How does the surface temperature compare between the school prairie and the ga-ga ball pit?

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Our Team

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Why are Native Prairies Important?

Native Prairies are important because they provide homes for many different creatures and insects. They're also a place where only native plants grow so they are protected from invasive species.

Research Question & Hypothesis

RQ:

How does the surface temperature compare between the school prairie and the ga-ga ball pit?

Hypothesis:

If we test the surface temperature between the prairie and the ga-ga ball pit, then the ga-ga ball pit will be cooler because the mulch will absorb all the heat instead of the ground.

Variables

- Dependent Variable

Surface Temperature

- Independent Variable

Ga-ga Ball Pit

The Constants Are: Locations (Prairie and Ga-ga ball pit), same time of day, same tools.

Map of our Research Locations

Description of Locations:

A. Location 1 - Big Prairie

B. Location 2 - New Ga- ga Ball Pit

Materials

- Infrared thermometer
- iNaturalist

Step by Step Procedures:

1. Go to the school prairie and take out your infrared thermometer to take surface temperature.
2. Turn thermometer to degrees celsius.
3. Take 9 temperatures all in a row 5 steps away from each other.
4. Hold the thermometer out in front of you at shoulder height and point it at the ground.
5. Click the trigger to turn the thermometer on, clicking and releasing to take the measurement.
6. Record all the temperatures on the table.
7. To calculate the average temp. add up all the temperatures and divide by 9
8. Repeat 1-7 at the gaga ball pit.

Weather Conditions on the Day of Data Collection

Day One:

Big Prairie Air temp.
= 8 ℃
= 42 ℉

New ga-ga ball pit Air temp

= 8 ℃
= 44.1 ℉

Weather: Cloudy, Cold

Day Three:
Big Prairie-
Air Temp.= 16.5 ℃, 58.1 ℉
Weather-Partly Cloudy, Sunny
Gaga Ball Pit-
Air temp.= 13.5 ℃, 55.1 ℉
Weather- Partly Cloudy

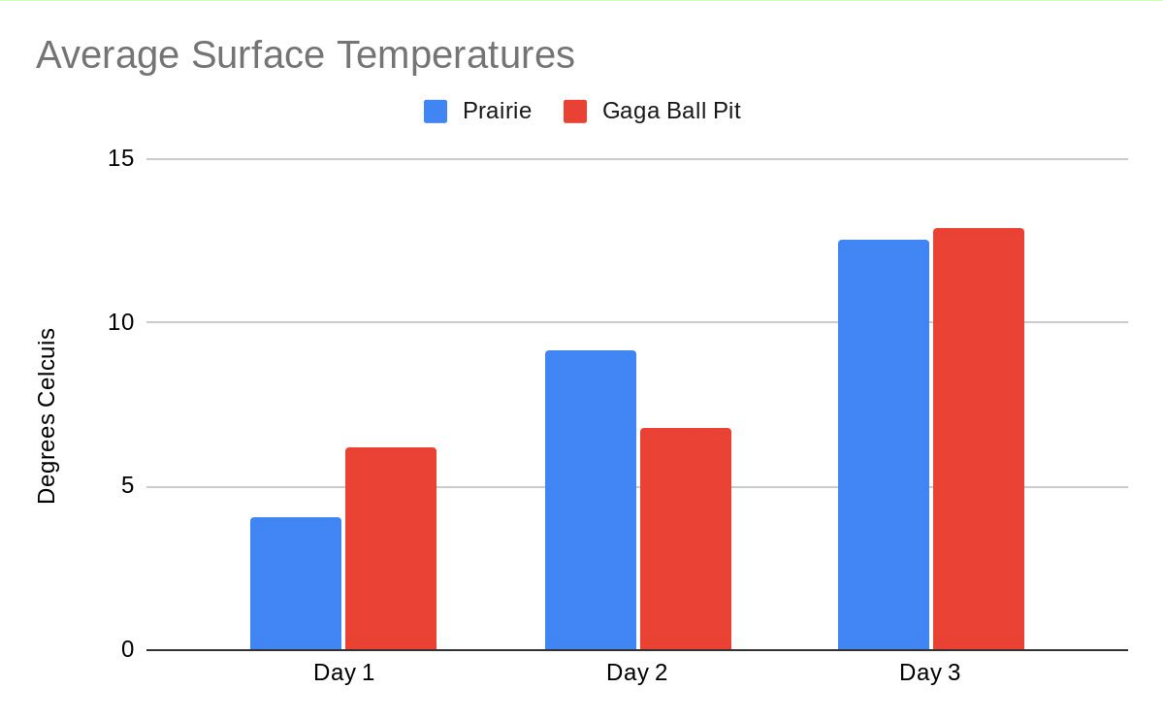
Day Two:
Big Prairie-
Air temp.= 14 ℃, 52 ℉
Weather- Windy and Cold
Ga-ga ball Pit-
Air temp.= 11.5 ℃, 52 ℉
Weather- Windy and Cold

Data - Our research question is: How does the surface temperature compare between the school prairie and the ga-ga ball pit?

Average Surface Temperature

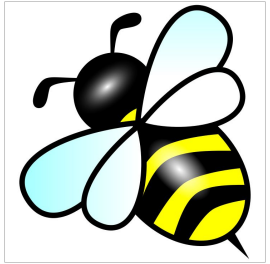
	Day 1	Day 2	Day 3
Prairie	4.06	9.16	12.55
Gaga Ball Pit	6.2	6.76	12.9

Results: As you can see, the surface temperature was cooler in the prairie except on day two because earlier that day it rained.



Conclusions:

I found that the surface temperature in the prairie is cooler unless if it was raining earlier that day because the average temperature of the prairie over three days were 4.06, 9.16, and 12.55 degrees celsius. On the other hand, the temperatures of the gaga ball pit were 6.2, 6.76, and 12.9 degrees celsius. As you can see, the gaga ball pit is hotter every day except the second one. This is because that day it was raining, which made it cooler than the prairie.



Discussion: What does this mean?

This means that rain matters! And the surface temperature can vary and differ depending on what day you take it on. For example, the prairie is usually cooler than the ga-ga ball pit, but if it's raining or has rained the ga-ga ball pit is cooler. All in all, rain matters and depending on if it's rained or not can affect the outcome.

Discussion: Possible solutions!

- Prairies can provide a place for many diverse plants which can support a wide range of birds, butterflies and native wildlife
- Prairies produce some of the worlds most important crops
- Prairies help stop water erosion with their root systems

Questions? Collaboration? Thank You.

- I would like to thank Mrs. Boros, the kind people at inaturalist
- Invite audience to ask questions and possible collaborate with your students.
- Give them your teacher contact info (or school) so they can reach out.

Thank You

Our Group

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