

Prince William County Schools
Life Science
Suggested Pacing Guide
2019 - 2020



FIRST QUARTER (47 DAYS)	SECOND QUARTER (45 DAYS)	THIRD QUARTER (43 DAYS)	FOURTH QUARTER (45 DAYS)
<p style="text-align: center;">August 26-November 1</p> <p>Introduction to Life Science & Science Problem-Solving (2 weeks)</p> <ul style="list-style-type: none"> ➤ Classroom procedures and laboratory safety ➤ Methods of scientific problem-solving and experimental design ➤ Nature of Science (NOS) <p>Unit 2 Life Processes & Cellular Organization (2 weeks) LS.3, LS.1</p> <ul style="list-style-type: none"> ➤ Characteristics of life ➤ Cells, tissues, organs, and systems ➤ Patterns of cellular organization and their relationship to life processes in living things ➤ Science process skills (<i>infused</i>) <p>Unit 1 Cell Structure & Function (3 weeks) LS.2a-c, LS.1</p> <ul style="list-style-type: none"> ➤ Cell structure and function ➤ Compare/contrast plant/animal cells ➤ Development of cell theory ➤ Science process skills (<i>infused</i>) <p>Unit 3 Photosynthesis (2 weeks) LS.5a-b, LS.1</p> <ul style="list-style-type: none"> ➤ Energy transfer between sunlight and chlorophyll ➤ Transformation of water and carbon dioxide into sugar and oxygen ➤ Science process skills (<i>infused</i>) <p>Aug 30, Sept. 2 – Labor Day: No School Oct. 14, Nov. 5 and 6 – In-service/Workdays</p>	<p style="text-align: center;">November 6-January 24</p> <p>Unit 4 Cell Growth & Reproduction (2 weeks) LS.2d</p> <ul style="list-style-type: none"> ➤ Cell division (somatic cell) ➤ Science process skills (<i>infused</i>) <p>Unit 5 DNA & Heredity (5 weeks) LS.12, LS.1</p> <ul style="list-style-type: none"> ➤ Structure and role of DNA ➤ Function of genes and chromosomes ➤ Sex cell production (meiosis) ➤ Genotypes and phenotypes ➤ Characteristics that can and cannot be inherited ➤ Genetic engineering and its applications ➤ Historical contributions and significance of discoveries related to genetics ➤ Science process skills (<i>infused</i>) <p><u>Note: Family Life Education may be taught after Units 4 & 5 to connect meiosis to human reproduction or taught at the end of the year.</u></p> <p>Unit 7 Evolution & Genetic Variation (2 weeks) LS.13, LS.1</p> <ul style="list-style-type: none"> ➤ Relationship mutation, adaptation, natural selection, and extinction ➤ Evidence of evolution ➤ How environmental influences, as well as genetic variation, can lead to diversity of organisms. ➤ Science process skills (<i>infused</i>) <p>Nov. 11 – Veterans’ Day: No School Nov. 27-29 – Fall Break Dec. 23-Jan 3 – Winter Break Jan 20 – Martin Luther King Birthday: No School Jan. 27 – In-service/Workday</p>	<p style="text-align: center;">January 28-March 27</p> <p>Unit 6 Classification of Living Things (3 weeks) LS.4, LS.1</p> <ul style="list-style-type: none"> ➤ Characteristics of domains of organisms ➤ Characteristics of kingdoms of organisms ➤ Characteristics of major animal phyla and plant divisions ➤ Characteristics that define a species ➤ Science process skills (<i>infused</i>) <p>Unit 8 Energy Flow & Cycling of Matter (3 weeks) LS.6a-b, d, LS.5c, LS.8a, LS.1</p> <ul style="list-style-type: none"> ➤ Carbon, water, and nitrogen cycles ➤ Interactions resulting in a flow of energy and matter throughout the system ➤ Importance of photosynthesis ➤ Energy flow in food webs & energy pyramid ➤ Relationships among producers, consumers, and decomposers in food webs ➤ Science process skills (<i>infused</i>) <p>Unit 9 Populations & Communities (3 weeks) LS.7, LS.8b-e, LS.1</p> <ul style="list-style-type: none"> ➤ Competition, cooperation, social hierarchy, territorial imperative ➤ Influence of behavior on a population ➤ Relationship between predators and prey ➤ Symbiotic relationships ➤ Niches ➤ Science process skills (<i>infused</i>) <p>Feb 17 – Presidents’ Day: No School March 30 – In-service/Workday</p>	<p style="text-align: center;">March 31-June 12</p> <p>Unit 10 Biomes & Ecosystems (3 weeks) LS.6c, LS.9, LS.1</p> <ul style="list-style-type: none"> ➤ Land, marine, and freshwater ecosystems ➤ Complex relationships within terrestrial, freshwater, and marine ecosystems ➤ Adaptations that enable organisms to survive within a specific ecosystem ➤ Science process skills (<i>infused</i>) <p>Unit 11 Environmental Change Over Time (3 weeks) LS.10, LS.11, LS.1</p> <ul style="list-style-type: none"> ➤ Phototropism, hibernation, and dormancy ➤ Factors impacting population size ➤ Eutrophication, climate changes, and catastrophic disturbances ➤ Change in habitat size, quality, or structure ➤ Change in species competition ➤ Population disturbances, factors that threaten or enhance species survival, environmental issues, food production and harvest ➤ Science process skills (<i>infused</i>) <p>Family Life Education: Human Sexuality (2 weeks)</p> <ul style="list-style-type: none"> ➤ <u>Emotional, Social, Physical Changes</u> ➤ <u>Review of human reproduction</u> ➤ <u>Media messages related to sexuality</u> ➤ <u>Changing role of peers, purpose of dating</u> ➤ <u>Consequences of early sexual activity and teen pregnancy</u> <p><u>FLE must be taught to students who do not opt out.</u></p> <p>April 6-10 – Spring Break April 13 – Inservice/Workday May 25 – Memorial Day: No School June 15 – Workday</p>

Note: To ensure consistency countywide, schools are highly encouraged to adhere to the sequence of science content outlined above.