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| **GRADE LEVEL:** | | **Sixth Grade** |  | | | |  | | |  |  | |  |  |  | |  | |
| **COURSE / SUBJECT:** | | **Science** |  | | | |  | | |  |  | |  |  |  | |  | |
| **UNIT OF STUDY : Unit 2: Cells** | | | | | | | | | |  |  | |  |  |  | |  | |
| **THEME / ESSENTIAL QUESTION(S):** | | | | | | | |  |  |  |  | |  |  |  | |  | |
|  |  | **Why are cells considered the building blocks of all life?**  **How are unicellular and multicellular organisms similar and different?**  **How are plant and animal cells similar and different?**  **How are cells organized in a multicellular organism?**  **How are traits inherited?** | | | | | |  |  |  |  | |  |  |  | |  | |
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| **STANDARDS** | | | | | | | | **ENDURING UNDERSTANDINGS *What are the long term, big-ideas of content that I want students to understand?*** | | | **KNOWLEDGE / SKILLS *What do I want Students to Know & Be Able to Do?*** | | | | | | **PACING Lesson # # of Days** | |
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| **LS1.A Structure and Function**  **LS1.B Growth and Development of Organisms**  **LS1.C Organization for Matter and Energy Flow in**  **Organisms**  **LS3.A Inheritance of Traits**  **LS3B Variation of Traits**  **Standard: 2.** Recognize that all organisms are composed of cells, and that many organisms are single-celled (unicellular), e.g.,  bacteria, yeast. In these single-celled organisms, one cell must carry out all of the basic functions of life.  **Standard: 3.** Compare and contrast plant and animal cells, including major organelles (cell membrane, cell wall, nucleus, cytoplasm, chloroplasts, mitochondria, vacuoles).  **Standard: 4.** Recognize that without cells, many of the basic functions of organisms (e.g., extracting energy from food and getting rid of waste) are carried out. The way in which cells function is similar in all living organisms.  **Standard: 5.** Describe the hierarchical organization of multi-cellular organisms from cells to tissues to organs to systems to  Organisms.  **Standard: 7.** Recognize that every organism requires a set of instructions that specifies its traits. These instructions are stored in the organism’s chromosomes. Heredity is the passage of these instructions from one generation to another.  **Standard: 8.** Recognize that hereditary information is contained in genes located in the chromosomes of each cell. A human cell contains about 30,000 different genes on 23 different chromosomes. | | | | | | | | **• Cells are the building blocks of all living things and contain organelles that do different jobs.**   * **Cells are organized in multicellular organisms.** * **All organisms contain genetic information that determines its traits.** | | |  | Students will be able to demonstrate knowledge of…  Cells are the smallest unit of any organism.  A unicellular organism is made up of only one cell, so it must perform all of the jobs of the cell independently; whereas a multicellular organism is made up of many different kinds of cells that have different jobs.  Organelles are structures inside a cell that have different jobs in order to keep the cell alive and healthy.  Only plant cells have chloroplasts and a cell wall.  Groups of cells that have similar jobs combine to form tissues in a living thing.  Two or more tissues can combine to do a job for a living thing, forming organs.  Organs cooperate to perform jobs for a living thing, creating organ systems.  All of the organ systems combine to form an organism.  Traits are visible characteristics of an organism and they are passed along from parents to offspring in sexual reproduction.  Chromosomes from each parent combine to create unique offspring.  In sexual reproduction, each parent provides half of the genes for their offspring. | | | |  | **November-December** | |
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| **ASSESSMENT: *HOW WILL I KNOW WHAT MY STUDENTS HAVE LEARNED? WHAT WILL BE THE EVIDENCE?*** | | | | | | | | | | | | | | | |  |  |  | |
| **-Compare/Contrast Plant and Animal Activity**  **-Cell Identification Lab**  **-Cell Labeling Assessment**  **-Organelle Function Assessment**  **-Trait Transfer Lab** | | | |  |  |  |  | | |  |  | |  | | |  |  |  | |
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| **TECHNOLOGY & RELATED CONTENT INTEGRATION:** | | | | | | |  | | |  |  | |  | | |  |  |  | |
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