**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**
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| **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
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| **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.
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| **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?
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* 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.
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| 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.
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| **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.
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