**UNIT PLANNING OVERVIEW FOR QUARTER: First Quarter**

**COMPLETE WITH HOME CONNECTION**

**Teacher Name: Chris Westfall**

**Grade Level: Sixth Grade**

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| **Subject: Science**  **Topic Description:**   * **Microbiomes** | |
| **STAGE 1** | **DESIRED RESULTS** |
| **Established Goals** | This topic addresses the following Next Generation Science Standards:   * **Performance Expectations:** MS-LS1-1, MS-LS1-2, MS-LS1-3, MS-LS2-1, MS-LS2-2 * **Science and Engineering Practices:** 1, 2, 3, 4, 5, 6, 7, 8 * **Disciplinary Core Ideas:** LS1:A, LS2.A * **Crosscutting Concepts:** Scale, Proportion, and Quantity; Stability and Change; Cause and Effect; Patterns   In addition to the Next Generation Science Standards, this topic addresses the following Common Core Standards for ELA and Math:   * (Reading Informational Text) RI.6.1 – RI.6.10, RI.5.7, RI.5.10 (Writing) W6.1, W6.2, W6.4, W6.7 – W6.10 (Math Content) 6.RP.1, 6.RP.3, 6.NS.3, 6.NS.7, 6.SP.5 |
| **Enduring Understandings** | * Students will understand that many organisms are microscopic. * Students will understand all living things are made of cells. * Students will understand almost all cells are microscopic. * Students will understand cells are much bigger than molecules. * Students will understand that the human microbiome contains approximately 100 trillion microorganisms. * Students will understand that the human body provides an environment for bacteria to survive. * Students will understand that an infection in the human microbiome can make a person sick. * Students will understand that antibiotics reduce the number of bacteria in the microbiome. * Students will understand that living with fewer than normal helpful bacteria in their guts more easily become infected with harmful bacteria. |
| **Essential Questions** | * How can having 100 trillion microorganisms on and in the human body keep us healthy? * How small are the microorganisms that live on and in the human body? * How can fecal transplants cure patients infected with harmful bacteria? |
| Students will know… | * Many organisms are microscopic. * All living things are made of cells. * Almost all cells are microscopic. * Cells are much bigger than molecules. * The human microbiome contains approximately 100 trillion microorganisms. * The human body provides an environment for bacteria to survive. * An infection in the human microbiome can make a person sick. * Antibiotics reduce the number of bacteria in the microbiome. * Living with fewer than normal helpful bacteria in their guts more easily become infected with harmful bacteria. |
| Students will be able to… | * Students will be able to ask and answer questions. * Students will be able to develop and use scale models. * Students will be able to plan and carry out investigations. * Students will be able to analyze, and interpret data. * Students will be able to engage in argument from evidence. * Students will be able to obtain, evaluate and communicate information. |
| **STAGE 2** | **ASSESSMENT EVIDENCE** |
| **Performance Tasks** | The goals for assessment fall into three categories:  **1. Content knowledg**e—reflect the facts of science that students learn throughout the unit.  **2. Conducting investigations**—focuses on skills needed for a successful scientific investigation.  **3. Building explanations**—using discourse by presenting evidence that supports students’ ideas.  **Formative assessments** are embedded within the investigations to provide diagnostic information to make decisions about instruction for individual students and the class.  **Performance Assessments** are designed to look at a student’s ability to plan, organize, and conduct investigations and construct arguments -- in short, their ability to do science.  Often one whole part of an investigation is devoted to this process.  Scoring Guides are used to evaluate skills and abilities. |
| **Other Evidence** | Grades will be based on an assortment of quizzes, tests, and assignments.  Classwork- 40%  Homework/Participation - 10%  Quizzes- 20%  Tests/Assessments- 30% |
| **STAGE 3** | **HOME/SCHOOL CONNECTION** |
| **Learning Activities** | * Have your child read or watch documentaries on the human microbiome, antibiotics and fecal transplants. * Visit the Field Museum. * Have your child plan and carry out another investigation and construct arguments using all the steps they’ve learned throughout this unit. |