Author(s): **Thomas Venezio**			*Lesson Title:* **The Great Oil Clean-up**			
Grade Span			***ICLE Application Model***			
K-4	***5-8*** **X**	***9-12***	***A***	***B***	***C***	***D*** **X**

Instructional Focus:

Basic Concepts and Knowledge Students develop an understanding of scientific concepts using facts, theories, principles, and models.
Science as Inquiry Students demonstrate knowledge and skills necessary to perform scientific inquiry.
Habits of Mind Students develop habits of mind including curiosity, open-mindedness and persistence.
Science in Personal and Social Perspectives Students apply scientific principles to personal and social issues.
Writing Students write for a variety of purposes and audiences with sophistication and complexity appropriate to the grade level.

Performance Task

The focus of this activity is to get students to think about the potential impact of oil spills on our waters and to explore possible ways to clean-up spills. In this activity students will be given a container of water, preferably clear, into which an oil spill will be added. (For effect, cocoa can be added to vegetable oil to create a substance that looks like crude oil.) The students should slowly pour the oil into their water so that it stays on the surface. Using the materials provided, students will attempt to clean up the spill. Based on their experimentation, they will propose the most effective ways to clean up oil spills.

Materials Needed – Clear containers, water, oil, cocoa, oil, soap, cardboard, newspaper, cotton, string, plastic syringe

<u>Spill Clean-up Activity</u>

Test each of the materials and any other ideas you have, and then answer the following questions.

1- Which material or process worked the best? Why?

2- Could any of the other materials or processes be improved? How?

3- Which material or process would you definitely eliminate? Why?

4- For the process or material that you think is the best, answer the following questions?

- How much oil did it pick up?
- Did it also pick up water?
- Did it work quickly?
- Was material or equipment easy to remove from the water?
- How would you dispose of the oil?

ICLE Essential Skills

Know and apply the principles of scientific inquiry. *(Implicit in this statement are the processes of prediction, estimation, developing hypotheses, drawing conclusions, evaluation, and following ethical principles and professional procedures.) (Not Ranked s114*)
Plan and apply real or hypothetical models and constructions to facilitate investigation and learning and the solution to practical problems. *(Not Ranked s115*)
Understand how humans, through technology, cause environmental change by disrupting the equilibrium or balance of nature by introducing pollutants into the environment. (s6)
Understand the human impact on the environment through pollution (air, water, and soil), and ways to improve it through education, research, laws, and conservation. (s10)
Use writing as a tool for learning in formats such as learning logs, laboratory reports, note-taking, journals and portfolios. (ela 40)

Scoring Guide:

Score each of the following characteristics on a scale of 4 to 0, where 4 = surpasses expectations; 3 = high quality performance; 2 = satisfactory quality performance; 1 = minimum quality performance; 0 = does not meet expectations.		
CHARACTERISTICS	**CRITERIA**	**SCORE**
• **Research & Observation**	• Research is conducted accurately • Observations are recorded for later use • Effectively works as a member of the team	_____
• **Lab Report**	• Lab Report is complete • Answers to questions posed are thoughtfully answered • Answers indicate an understanding of the concepts presented • Writing is technically correct in grammar, spelling and punctuation.	_____

Keywords

English Language Arts	**Mathematics**	**Science**
Reading	**Algebra**	**Earth Science**
Writing	**Geometry**	**Life Science**
Communications	**Statistics**	**Chemistry** Pollution, Chemistry in Daily Life, Ecology, Environment
Literature	**Calculus**	**Physics**
Other	**Trigonometry**	**Other**
	Other	