The fifth grade science course follows the Core Knowledge Sequence. The class will meet 2 times per week, with one double lab period each week. We will emphasize hands-on learning and scientific experimentation. An outline of major course goals and approximate timing is outlined below.

1. **Introduction to Chemistry and Biochemistry (1st Quarter)**
   - Atomic structure
   - Periodic Table
   - Bonding and Chemical Properties of Matter
   - Major Biomolecules: Lipids, Carbohydrates, Nucleic Acids and Proteins
   - Polymers, Dehydration Synthesis and Hydrolysis
   - Enzyme Structure and Function
   - Cellular Respiration and Photosynthesis

2. **Cellular Biology (2nd Quarter)**
   - Comparison of eukaryotic and prokaryotic cells
   - Comparison of plant and animal cells
   - Structure of the cell membrane and cellular transport
   - Cell organelles and their functions
   - Protein synthesis (DNA transcription and translation)
   - Mitosis and meiosis

3. **Organismal Biology and Ecology (3rd Quarter)**
   - Classification overview
   - Plant Tissues and Structures
   - Monocots vs. Dicots
   - Plant Growth and Reproduction
   - Commence Lady Slipper Projects
   - Energy flow in ecosystems (food webs and owl pellet dissection)
   - Organismal interactions: commensulism, predation, mutualism, parasitism
   - Biomes

4. **Human Anatomy and Physiology (4th Quarter)**
   - Human Endocrine System
     - Major glands and the hormones they secrete
     - Pathophysiology: what happens when glands are not functioning properly (hyper- & hypo-thyroidism, diabetes -mellitus types I and II, diabetes insipidus, parathyroid disorders and bone formation.
   - Human Reproductive System
     - Structure and function of major reproductive organs
     - Spermatogenesis, Ovulation, Menstruation and Pregnancy
     - Human development
o Human Muscular and Skeletal systems (* time permitting*)