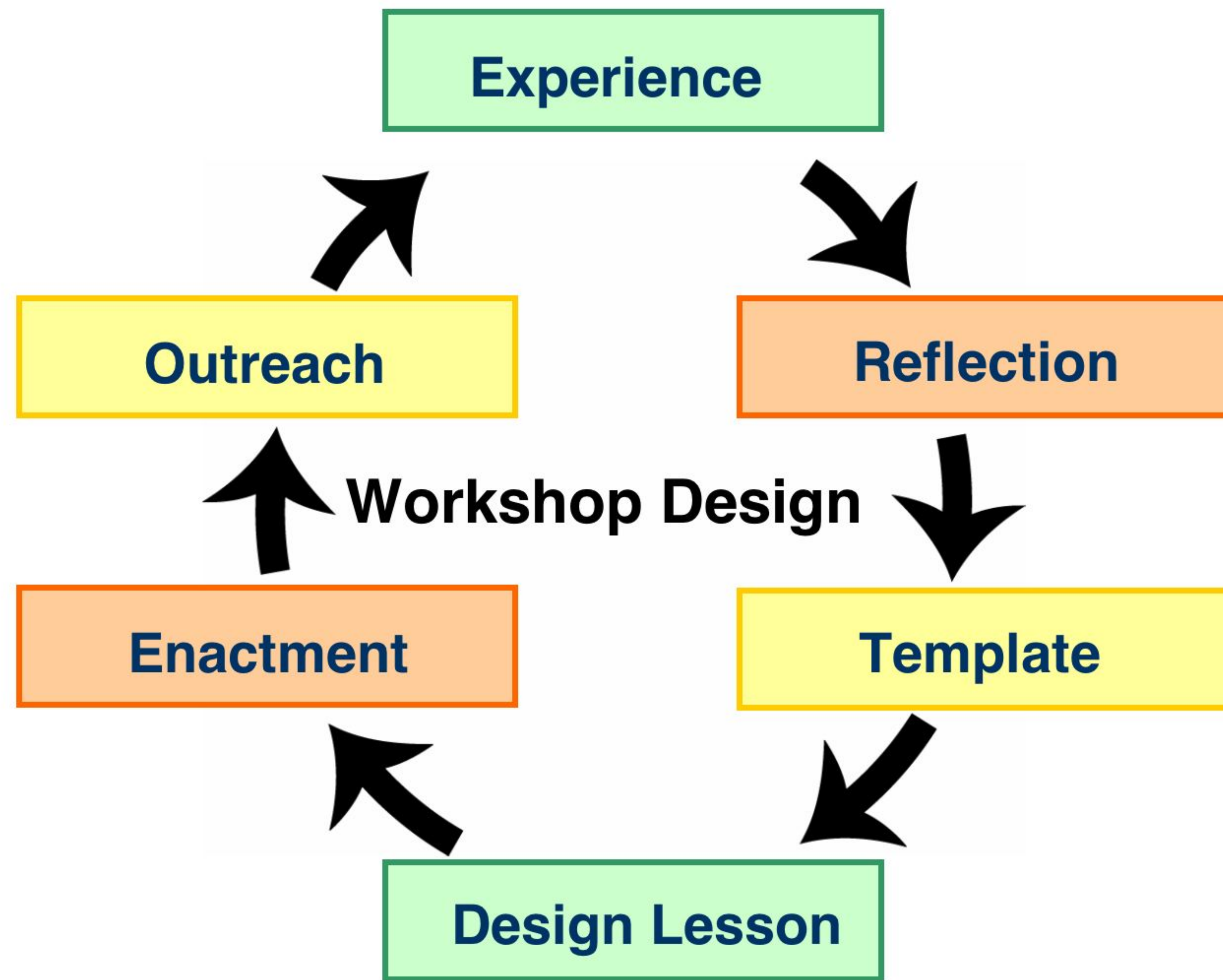


Experience: Scientist to Teacher

ERESE Workshop
Scripps Institution of Oceanography
14 Middle and High School Teachers
from across country

Scientist models the inquiry process using digital library materials focused on Plate Tectonics

Teachers engaged in inquiry experience.



