

Animals are Attracted to the Sun

Methods

We collected data for the paw prints by using an inkpad, animal cage, tape, a weight, animal food, and thin pieces of wood. We put the weight on top of the cage so the cage didn't go anywhere. We cut out a piece of an inkpad, stuck it on the wood, and then taped it inside the animal cage with a cup of dog food in the back. To find the amount of solar energy generated, we used the website "enlighten.enphaseenergy.com" every time. When setting up this experiment, we considered putting the cage where the most grass was so the animals would go in it because it was hidden and not in the open.



Does the increase of solar energy generated cause the amount of animal tracks to increase or decrease?

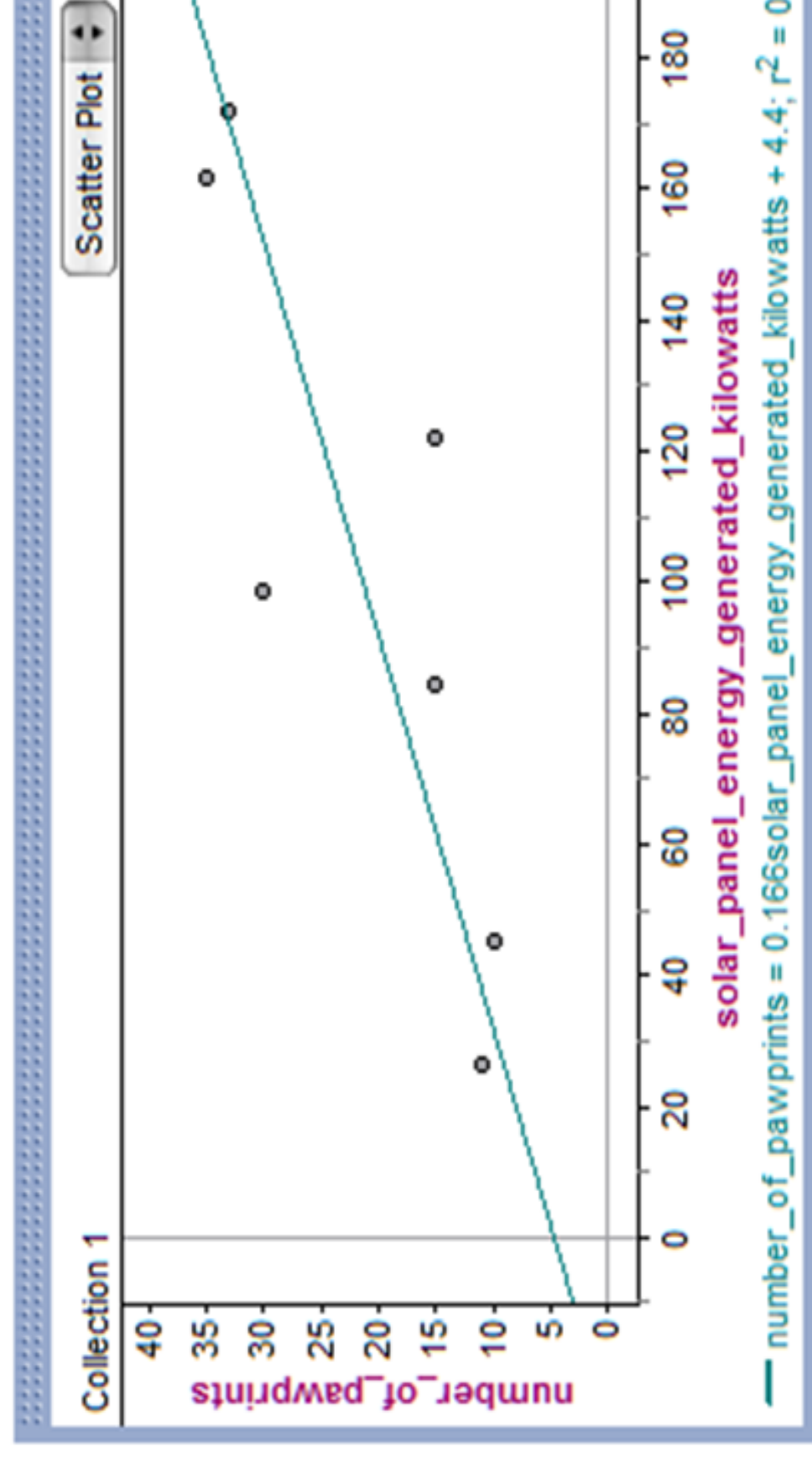
Conclusion

In conclusion, when there is more sun present there are more animals outside, which makes sense because animals prefer warmth. Our data can be used for predictions for future seasons because there is not as much sun and warmth in the winter so the animals hibernate, resulting in less tracks. This data is reproducible because we can conduct the same experiment again, and although the data would not be exact due to variables we can't control, it would follow the same general pattern.

Future Work

- The other class had less paw prints because they placed their cage under trees and in a different location
- That decreased the amount of animals that saw or were near their cage
- In the future, we can repeat this experiment to get more reliable data by changing some aspects:
 - o Using a larger cage or a tarp on the ground
 - o Increasing the amount of ink in the front
 - o Using a food with a stronger scent

Solar Energy Generated on the Amount of Animal Tracks Graph



Model Analysis

- We used this scratch program to show the relationship between the amount of solar energy generated and the amount of animal tracks. In our program we added a slider to the amount of solar energy generated (which is our independent variable) to show how the change in the energy would affect the amount of animal tracks we collected.
 - Line of Best Fit: 0.166(amount of solar energy generated) +4.4. . As we moved the slider up, the amount of the solar energy generated would increase, which actually caused the amount of animal tracks to increase as well, just like the graph shows.
 - This isn't the most appropriate model, for during seasons there are ups and downs, not just a constant increase.

Data Analysis

- This graph shows that as the energy generated from the solar panels increase, the amount of animal tracks will increase.
- The sunlight should attract animals, just like the graph shows because sunlight is essential for organisms to live.
- Although the graph makes sense, there is a more appropriate way to graph our data. The area of sunlight is never just a constant increase, as the points on the graph shows. Our data represents a scatter plot rather than just a straight line.
- Another graph we can use is called a sine/cosine wave graph. This graph will show that the relationship between solar energy generated and the amount of animal tracks will go up and down.

