The 5 E's: A Model for Designing Lessons for Inquiry Planner[1]

Logistics Information:

a. Middle School Social Studies Learning Cycle
b. Iowa Core Essential Concepts:
History: Understand the effects of geographic factors on historical events; Geography: Understand how geographic processes and human actions modify the environment and how the environment affects humans.
c. A synthesis of *Project WILD* and 8th Grade American History
d. Developed April 16, 2010

Background Information: Routes of the Lewis and Clark Expedition and the Oregon Trail; goals of the Lewis and Clark Expedition

Materials Required:

Graph and drawing paper
Copies of "Student Data Page"
Copies of "Compare Yourself to a Bear" chart
Yardsticks
Tape Measures

Time Period:

Two thirty-minute sessions

Name of the Unit of Instruction: Bearly Growing (Project WIlD)

I. Plan of the Unit
a. Goals of the unit: Students illustrate, compute, and graph differences between people and black bears at various stages of maturity
b. How this unit relates to the curriculum:

Previous Grade/Course	Current Grade/Course Next	Grade/Course
7th Grade Geography: Climate and landforms in the Midwestern and Western regions of the United States	8th Grade American History: Introduction to Westward Expansion	9th Grade American History:Westward Expansion - continued

c. Lesson Plan: Phases in a 5E Learning Cycle: Engage, Explore, Explain, Elaborate, and Evaluate.

[1] Adapted from *Teacher to Teacher: Reshaping Instruction Through Lesson Study* (NCREL, 2002)

Phases of the lesson: learning activities and key questions (and time allocation)	Student activities/ anticipated student reactions or responses	Teacher's response to student reactions/ Things to remember	Evidence of Student Understanding
ENGAGE (Introduction, Anticipatory Set): Begin a discussion of animals Lewis and Clark would have likely encountered on their expedition. If no one initially mentions bears, ask what predators would have been encountered. Tell students they will learn some "basic bear biology" and compare the biology of bears to their own development as humans.	Students will likely mention bears.		
EXPLORE (Activity, Investigation): Ask students to predict how big bear cubs are at birth, how many are born at the same time, what bear cubs eat, and how much they weigh when they are one year old, how long they live. Students will read "Basic Bear Biology" in groups of four. Students will compare the findings to their predictions. Students will complete the "Compare Yourself to a Bear" data chart. Students will construct graphs showing the growth of a human and a bear.		Students may need review of basic skills involved in graph construction: use of scales, placements of units	
EXPLAIN (Closure): Students will discuss the similarities of humans and bears. Students will discuss the reaction of Lewis and Clark to bears encountered. Students will discuss the impact of westward expansion on bear populations.			Students will give answers indicating an understanding of impact of humans upon the environment.

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ELABORATE (Connections and Applications): Students can discuss other animals Lewis and Clark might have encountered, developed questions regarding those animals, and engage in research to find answers. **EVALUATE:** Formative evaluation of ability to construct and interpret graphs.			

EXTENSIONS

Mathematics/Art: Compare the size of several species of bear and draw scale models of these bears and a human.

Language Arts: Write a journal entry from the perspective of Lewis and Clark describing encounters with a bear.
Write a journal entry from the perspective of the bear.