**Connecting to the *Next Generation Science Standards* (NGSS Lead States 2013)**

|  |  |
| --- | --- |
| **Standard**  **MS-ESS3:** Earth and Human Activity  The chart below makes one set of connections between the instruction outlined in this article and the NGSS.  Other valid connections are likely; however, space restrictions prevent us from listing all possibilities. | |
| **Performance Expectation**  **MS-ESS3-3:** Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment. | |
| **Dimension** | **Classroom Connection** |
| **Science and Engineering Practice:**  Developing and Using Models:    Develop and/or revise a model to show the relationships among variables, including those that are not observable but predict observable phenomena  Using Mathematics and Computational Thinking:  Apply mathematical concepts and/or processes (e.g., ratio, rate, percent, basic operations, simple algebra) to scientific and engineering questions and problems. | Students mathematically model the relationship between spill area and volume.  Students apply the concepts of slope, proportions, and finding the line of best fit to the problem to figure out how much oil was spilled. |
| **Disciplinary Core Idea**  Biodiversity and Humans:  Changes in biodiversity can influence humans’ resources, such as food, energy, and medicines, as well as ecosystem services that humans rely on— for example, water purification and recycling. | Students discuss the environmental impact of the BP spill and use the landing data from NOAA to determine the survival rate of marine species in the Gulf of Mexico during the BP spill (e.g., shrimp) and its effect on the commercial harvest. |
| **Crosscutting Concept**  Patterns:  Graphs, charts, and images can be used to identify patterns in data. | Students generate multiple data points of oil volumes and associated areas, record these points in the table, and plot them. |

**Connections to the *Common Core State Standards* (NGAC and CCSSO 2010)**

|  |
| --- |
| **ELA**  **RST.6-8.3:** Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks. |
| **Mathematics**  **MP.2:** Reason abstractly and quantitatively.  **7.RP.A.2:** Recognize and represent proportional relationships between quantities.  **7.EE.B.4:** Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. |