



7th Grade Science Pacing Guide 2020-2021

| 4.0 Target | | 3.0 Target | | 2.0 Target | | Tri 1 | Tri 2 | Tri 3 |
|--|---|--|--|------------|---|-------|-------|-------|
| Unit 1: Life's Characteristics | | | | | | | | |
| Describe how environmental variables affect cell organelles and the function of the cell as a whole. | LS 1-2: Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function. | Describe the the function(s) of most parts of the cell. | | X | | | | |
| Describe how cells screen for mutations and mechanisms that occur when a mutation is found. | LS 3-1: Develop and use a model to describe why mutations may result in harmful, beneficial, or neutral effects to the structure and function of an organism. | Recognize that a mutation impacts the structure of a DNA molecule | | X | | | | |
| Unit 2: Genetic Variation | | | | | | | | |
| Describe how an outlying factor (human/environmental) would affect the probability of successful reproduction of a plant or animal population. | LS 1-4: Develop and support a claim based on empirical evidence and scientific reasoning to prove how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively. | Identify reproductive strategies used by both plant structure and animal behaviors that affect successful reproduction. | | X | | | | |
| Explain the process of how genes are expressed based on activity at the genetic level. | LS 1-5: Construct a written scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms. | Identify environmental and genetic factors that influence the growth of organisms. | | | X | | | |
| Unit 3: Earth Within the Universe | | | | | | | | |
| As waves are manipulated, model and/or explain the impact. | PS 4-2: Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials. | Classify examples of wave motion using vocabulary terms like reflection, absorption, refraction | | | X | | | |
| Explain how human impact have affected geoscience processes and its' continued impact over time. | ESS 2-2: Construct a written explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales. | Identify the geoscience processes that change the Earth's surface feature over time. | | | X | | | |
| Use a model to explain the cyclic patterns of other celestial bodies in the solar system. | ESS 1-1: Develop and use a model, with written explanation, of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons. | Recognize the cyclic patterns observed throughout the solar system--lunar phases, eclipses of the sun and moon, and seasons | | | | | | X |
| Unit 4: Forces | | | | | | | | |
| Explain how other variables will effect the planned investigation. | PS 2-2: Plan an investigation, in writing, to provide evidence that the change in an object's motion depends on the sum of the force on the object and the mass of the object. | Provide an explanation that the change in an object's motion depends on the sum of the force on the object and the mass of the object. | | | | | | X |
| Explain the impact of a change and/or interruption in an object's force field. | PS 2-5: Conduct an investigation and write an evaluation of the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact. ** | Conduct an investigation and write an evaluation of the experimental design, providing weak or no evidence that fields exist between objects exerting forces on each other even though the objects are not in contact. | | | | | | X |
| Engineering Design | | | | | | | | |
| N/A | ETS1-1: Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions. | N/A | | | | | X | |
| N/A | ETS1-2: Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem. | N/A | | | | | X | |
| N/A | ETS1-3: Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success. | N/A | | | | | X | |
| N/A | ETS1-4: Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved. | N/A | | | | | X | |