Matthew Seasly February 21, 2012 EDTL 7100 Sequential Rationale

**Sequential Rationale**

My fifth grade science curriculum is sequenced according to the learning-related model, where I will focus on the familiarity aspect of this particular model. In fifth grade science, students seem to be more familiar with the concepts or ideas that are entailed within the academic content standards. I will start with the topics they are the most familiar with, and then progress to the topics they are the least familiar with or have the least exposure too. I feel that arranging my curriculum in this order will increase the level of learning of my students and allow them to use their previously acquired knowledge, to help solve or aid them in learning new material throughout the year. It will also help them to have success on the Ohio Achievement Assessment (OAA), which will be taken in the spring.

My first unit will consist of ecosystems. This unit is a great unit to start with because the weather is still nice, the plants are still green and not dormant, and the animals are still active. Since my school is located in a rural area, my students will be able to go outside and see an active ecosystem and discover live organisms in an engaging, hands-on activity. They will be able to physically see that producers (plants) play a significant role within all ecosystems, regardless of what type of consumer is present. Students will also be taking notes on what they have discovered, drawing food chains or food webs, and using appropriate tools (e.g. hand lens or nets) to collect data. Using their experiences of being in a rural school and the landscape that surrounds them, students are able to learn about ecosystems very easily because of the experiences they have encountered throughout their brief lives.

My second subunit will consist of renewable/non-renewable resources, which is closely related to ecosystems. Students are able to learn how to extend the life of non-renewable resources through the use of reducing, reusing, and recycling (3 R’s). These practices help in the reduction of pollution or any harm that could potentially hurt the environment. They also will learn how to maintain the renewable resources (e.g. water, air, and plants) they need to keep them alive and the organisms surrounding them. Even though this is a brief subunit, it helps reinforce the concepts of ecosystems and the many benefits that play in our survival.

The third unit in my curriculum is on light. Students will learn about the many different aspects about light. They will discover that light can be reflected, refracted, and/or absorbed, but travels in waves. Students will learn that visible light is white, that the color spectrum consists of seven basic colors, and that wearing black shirts will absorb more light, which leads to heat, while white colors, do not absorb as much light. Learning why they see particular colors is also something they will learn. The color they see is the color reflected. Finally, they will learn about how light can pass through particular materials (e.g. transparent or translucent), but be blocked (e.g. opaque) by others. The various hands-on activities and interactive games or websites they will be exposed too will help them learn and/or reinforce the material they have already learned.

Sound is the next unit that I expose my students too because of the many similarities that sound and light have in common. Sure they are different, but both travel in waves, get absorbed, and travel through mediums. Students have been surrounded by sound their entire lives, which makes activities so easy to design. They will be given opportunities to adjust rubber band lengths to achieve different levels of pitch, encounter interactive websites, and participate in a sound activity where the only sense they are allowed to use is the sense of sound.

Electricity is the next unit that students are exposed too over the course of the school year. In order for students to understand the basics about electricity, they must first learn about the many concepts that are related to it. Conductors, insulators, voltage, amps, ohms, and resistance are the key terms or concepts directly associated with electricity. It also generates heat, sound, magnetism, and light. Students will be able to construct simple circuits (e.g. series or parallel) to trace the path of electricity. They will also insert insulators and/or conductors within their simple circuits to see the effects each have. Students will be able to apply what they have learned to describe resistance and how improve the performance of electricity in circuits.

The next unit entails planet Earth and the many unique characteristics that are located on this planet. Students will learn about the atmosphere, what Earth orbits, the shape of its orbit, how much water covers it, cause of day/night, and that it is located on a tilted axis. They will also learn that the sun is the closest star located to it and that life is dependent upon it. A quick reminder back to ecosystems may help students remember how important the sun is to this planet’s survival and its many benefits.

After planet Earth, students will learn about the other remaining planets located in the solar system and why the other stars look smaller when compared to the sun. Students will learn about the positions of the other planets and why each one has difficulty sustaining life. Even though this is a brief unit, it is a very important unit, because students need to realize that the sun is not the only star out there, certainly is not the biggest, and that other planets orbit the sun, just as Earth does.

Once all academic content standards are taught, students will begin reviewing the concepts they have learned throughout the year. This review will prepare students for the OAA, which usually takes place the last few weeks before the assessment is actually given. To help students succeed, they will be given released test questions from previous tests, discuss test strategies to help aid students in choosing the correct answer (e.g. choice elimination), how to answer short answer and extended response questions, and reviewing third and fourth grade standards, since this assessment is a measure of three grade levels. The before mentioned activities all seem to build confidence in students before they take it.

The final unit will consist of students completing a research project on a particular planet and the discussion of sixth grade standards. Students will research a planet of their choice, draw a picture of it, list several characteristics (e.g. length of orbit, length of day, etc.) about it, and present the newly acquired information to their classmates. Students will be given assess to computers and informational books about their planet to help aid in their comprehension of their planet. Any remaining time, I will discuss what the next grade level will entail for them. I will give them some brief lessons about what they will learn. It seems to generate interest and hopefully that translates to success the following school year.