

Biology
PISD Curriculum: Year at a Glance

Bundle	<i>Title</i> Big Ideas/Enduring Understandings	Guiding Questions
1	<p><i>Introduction to Biology</i></p> <ul style="list-style-type: none"> ▪ The goal of science is to investigate and understand our natural world through inquiry and scientific method. 	<ul style="list-style-type: none"> ▪ How is the use of technology related to scientific inquiry?
2	<p><i>Populations and Communities</i></p> <ul style="list-style-type: none"> ▪ Organisms are interdependent and interact with each other and with their environment. 	<ul style="list-style-type: none"> ▪ How does energy flow through ecosystems? ▪ How do symbiotic interactions create dependencies between organisms?
3	<p><i>Ecosystems and Biomes</i></p> <ul style="list-style-type: none"> ▪ The chemical elements that make up the molecules of living things pass through food webs and are combined and recombined in different ways. 	<ul style="list-style-type: none"> ▪ How does matter cycle through ecosystems?
4	<p><i>Biochemistry</i></p> <ul style="list-style-type: none"> ▪ The study of biochemistry lays the foundation for understanding metabolism and other cell functions. 	<ul style="list-style-type: none"> ▪ What is the role of bio-macromolecules in organisms? ▪ What is the role of enzymes in biological processes?
5	<p><i>Cells</i></p> <ul style="list-style-type: none"> ▪ Cells are an organism's basic units of structure and function. 	<ul style="list-style-type: none"> ▪ How do cells process matter and energy to carry out the functions of life? ▪ How are the functions of a cell similar to and different from the functions of an organism?
6	<p><i>DNA & Protein Synthesis</i></p> <ul style="list-style-type: none"> ▪ DNA is the code for making of proteins used for structure and function. 	<ul style="list-style-type: none"> ▪ How does DNA convey traits? ▪ How is DNA replication related to the process of mitosis?
7	<p><i>Genetics and Society</i></p> <ul style="list-style-type: none"> ▪ Genetics has strong personal and societal implications. 	<ul style="list-style-type: none"> ▪ How do mutations in DNA affect traits in organisms and the diversity of a population? ▪ How has genetics affected agriculture, medicine, and society?
8	<p><i>Evolution</i></p> <ul style="list-style-type: none"> ▪ The earth's present-day species are descended from earlier, distinctly different species. 	<ul style="list-style-type: none"> ▪ What is the evidence for evolution? ▪ How does natural selection lead to new species?
9	<p><i>Organizing Life's Diversity</i></p> <ul style="list-style-type: none"> ▪ Living things are categorized according to their similarities and differences. 	<ul style="list-style-type: none"> ▪ What benefit is there to categorizing living things? ▪ How does taxonomy illustrate the relatedness of organisms?
10	<p><i>Plants</i></p> <ul style="list-style-type: none"> ▪ Plants are important in the cycling of nutrients and energy in ecosystems. 	<ul style="list-style-type: none"> ▪ How are plant structures related to their function? ▪ How are plants important to the energy flow in an ecosystem?

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11	<p><i>Microorganisms and Their Habitats</i></p> <ul style="list-style-type: none"> ▪ Microorganisms play an integral role in the health of organisms and in ecological systems. 	<ul style="list-style-type: none"> ▪ How are microorganisms beneficial to the health of animals and plants? ▪ What is the role of microorganisms in disease and how do organisms fight infection?
12	<p><i>Comparative Anatomy</i></p> <ul style="list-style-type: none"> ▪ Although organ systems vary among organisms, their structures are related to their functions, one of which is maintaining homeostasis within the organism's environment. 	<ul style="list-style-type: none"> ▪ How do organs and organ systems work together to maintain an organism's health? ▪ How are organs and organ systems similar and different in various species?