

Digital Observation Technology Skills (DOTS)

Digging Deeper with Data: A Case Study

Digging Deeper with Data (DDD) was a semester long project that allowed students to collect data on wind speed, air temperature, and surface temperatures of different objects in order to answer essential questions about our natural world. Addressing STEM initiatives and using common core standards in math, language arts, science, and reading, students participated in eight different lessons focused in climatology, microbiology, data analysis, and thermal inquiry. Students presented their findings to their peers bi-weekly which showcased their academic achievement, data processing and inquiry development skills.

“The students spent more quality time observing leading to more purposeful writing.” Mary Roberts, Teacher, Portage Elementary



Students use a Kestrel hand held weather station to take atmospheric measurements.

DDD was the highlight of the year for many participating classes. This experience allowed students to thrive through hands-on learning activities and think critically about the environment in a manner that promotes civic engagement amongst peers. The culminating experience was a data summit at Upham Woods attended by four different 4th grade classes, from Portage and Lake Delton Elementary Schools. At this summit, they presented their final data and patterns to each other, allowing the students to compare weather patterns within the state while reflecting on how technology can help us understand the natural world.



Students familiarize themselves with the capacities of the tools indoors before taking their curiosity outside. Tools and support may be available for your classroom this year!

January



Research naturalists will help introduce the tools used in DDD and teach climate science, weather, data management, and other DDD related concepts to you and your class.

February



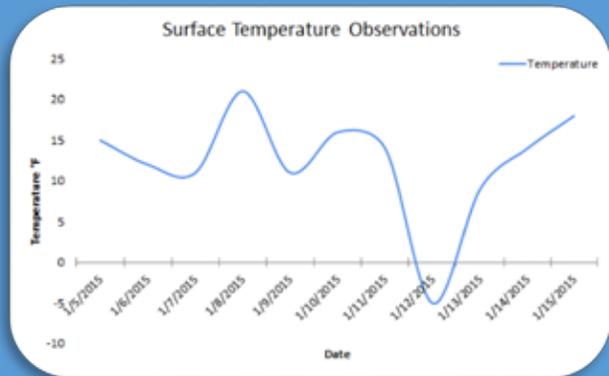
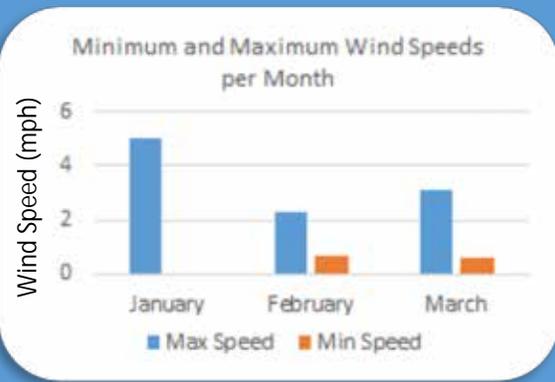
Students keep track of their daily observations by creating bar graphs of wind speed and air temperature. A large part of DDD is having students interpret their own results and share their results with others.

April



For more information, contact Justin Hougham,
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Fourth grade students took daily atmospheric measurements in their recess area over the course of the semester. Students input and analyze their own data and share their findings with other students.

In addition to the visits made by Research Naturalists, the teachers continued to run their own programming by taking daily weather measurements and conducting weekly journaling of weather patterns. DDD also provided an example of affordable deployment of

technology tools: **the total cost of the entire kit was a mere \$150.** The study was longitudinal in design, focusing on data collection from set locations near their classroom over the spring semester. Although the DOTS kits have been available for lending by other teachers, 4-H educators, Extension employees, and informal educators throughout the state, there had not been a system by which to have a class use the kits in a longitudinal study over the course of an entire semester until 2015. This experience proved that long-term lending of the kits to a classroom is feasible and perhaps a preferred future model for the DOTS program.

“Students understood negative and positive numbers much more completely due to thermometer work.”

Amy Luebke, Teacher, Lake Delton Elementary

“The students were able to see and make connections from educational readings to real life situations (Aha moments).”

Amy Luebke, Teacher, Lake Delton Elementary

“Scientific thinking allowed them to have better understanding and processing due to practical data.”

Mary Roberts, Teacher, Portage Elementary



“Teachers noticed after the project was over, the students spent more time thinking and processing information. The students’ observational skills increased because of the project.”



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