

LEAP INTO LEARNING

• STUDENTS CONSTRUCT FROG POND AS PART OF COMMUNITY PROJECT

Platte-Geddes 2nd Grade students and their teachers, Sandy DuFrain and Amy Rolland, set off on quite an adventure with their students at the start of the school year by studying frogs and their habitats all over the world.

DuFrain and Rolland decided they wanted to implement problem based learning into their classrooms after attending a teacher professional development workshop with the South Dakota Innovation Lab where they were able to lay out the plan for the kids to ultimately make a difference in their community.

The teachers put the groundwork for the project in place, but then allowed their students to guide the project by doing research and collecting community survey data. They also enlisted the help of industry experts that included a local landscape garden center owner, a herpetologist from USD, a research scientist from Sanford, plus many other parents and community members.

“I thought it was neat how we collaborated with the high school students in Computers, Geography, Science, Language Arts, and Art. By using the knowledge of the high school students, we were able to give our students a 1:5 teacher/student ratio,” DuFrain said.

“It was an amazing teaching and learning experience that those kids will never forget.”

Students used their mapping skills and creativity to form salt maps to demonstrate their understanding of continents, oceans, and climate.

The kids then narrowed their focus to just frogs native to South Dakota. Dr. Drew from USD offered the class great advice about hatching frogs from eggs and successful classroom habitats. He also offered suggestions for the ultimate release of the frogs into the habitat that would be established for the amphibians in the park in Geddes, SD.

The project was not met without some barriers.

After a long weekend, one group of kids came back to the class-



room to find all of their frogs had died. The group persevered and went right to work, discerning the living conditions of the surviving frogs, the physical characteristics of healthy frogs and possible causes of death.

The kids used their problem solving skills to design solutions around all of the factors they discovered and went to work growing healthier frogs.

Studying the life cycle, habitat and body systems of frogs was not the only part of this deep learning experience.

Students also had to work closely with a local landscaper to design an outdoor habitat that would not only be a healthy host for the frogs, but also contribute to the beautification efforts of the city park. The kids learned all about fountains and water features, perennial and annual plants, as well as the funding required to develop the pond.

The group planned fundraisers, enlisted the help of their families and community members in getting the work done and even made a plan to do other work in the park.

At the end of the 2013-2014 school year, the kids chose to do 3 work days at the park in Geddes, rather than take their usual field trip. Participants painted picnic tables, picked up trash and, of course, installed a pond, complete with perennial plants, a fountain and welcoming pool for the frogs.

The project culminated with a celebration in the park for the release of the frogs.

People clapped and cheered as the frogs were introduced to their new home – a calm and welcoming place for all to enjoy – all made possible by the hard work and big ideas of a group of 2nd grade students and their innovative teachers.

“It was a challenge, but we were able to tie in all the standards into this project,” Rolland said. “For instance we talked about other cultures and created a frog origami. With these hands on activities, the students were unbelievably engaged.”



STUDENTS STUDY SCHOOL LUNCH

• PROJECT EXAMINES CONTENTS OF A HEALTHY PLATE

The school lunch program has been a hot topic for many years as new guidelines for the lunch program has led to debate on the amount of food kids need and where that food lies in the design of a healthy plate.

The 7th grade students at Platte-Geddes School decided to stop complaining and start doing something about it.

P-G Science Teacher Darren DeNeui first learned about aligning standards through problem based learning design through professional development with the South Dakota Innovation Lab.

This is just one of many problems his students have tackled while applying the knowledge they are gaining in solving real world problems.

Students went to work developing a plan to tackle the tough questions about school lunch programs, like portion size, food quality, caloric values, food miles, local opportunities and financial solvency of their school lunch program.

“I personally learned that we waste so much food and that the school pays over \$80,000 a year on school lunch,” P-G 7th Grade Student Molly Muilenburg said. “On average each student wastes 67 pounds from school lunch a year.”

The class worked in teams to discover what is needed for a healthy diet and also the origins of the food served during their school lunch time. They collaborated with the lunch staff at their school and also contacted other schools to review the guidelines and food sources for their programs. Surveys of the student body were conducted and the 7th graders used the data to drive the development of several new menu options for the lunch program at Platte-Geddes.



“I have learned that a lot of work goes into planning our school lunches, more than just labor,” Platte Geddes 7th Grade Student Camryn Boltjes said. “I learned that the head cook has to plan all the meals, figure calories, prices, nutrition needs, and portion size. I have a whole new respect for the cooks.”

As the 7th grade life science students dug deeper into the caloric intake of students at different ages, they enlisted the help of a dietician and used research data to determine the calories of each item on a school lunch tray.

They found out interesting facts about calorie calculations and federal guidelines that limit food sources.

The kids dug deeper into how our bodies process calories as it relates to the epidemic of obesity in our young people. They studied exercise habits and how long it would take to burn off the calories taken in during that lunch period.

Students also studied the impact that a healthy diet has on learning success.

The junior high students started with a problem, took the concerns they had about a topic relevant to them and designed their learning around that issue. In the end, the class was able to share, not only what they had learned throughout the project, but also make suggestions that sparked a deeper conversation among the school policy makers about the effectiveness and efficiency of the school’s food service program.

“It was cool how Kristi Noem called us and how she was interested in our project,” P-G 7th Grade Student Sawyer DeGroot. “She thought we were doing great work.”



PROJECT: PLAYGROUND

• STUDENTS DESIGN DREAM PLAYGROUND

Cedar Grove Colony students in the Platte-Geddes School District have dreamed about a new playground at their colony school, located 11 miles north of Platte, for years.

Their teacher Donyelle Petersen wanted her classroom of 2nd-4th grade students to be the catalysts of making that dream come true.

Petersen started the design of the project at a summer professional development workshop with the South Dakota Innovation Lab and then took the plan to her students in the fall. The kids tackled the problem with eager determination.

First, they started researching safe playgrounds and their features. They learned about the federal and state mandates that regulate school playgrounds and even involved their entire school in determining the most important equipment that should be a part of their playground based on all of their suggestions.

The kids knew they would need to convince their parents and the colony leaders their playground would be a safe and fun place to play, but they also knew the cost of new playground would be a big concern, as well.

They researched the equipment and the supplies needed to create the structure, took into account the skills of their parents and other family members on the colony and how those skills could be utilized to keep the costs low. The financial sheet then helped with

the final design of the playground.

The kids made a scaled down model of the playground they would like to build and prepared their statements of support for the design.



Students gave a presentation not just to their teacher, but for an audience of their parents and colony leaders. They gave all the financial, safety and equipment information to the adults and waited for their response.

The leaders of the Hutterite colony liked their plan and had just one question for the students: They wanted them to research further to find out if there was any used equipment available from other schools and communities that they might not be using that would help keep the cost down. Colony craftsmen would like to take the used equipment and pair it with their experts to up-cycle it for their playground.

Like all great problem solvers, the kids took additional task in stride. Students saw it as a challenge and are actively searching for equipment that they might be able to incorporate into their plan.

Big problems require more than one solution—an understanding that goes beyond the typical classroom. These kids are not a part of a “typical” classroom and they are gaining skills that will prepare them to be better students of the future and problem solvers for their colony.