



Shamokin Area School District

7th Grade Life Science Curriculum Map

Credits	Prerequisite	Weight
0.5 (Half year – 5 Periods per week)	None	1.0

Skills: Observations, Inferences, application, problem solving, laboratory technique.

Purpose: This course introduces students to the basic concepts of biology.

Description: General Science 7 is a course designed to introduce students to the structure and function of organisms and how those organisms interact in the environment. The course will include studies on the following topics: Cells, Cell Processes and Energy, Genetics, Modern Genetics, Classification, and Evolution.

Requirements: Homework, class work, quizzes, tests, laboratory activities, projects, class participation.

Skill Number	Skill	PA Anchor	PA Standard
Concept 1: Cells			
1.01	List the Characteristics all living things share	S7.B.1.1	3.3.7.B
1.02	Explain how scientists used controlled experiments to disprove spontaneous generation.	S7.B.1.1	3.3.7.B
1.03	Identify what all living things needs to survive	S7.B.1.1	3.3.7.B
1.04	State the three points of the cell theory	S7.B.1.1	3.3.7.B
1.05	Identify the cell wall, cell membrane, and nucleus, and describe their functions	S7.B.1.1	3.3.7.B
1.06	Compare bacterial cells with plant and animal cells	S7.B.1.1	3.3.7.B
1.07	Describe the role of specialized cells and many-celled organisms	S7.B.1.1	3.3.7.B
Concept 2: Cell Processes			
2.01	Describe the four main kinds of organic molecules in living things	S7.B.1.1	3.3.7.B
2.02	Explain how water is essential to the functioning of cells	S7.B.1.1	3.3.7.B
2.03	Describe the three methods by which materials move into and out of cells	S7.B.1.1	3.3.7.B
2.04	Compare passive transport to active transport	S7.B.1.1	3.3.7.B
2.05	Explain why cells are small	S7.B.1.1	3.3.7.B
2.06	Identify the events that take place during the three stages of the cell cycle	S7.B.1.1	3.3.7.B
2.07	Describe the structure of DNA	S7.B.1.1	3.3.7.B

Skill Number	Skill	PA Anchor	PA Standard
Concept 3: Genetics			
3.01	Describe Mendel's genetics experiments	S7.B.2.2	3.3.7.C
3.02	Identify factors that control the inheritance of traits in organisms	S7.B.2.2	3.3.7.C
3.03	Explain how geneticists use symbols to represent alleles	S7.B.2.2	3.3.7.C
3.04	Describe the principles of probability and how Mendel applied them to inheritance	S7.B.2.2	3.3.7.C
3.05	State how geneticists use Punnett squares	S7.B.2.2	3.3.7.C
3.06	Explain the meaning of the terms phenotype, genotype, homozygous, heterozygous, and codominance	S7.B.2.2	3.3.7.C
3.07	Describe chromosomes and their role in inheritance	S7.B.2.2	3.3.7.C
3.08	Identify and describe the events that occur during meiosis	S7.B.2.2	3.3.7.C
Concept 4: Modern Genetics			
4.01	Explain what multiple alleles are	S7.B.2.2	3.3.7.C
4.02	Explain why some human traits show a large variety of phenotypes	S7.B.2.2	3.3.7.C
4.03	Explain how environmental factors can alter the effects of a gene	S7.B.2.2	3.3.7.C
4.04	Identify what determines sex, and explain why some sex-linked traits are more common in males than in females	S7.B.2.2	3.3.7.C
4.05	Describe how geneticists use pedigrees	S7.B.2.2	3.3.7.C
4.06	Describe three ways in which people have developed organisms with desired traits	S7.B.2.2	3.3.7.C
4.07	Identify some uses of DNA fingerprinting	S7.B.2.2	3.3.7.C
4.08	State the goal of the Human Genome Project	S7.B.2.2	3.3.7.C

Skill Number	Skill	PA Anchor	PA Standard
Concept 5: Evolution			
5.01	State how Darwin explained variation among similar species	S7.B.2.1	3.3.7.D
5.02	Explain how natural selection leads to evolution, and explain the role of genes	S7.B.2.1	3.3.7.D
5.03	Describe how a new species form	S7.B.2.1	3.3.7.D
5.04	Describe how most fossils form	S7.B.2.1	3.3.7.D
5.05	Explain how a scientist determines a fossil's age	S7.B.2.1	3.3.7.D
5.06	Explain what fossils reveal	S7.B.2.1	3.3.7.D
5.07	Describe the events of the Geologic Time Scale	S7.B.2.1	3.3.7.D
5.08	Distinguish between gradualism and punctuated equilibria	S7.B.2.1	3.3.7.D
5.09	State evolution from modern-day organisms that scientists use to determine evolutionary relationships among groups	S7.B.2.1	3.3.7.D
5.10	Explain what a branching tree diagram is	S7.B.2.1	3.3.7.D
Concept 6: Classification			
6.01	Explain why scientists organize living things into groups	S7.B.1.1	3.3.7.A
6.02	Describe early classification used by scientists	S7.B.1.1	3.3.7.A
6.03	Name the seven levels of classification used by scientists	S7.B.1.1	3.3.7.A
6.04	Explain the relationship between classification and evolution	S7.B.1.1	3.3.7.A
6.05	Name and describe the six kingdoms into which organisms are grouped	S7.B.1.1	3.3.7.A