How does soil moisture compare between the school prairie and the school playground?

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Our Team

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Data Recorder
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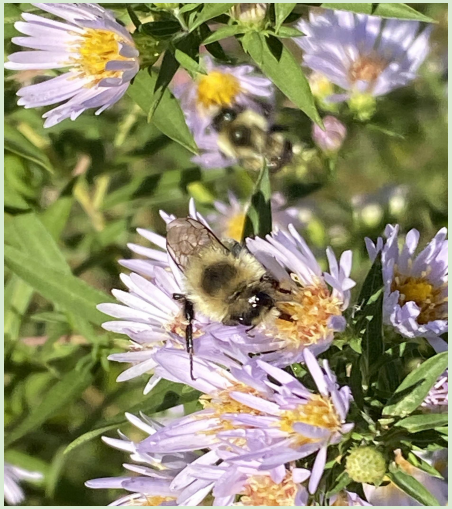
Why are Native Prairies Important?

Native prairies are important because they increase pollinator population they are good habits for animals. They have food for animals last they give a lot of beautiful to the world.



Our Dorr Elementary Prairie

Research Question & Hypothesis

RQ: How does soil moisture compare between the school prairie and the school playground?

Hypothesis: We think there will be more soil moisture in the prairie than the playground because the roots from the plants hold the water and there are more plants in the prairie than the playground.

Research Abstract

Our team researched how soil moisture compares between the school prairie and the playground. The data tells us that the prairie soil had more soil moisture than the playground. Prairies are good for our environment, because they decrease pollution. Also, they are a good habitat for animals. Some solutions to benefit our environment is to improve your property to have a variety of native plants to attract native pollinators.

Variables

- **Independent Variable:** The location was manipulated and tested. We tested the prairie and the playground.

Playground

- **Dependent Variable:** The soil moisture was tested. The water was measured in grams.

Prairie

Materials

- Trowel
- 2 soil cans
- Scale
- Science Inquiry Planning Guide
- Pencil
- Clipboard
- GLOBE cloud chart

Research Steps:

1. Locate sunny area in middle of the prairie.
2. Use trowel to dig soil.
3. Fill ½ can.
4. Remove sticks, critters and grass, etc.
5. Repeat steps 1-4 in playground.
6. Find mass in grams of both soil cans without the lid.
7. Record
8. Repeat daily until there is no more change in grams (when this happens, all the water is out of the soil).
9. Calculate how much water was in the soil using the first weight, last weight, and weight of the can.

Weather Conditions on the Day of Data Collection

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

Data Table: Comparing Soil Moisture in the Prairie to the Playground

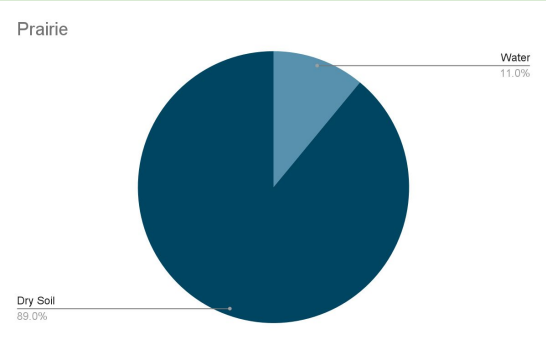
Day	Prairie soil moisture in grams	Playground solid moisture in grams
1	103.4	217.4
2	103.2	217.2
3	99.8	214.3
4	95.5	210.3
5	95.5	210.3
Difference of day 1 and day 5	**7.90 grams**	**7.09 grams**

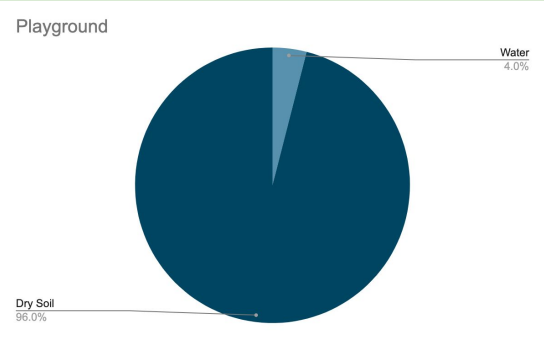
Soil Moisture Calculations:

[first weight (wet) - last weight (dry) divided by the first weight - the can weight]

