National Center for Technological Literacy®
Museum of Science, Boston

ATLAS

Development of Model Lessons for Integrating ET Concepts and Skills in Elementary Education Programs/Course(s)

College: Course Name and Number: Instructor:	Bridgewater State College ELED 310 Teaching Science & Social Studies in Elementary School Niki Glen
Concepts Presented	engineering, pollination and plant parts, lesson planning, problem solving, connecting to MA Curriculum Frameworks
CourseMaterials : (Please list *EiE* units)	The Best of Bugs
Pedagogy Emphasized	how to plan constructivist lessons/units, how to use multiple MA Curriculum Frameworks in one unit, how to use problem solving situations in science lessons/units
Student Classroom Activities	A small group of preservice teachers will go through the Best of Bugs unit as it's presented by the MOS. Following this, they will evaluate its effectiveness for teaching science and engineering. Then, they will add to the Best of Bugs unit based on what they feel their students still need to learn about the science and engineering topics involved, creating a larger science unit using the Best of Bugs as a starting point. Then, the small group of preservice teachers will present their unit to the rest of the class, allowing the class to do parts of the Best of Bugs unit. (Given time constraints, it will only be parts of it, whichever parts the preservice teachers decide. However, they will at minimum describe the entire unit, even if the class isn't able to perform all of the activities in it.)
Hours of Class Time	5+ hours for prep and presentation
Hours of Preparation Time for Faculty	1 hour for reading unit thoroughly for myself 30 minutes for getting materials set up, organized

	1 hour or more working with students to analyze the Best of Bugs unit
State/National ET Standards Addressed	MA Engineering Frameworks Grades 3-5: **1.1 Identify materials used to accomplish a design task based on a specific property, e.g., strength, hardness, and flexibility. 2.2 Describe different ways in which a problem can be represented, e.g., sketches, diagrams, graphic organizers, and lists; 2.3 Identify relevant design features (e.g., size, shape, weight) for building a prototype of a solution to a given problem. 2.4 Compare natural systems with mechanical systems that are designed to serve similar purposes, e.g., a bird's wings as compared to an airplane's wings**.
Integration/Collaboration with Other Departments/Faculty	None for this semester, except to disseminate information about my use of the Best of Bugs unit.
Student Assignments Related to Lesson	Students (preservice teachers) will plan a constructivist science/engineering unit using Best of Bugs as a starting point and adding to it or changing components based on what they feel elementary students need to learn in addition to what is already presented. Students (preservice teachers) will then use the Best of Bugs unit and the other components they created and teach components of it to a class of preservice elementary teachers. Given time constraints, it will not be possible to have the entire class go through all parts of the unit. However, the entire class will be informed of what the unit contains and notified of the additional units that the MOS provides to BSC student teachers.
Examples of Utilization by Students in Practicum	Same as above. Also, preservice teachers will be informed of the MOS curriculum, it's location in the BSC teacher resource room, and its availability to use in their future teaching placements.
Alignment with Transfer Requirements of Four-Year Institutions	not applicable
Evaluation of Lesson(s)—Student Response and Faculty Comments	I will be evaluating their unit planning based on a rubric that I created. Students will also write anonymous comments about the Best of Bugs unit for the MOS to consider. I will report on my students' use of the unit to the MOS and the faculty at BSC.