fall days.**
- **The prairies would also be a nice habitat for animals.**
- **Replace some of your grass with some native plants today!**

Thank You!

- **A thank you to Mrs. DiSalle and Dr. Haney!**
- **Thank you for listening to our GLOBE presentation. Do you have any questions about our research?**

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