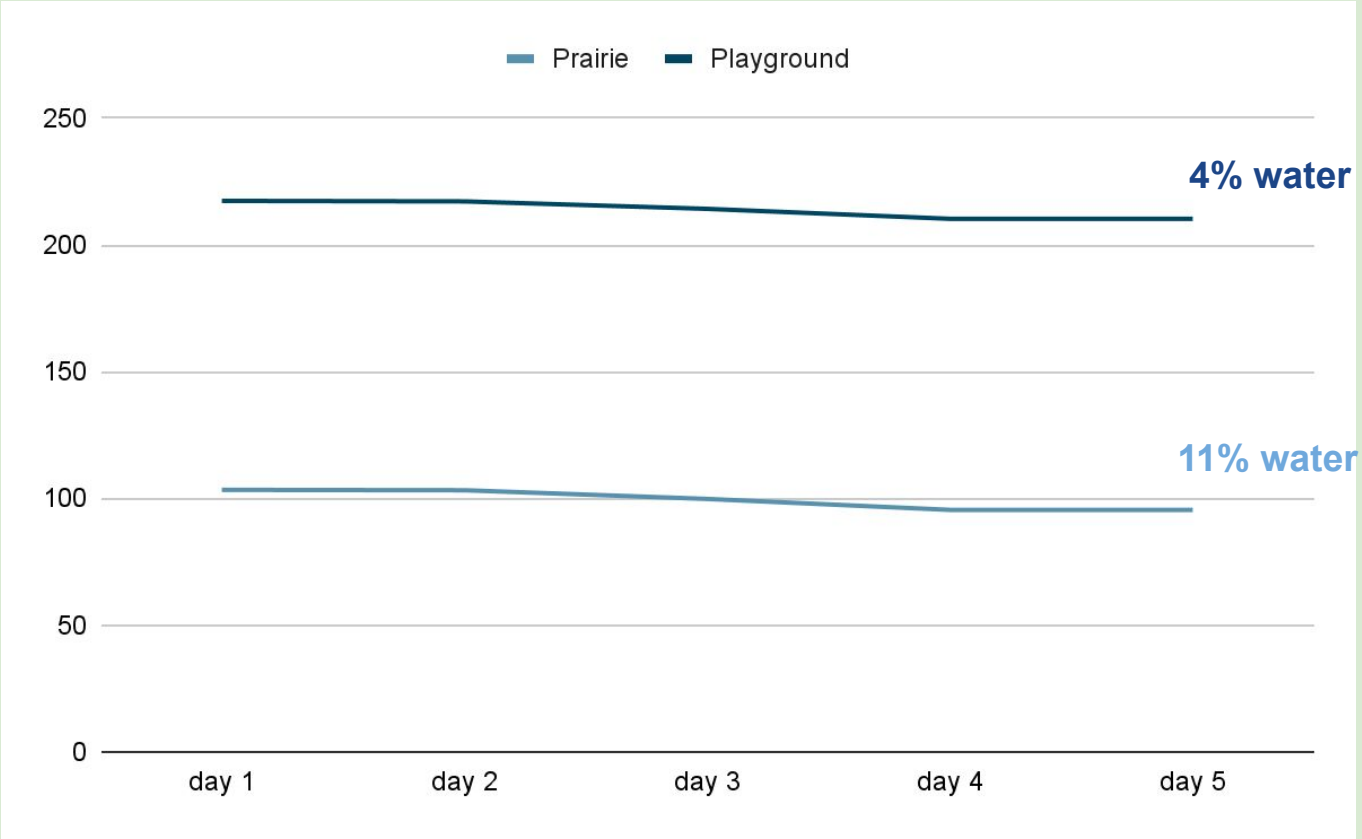
This will give us how many grams of water in the soil compared to grams of dry soil]

Prairie soil moisture 11 % water	**Playground solid moisture 4% water**
103.39 - 95.49 = 7.90 g	217.42 - 210.33 = 7.09 g
103.39 - 31.5 (can) = 71.89 g	217.42 - 31.5 (can) = 185.92
7.9/71.89 = **.11g** water to g dry soil or **11% water**	7.09/185.92 = **.04g** water to g dry soil or **4% water**





Results: How does soil moisture compare between the school prairie and the school playground?



Conclusions:

- The prairie had more soil moisture than the playground.
- The playground soil was mostly gravel.
- The most moisture was lost between the mass observation on day 2 and 3 because it was a weekend.
- The grams both stabilize after the 4th reading.

Discussion: What does this mean?

- The playground soil is mostly gravel, which doesn't hold as much water as topsoil.
- Plants hold moisture, and so there can be more plants and plant diversity in the prairie.

Discussion: Possible solutions!

- Planting more native plants.
- Use natural fertilizers, not chemicals.
- Conserve water.
- No littering or polluting.

Questions and Thank You!

Thank you Mrs. DiSalle and Dr.Hany for letting us do our prairie research and GLOBE presentation.

Does anyone have questions?

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