

Laura E. Decker
Teacher Intern, GeneBIORETS
LSU Health Sciences Center, New Orleans, LA

Adrienne Katner, DEnv:
LSUHSC, School of Public Health

“Developing and Curating Environmental Science Lesson Plans at All Grade Levels that Create, Encourage, and Nurture Student Confidence in Their Scientific Ability”

Values are abstract goals that guide how people think and feel about specific situations and motivate their response. Research shows the values carried into adulthood are ingrained from ages 6-12 and must be reinforced and refined as an individual moves from concrete to abstract thought processes. The lessons taught in grades K-3 and reinforced in grades 4-12 lay the foundations for a person's attitudes toward issues as adults. (Schwartz, 1992) Using research and experimentation into relevant topics in environmental science at all grade levels will create authentic learning leading to a generation of environmentally aware adults with the means, ability, and the will to tackle Earth's environmental issues.

At the high school level, Environmental Science teachers in the United States are much less likely to incorporate experimentation, data collection, and data analysis into their curriculum compared to their colleagues teaching Biology, Chemistry, and Physics. (NASEM, 2015) The failure to include experimentation is problematic because research shows that by the time students reach high school, only 23% consider themselves a “science person” and believe in their ability to “be a scientist”. This is striking compared to 43% of K-3 students who identify science as their favorite subject and say they want to be a scientist when they grow up. (Lei, 2019)

The creation of an online repository of easy to implement classroom experiments and activities related to relevant topics in environmental science at all grade levels, K-3, 4-8, and 9-12 is intended to make it easier for teachers to implement experimentation and data analysis into their lessons. The use of age-appropriate activities to create authentic learning experiences for students at EVERY grade level will encourage inquiry, experimentation, and critical thinking beginning at a very young age, reinforcing curiosity and nurturing students' interest in science, creating future generations of problem-solvers.

Lei, R. F., Green, E. R., Leslie, S. J., & Rhodes, M. (2019). Children lose confidence in their potential to “be scientists,” but not in their capacity to “do science”. *Developmental science*, 22(6), e12837.

Schwartz S. H. (1992). Universals in the content and structure of values: Theoretical tests in 20 countries. *Advances in Experimental Social Psychology*, 25, 1–65.

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