Reflection

The reflective practice process is facilitated by a power profile rubric adapted from the National Science Education Standards which reflects the degree of responsibility held by the teacher and the students.

ELEMENT	PROGRAM INTENTION	
	Teacher	Student
ORIENTATION	➔	➔
FIELD WORK	➔	➔
DEBRIEFING	➔	➔
EXPERIMENTATION	➔	➔
PRESENTATION	➔	➔

Template

Teachers model for inquiry extracted from their experience through reflective practice

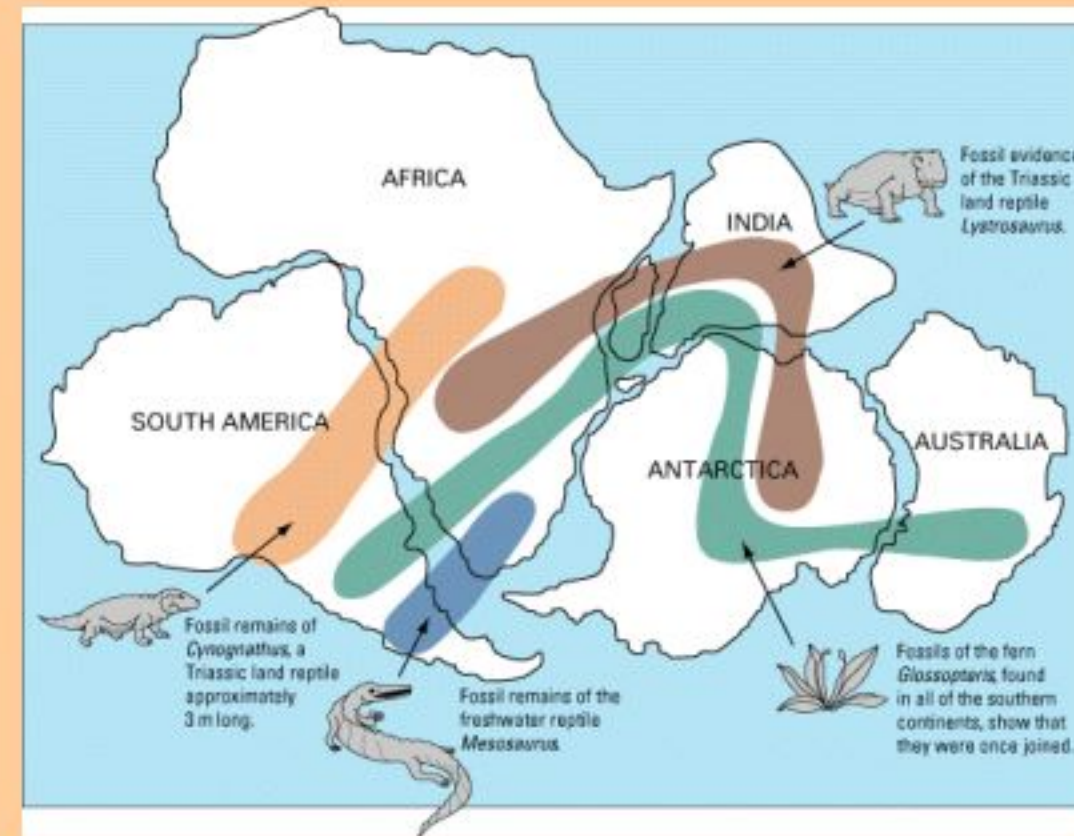
Teachers Log	
ERESE Teachers Log	Back to index
Lesson title	
Intent of the lesson	
Ed. standards	Applicable level and state and national standards
Orientation	Introduce available tools and concepts so that students feel safe taking intellectual risks
Intent	
Procedure	Should include a description of any activities or lessons you include to get the students focused on the skills they will use to experience the provocative phenomenon
Type of Evidence	
Teacher profile	
Student profile	
Fieldwork	Give students experience to foster their interest and ownership; provoke students to explore, observe and generate their own questions about the phenomenon
Intent	
Procedure	Should include a detailed instructions, identify the provocative phenomenon and a list of the anticipated observations

