

**Sonoma Valley Unified School District
Exploratorium Presentation
March 13, 2012**

DEMOGRAPHIC INFORMATION:

Cohort Name	Number Participating	Number of Years	Number of Elementary Schools
EV Cohort	20	4	1
Cohort 1	39	1	4

FUNDING SOURCES:

Original funding was through the Vadasz Family Foundation. Their generosity laid the groundwork for where we are currently. The Vadasz Foundation and the Sonoma Valley Education Foundation continue to support the project locally. In 2010 the project received national attention and was one of 49 projects funded by the Investing in Innovation grants through the U.S Department of Education. The collaboration of local and national funding is an innovation in itself and we are the fortunate beneficiaries of this project.

LESSONS:

Grade	Lessons	Additional Lessons
Kinder and First	Sink and Float Snails and animal Life	
Second and Third	Magnets Lady Bugs and Life Cycles	Rockets, Reflecting Light, Color Light, Shadows, Magnets (developed by EV teachers)
Fourth and Fifth	Stream Tables and Geology Electromagnets	

Exploration	Investigation	Sharing Understanding	Conclusion
Access prior experience Process Skill Development: Observing, Raising questions Provides a context for descriptive talking, writing and drawing	Engage with a focus question Plan and do investigations Collect and record evidence Interpret evidence/draw conclusions Process skill development: Planning/doing investigations, Predicting, Interpreting Provides a context for descriptive and analytical talking, writing and drawing	Discuss and present investigation results Process skill development: Interpreting, Communicating Provides a context for descriptive and analytical talking, writing and drawing	Read a book (to reinforce or extend ideas) Teacher synthesis of science ideas Revisit questions from Explorations and Investigations

Exploratorium Lessons

The unit's structure is based on four interlocking phases: Exploration, Investigation, Sharing Understanding and Conclusion. During the **Exploration phase**, the objectives are for students to access their prior knowledge, make observations of phenomena, and raise questions. In the **Investigation phase**, students engage with questions and search for answers through planning and carrying out investigations, collecting and recording evidence, and drawing conclusions based on the evidence. In the **Sharing Understanding phase**, students communicate their findings and discuss how their investigations answered questions. The Sharing Understanding phase helps students to develop understanding of each investigation, so it occurs throughout the unit. Finally, the **Conclusion phase** helps students to synthesize their experiences and reflect on their learning.

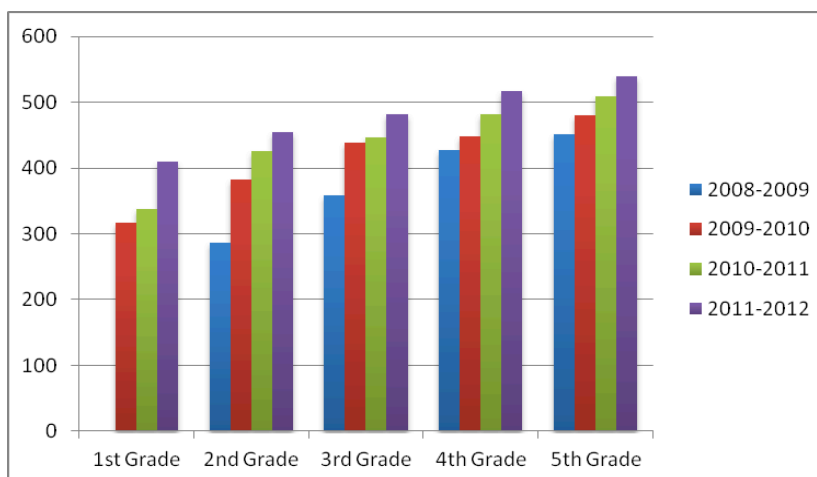
Currently, each grade level has two lessons for the year developed by the Exploratorium. The third grade at EV as developed additional units. Planning is in the beginning stages for additional lessons. We are working on developing a leadership group that will help guide the future of the project.

EVALUATION OF PROGRAM:

Recently, we met with the evaluation team from Inverness Research and The Research Group at the Lawrence Hall of Science. The team conducted observations, surveys and focus groups to help us all understand the project's success and challenges. There is a general sense of enthusiasm and excitement among administrators, staff and students. We are attempting to better understand the integration of science and ELD as it supports language development. A report of the findings will be available soon.

EVALUATION OF STUDENTS:

The formal summative evaluation of students takes place through California English Language Development Test and California Standards Test in 5th and 8th grades. Below is a graph representing El Verano's CELDT scale scores for the last four years. There is a steady increase in the English Language Learners scale scores since the inception of the project.



This chart shows the scale score increase by grade level on the CELDT from 2008-2012 school years. No data for 1st grade in 2008.

School Year	Percent Proficient or Advanced on the CST in Science
2007-2008	37%
2008-2009	56%
2009-2010	47%
2010-2011	59%

Percentage of Students who scored Proficient or Advanced on the CST in Science for El Verano 5th Grade Students.

The formative assessment that teachers rely on for their day to day evaluations of learning and adjustments of instruction, are developed through science notebooks and science talk. Both of these constructs have been introduced to teachers this year as a way of developing language and gaining a deeper understanding of student learning. One teacher has taken this concept one step further and developed science chats. This is a way for her to collect data in a smaller setting by allowing her to hear all her students speak about the topic.

INNOVATIONS:

There are several innovations that are taking place as a result of the project. We have noticed a willingness to try new things among many teachers. In addition, many teachers have adopted an inquiry approach to other subject areas. For example, one teacher is collecting data with her class on the students' day to day behavior and the factors that influence their behavior. Another innovation that has occurred is the development of assessments for a pre and post look at the project. Teachers have created a science experiments for each grade level to participate in and write about. We are collecting the information and analyzing student growth in science concepts and language based their writing. There is a general excitement about the work. Teachers are creating, developing and sharing ideas with one another. The innovation is in teachers and students taking on inquiry as a way of thinking.