Inspiration® SOFTWARE, INC
The Leader in Visual Thinking and Learning™

CASE STUDY

Groves Academy
St. Louis Park, Minn.

Minnesota teacher applies data literacy to project-based science courses

At Groves Academy in St. Louis Park, Minn., juniors and seniors in Will Bohrnsen's project-based science classes receive hands-on experience in data collection and analysis. Bohrnsen's students—who face various learning difficulties—often struggle with the abilities to manage projects and organize data to make meaningful analyses. Recipient of the Inspired Teacher Scholarship Best Project Award for InspireData™, Bohrnsen was thrilled to discover InspireData last fall and immediately introduced it to his students. With InspireData, his students learned to organize their data into tables and explore the integrated plots to solve problems and draw conclusions.

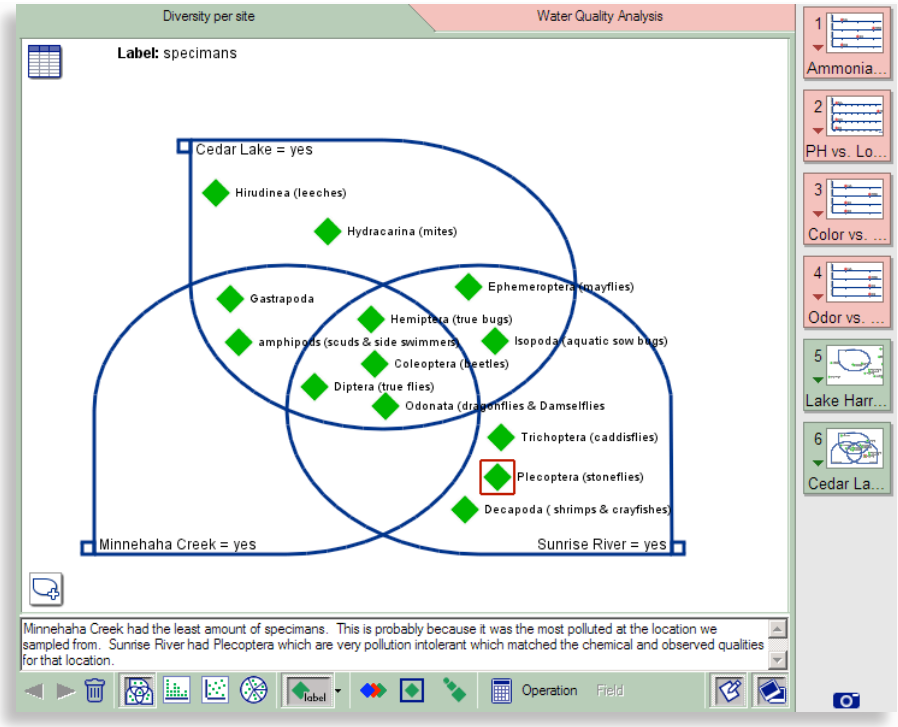
InspireData helps students organize and analyze collected data

Bohrnsen's students completed several projects last fall that required the collection of detailed observations and measurements, followed by careful analysis of the gathered data. In one project, students collected water samples from several nearby lakes and streams to compare water quality and discover how the water quality affected invertebrate life. Students worked with scientists from the local Minnehaha Creek Watershed District to learn the correct way to collect water samples. Standard chemistry kits were employed by students to test various attributes of water quality. Students used keys and guides to identify the aquatic invertebrates found in each sample.

A second group of students chose to compare diversity among invertebrates found in the leaf litter of deciduous and evergreen forests. Students visited local parks and worked with state park rangers to gather invertebrate samples using a complicated extraction device. After dissecting the samples, students sorted by class and order.

Once data collection was complete, both groups of students entered their data into tables in InspireData and switched to Plot View to analyze the results. Stack and Venn plots were used to compare and interpret the data. "The kids could immediately see correlations that were impossible to visualize prior to using InspireData," says Bohrnsen. "By using InspireData, both groups of students were able to quickly and intuitively set up data charts, input factors and create visual plots that were easy to manipulate, evaluate and reproduce."

Students used the tables and plots from InspireData to create posters representing the results of their study. The posters were displayed in the school, an area nature center and visitor centers for the city and state parks divisions.



Will Bohrnsen's high school science students used InspireData™ to investigate correlations between water quality and diversity of invertebrate life.

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Students investigate timed experiments with InspireData's Time Series animation

Bohrnsen's students are currently in the midst of a project that uses InspireData's Time Series features to track several timed experiments. One group of students is creating a classic mouse maze to compare maze completion times of a control group of mice to an experimental group. Students will test the experimental group to determine if negative noise reinforcement will lead the mice more quickly through the maze. Each time an experimental mouse makes a wrong turn, students will make loud noises until the mouse chooses the correct path.

A second group of students is building a fish maze, using food to train fish to swim through a series of plates with colored holes in them. Once fish can complete the maze on their own, students will move the plates around and test the time it takes for the fish to find their way through the maze using only the colored holes. Students will enter results into InspireData using tables set up as series and analyze the data in Plot View with InspireData's Time Series animation.

Bohrnsen plans to use InspireData throughout his science classes and hopes to introduce the software to other faculty for use across the curriculum. "Graphically, visually and intuitively, InspireData makes sense for my students," says Bohrnsen. "It is easy for students to get their data organized and to transfer between different ways of viewing information."

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