**Statement of Purpose**

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This project will be utilizing the goals of the new Ohio CORE standards looking at the new standards for eighth grade science. Eighth grade science has student objectives in each of the three main strands of science education: earth and space, life, and physical science. Such diversity appears disconnected and unrelated at first, but through this project the underlying relationships and connections between the strands will be explored and conveyed to the students. Therefore, the main purpose of this project is to discover and highlight multiple connections between each of the main objectives linking them through scientific inquiry, reasoning and/or historical supports.

Eighth grade science is heavy in fact-based information that could easily be seen as isolated facts with little to no connection to the other topics or concepts. The concepts and standards provide a basic list of topics and ideas that must be connected to maximize student achievement. Each concept must be made real and engaging. “Keeping students engaged is one of the most important considerations of classroom teachers” (Marzano, 2007). By increasing the student engagement student achievement is increased (Marzano, 2007). It is this engagement and the real world connections that this project seeks to outline. By mapping the content and identifying means by which to increase engagement one can utilize each of the three types of engagement: behavioral, emotional, and cognitive. Through cooperative learning, current events, games, inquiry and mild competition each topic can become more engaging and relevant to the student learner.

A second purpose of this project is to create and explain the learning goals for each unit or topic covered in eighth grade science. These goals will be based on state standards and will be isolated apart from the learning activities associated with each goal. By focusing instructional efforts on well organized learning goals and sharing these goals with students, student achievement has been shown to increase (Marzano, 2001). Direct communication of the learning goals, with students, increases student engagement and makes learning more realistic. Such communication can be more easily tracked and monitor by the instructor and shared with concerned parties. This tracking then provided opportunities to celebrate success which then creates positive relationships and further engages the students (Marzano, 2001).

Throughout eighth grade science the main content will be covered using the Holt, Rinehart, Winston unit series published in 2007. These books will serve as the reference of information, but many of the connections will be pulled from current events, previously learned knowledge, Ohio Achievement Assessments and other internet based information. Such methodology will allow the students to explore content and form connections between current events and real-life situations increasing the depth of knowledge and application for each student.

Science at the eighth grade level covers a wide range of material. This material is full of real-world, inquiry-based possibilities that are not only fun, but engaging. The material is disjointed, but connections can be seen by examining the skills needed increase student understanding of each concept. Whether the students is studying Earthquake proofing buildings or creating timelines depicting the fossil record the students will utilize problem solving strategies and meet the requirements within the bonds of given restraints. Many concepts themselves overlap into the other disciplines being taught. For example the study of heredity and its relationship to natural selection and evolution is closely connected to the student’s ability to interpret and analyze information in the geologic timeline. These skills will serve students both as now and adults.

Unlike other subjects science may not be an obvious daily part of a person’s adult life. Of course in general term everything around a person is science since science is the study of the natural world, but the individual concepts are not. People cannot help but notice the reading, writing and mathematics in an average person’s daily life and see the important of such studies; science is equally important. The problem solving skills and logically analysis strategies used in science are the same skills adults use to plan their day or organize personal information and events. The hypothesis test is not as formal in the real world, but it is still an important part of everyday life as adults ask “if… then…” type questions and seek methods to find the answers. The skills of explanation and reasoning applied to scientific concepts can then be applied to other situations that students will face currently and in the future. It is for these reasons that science is important and that the content needs to be explored to teach students how to apply these skills and utilize resources to solve problems.

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