

Rationale

This upcoming year, schools across the state of Ohio will be working to learn, understand, and implement the revised Ohio Academic Content Standards set by the Ohio Department of Education. When reviewing the revised standards this year, teachers quickly began to conclude that these standards were far from revised; they were more like brand new. As Ohio pushes us to change from teaching width into teaching depth, teachers are struggling to understand how to take the simplified content standards and provide the depth needed to help students achieve higher levels of academic success.

These revised standards presented by the Ohio Department of Education work to meet four different cognitive learning demands in the science content (NAEP, 2008). The first cognitive demand requires students to solve science-based engineering or technological problems through application of scientific inquiry. The second cognitive demand requires students to use the various levels of scientific inquiry in an effort to demonstrate science knowledge. Interpreting and communicating science concepts is the third cognitive demand. Finally, recalling accurate scientific facts, concepts, and relationships is the final cognitive demand. In teaching the given science content by the Ohio Department of Education, teachers will find that they will be integrating these four cognitive learning demands throughout their entire science curriculum.

For this unit, I chose to focus on one concept found within one out of the three given science topics in the second grade Ohio Academic Content Standards. The concept I chose was the water cycle from the atmosphere portion of the content standards. My curriculum design will work to break this topic down into parts that will help teachers present the needed curriculum in smaller, manageable chunks that will provide the depth needed for academic success. The essential question for this project is, "What is the water cycle, and how does it affect me?"

Water is a very vital resource needed for survival on Earth. The water cycle provides an explanation showing how water is recycled through our environment. All living things on Earth need or use water in some way. Learning about water and the water cycle will help students better understand how our environment works and how it impacts our atmosphere and weather.

Through this curriculum design, students will be given the opportunity to facilitate their learning through active, engaging projects as well as experiences that will prove to be meaningful and relevant to their own individual lives as well as provide them with the ability to easily adapt within a society. This will help our students grow into responsible and environmentally conscious citizens in the future.

This curriculum design is based on a “backward design” approach, similar to the Wiggins and McTighe Backward Design (Chiarelott, 2011). This design is appropriate for the grade level because it places larger emphasis on the children’s learning and development as opposed to content-specific standards and outcomes. It is very important to present this curriculum in a way which is meaningful, relevant, and developmentally appropriate for these younger-aged children. Some of the content is very academically intense and must be presented in a more child-friendly way. In this approach, I first identified the desired results, then determined the acceptable evidence, and ended by planning the learning experiences and instruction.

The curriculum design is also a standards-based curriculum design (Chiarelott, 2011). In today’s educational society, teachers must allow the Ohio Academic Content Standards to drive their curriculum. My project follows the given topics, content standards, and expectations for learning that are outlines by the Ohio Academic Content Standards.

The instructional design for this unit is a basic lesson plan model that is built upon a constructivist model of teaching (Chiarelott, 2011). There are specific concepts, lesson objectives,

procedures, assessments, and materials outlined for the lesson. The sequence of the lessons shows an introduction to the big concept of the water cycle, which then breaks down into smaller concepts of evaporation, condensation, and precipitation. There are also hands-on materials and resources for the students to use in constructing their own knowledge. Many opportunities for dialogue between the teacher and the students are found within the lessons. One of the lessons also allows for students to work in groups which will allow for a cooperative learning experience in the classroom.

References

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