Modeling and Enactment of Inquiry-Based Plate Tectonic Lessons

Enactment: Teacher to Students

The Mystery of the Pangea Puzzle

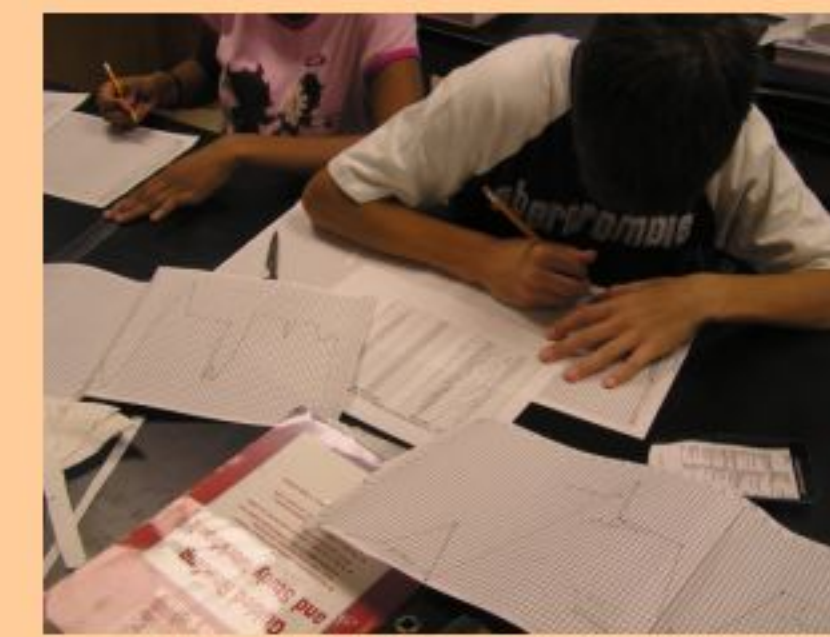
Nancy Dow
Mosley High School
Lynn Haven, Florida



