

Examples of Lesson Plans to Meet NGSS and Common Core Challenges in Earth Science Education

Addressing the Next Generation Science Standards (NGSS) and Common Cores for English Language Arts and Math will be a major challenge in the next few years for middle and high school Earth Science teachers. With support from the Deep Earth Academy of the Consortium for Ocean Leadership/International Ocean Discovery Program, we have pro-actively created a set of lesson plans to meet these challenges. The lessons contain examples of strategies to incorporate Common Core Reading and Writing Skills for college and career readiness (<http://www.corestandards.org/ELA-Literacy>). They also provide examples of how to address the important NGSS “Disciplinary Core Ideas,” “Cross-Cutting Concepts,” “Science and Engineering Practices,” and “Nature of Science” (<http://www.nextgenscience.org>). Topics include “Tales of the Resolution,” “Age of the Ocean Floors,” and “Downhole Logging.” “Tales of the Resolution” is a series of ‘graphic novels’ created to describe the scientific discoveries, refitting of the JOIDES Resolution, and variety of careers available in the marine sciences (<http://www.ldeo.columbia.edu/BRG/outreach/media/tales/>). “Age of the Ocean Floor” utilizes the GeoMap App visualization tools (<http://www.geomapapp.org/>) to compare seafloors in different parts of the world. “Downhole Logging” focuses on the borehole engineering and technology utilized to obtain more information about sediments and rocks cored by the JOIDES Resolution scientific drilling vessel. They will be disseminated through websites of the Deep Earth Academy (<http://joidesresolution.org/node/3002>) and Earth2Class Workshops for Teachers (<http://www.earth2class.org/site>). Professional development workshops will also be provided at science education conferences sponsored by the National Earth Science Teachers Association (www.nestanet.org) and other organizations.