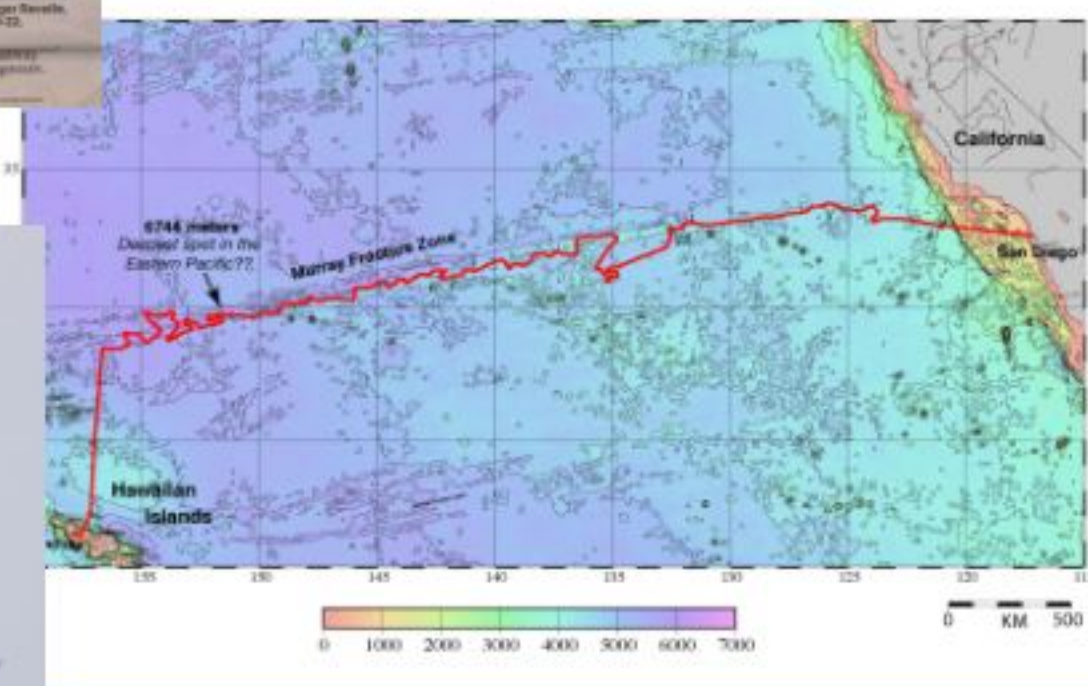
Mapping the Ocean Floor

Jerrie Reining
Sequoyah Middle School
DeKalb County School System
Metropolitan Atlanta, Georgia

Jerrie Reining participated on a 10-day research cruise from Honolulu to San Diego onboard the R/V Revelle, uploading marine geophysical data, journal entries and pictures daily. County middle schools followed inquiry lesson from shore.



KRUS06RR - R/V Roger Revelle, October 10-22, 2004



Outreach: ERESE to Community

- Teachers convening workshops with local teachers.
- Presentation of inquiry lessons at State Meetings
 - Georgia Science Teachers Association, February 2005
- Inquiry model used in portfolio for National Board Certification
- Presentation of inquiry lesson at NSF's LETR Network meeting (Long Term Ecological Research), November 2004
- ERESE Workshop, July 2005



ERESE Workshop, Onboard R/V Gordon Sproul

Investigators and Initial Award

PI: Stephen Miller, Scripps Institution of Oceanography (SIO)
Co-PI's: Hubert Staudigel (SIO)
John Helly, San Diego Supercomputer Center (SDSC)
Brian Schottlaender, University Librarian, UCSD

NSDL 03-33705, Mobilizing Enduring NSDL Resources in Plate Tectonics Research for Earth Science Education.

Major Activity A two-week summer workshop at the Scripps Institution of Oceanography, learning how to create Enduring Resources for Earth Science Education (ERESE). Open to middle and high school teachers who teach Earth science concepts.

Project Approach Collaboration among working scientists, graduate students and a lead teacher. The workshop was designed so teachers could engage in scientific inquiry using digital library materials, reflect on the pedagogy modeled by a lead scientist, and subsequently create a lesson for their students consistent with this inquiry model. Teachers' lessons are posted at EarthRef.org and are currently being field tested.

Results 15 inquiry lessons on plate tectonics, 9 high school and 6 middle school level in Year 1. Topics include:

- Scientific Literacy and Plate Tectonics
- Heat Flow and Plate Tectonics
- Interaction of the North American Plate and the Pacific Plate
- Plate Tectonics and Landforms
- The Model of Pangea
- Continental Drift Theory
- Island Chains and Seamounts
- The Shape of the Ocean Floor
- Magnetic Anomalies and Plate Movement.

Benefits to NSDL Mobilizing high quality, primary source information for educators, critical for fostering learning experiences with data literacy and scientific judgment.

Building experience base during summer workshop as teachers, researchers and graduate students work side-by-side, exploring content and creating learning modules.

Systematic data-rich collection of digital earth science resources for the NSDL, meaningful in the context of national standards and consistent with local and state authorities.

Next steps and opportunities for collaboration Teachers encouraged to participate in expeditions, make presentations at conferences, and share experiences with teachers in their local communities regarding use of digital library, lessons and student work samples.

Website <http://gdc.ucsd.edu/erese/> and <http://www.earthref.org>