7th Grade Life Science - Course Outline

Science is a required course for all 7th grade students. It is an introduction to broad field life sciences. The course presents the students with an introduction to scientific inquiry, the study of the structure and function of cells; the structure and function of some human body systems and the study of ecology and the environment.

Topics Covered WI State Standard

The Nature of Science: Scientific Explanations A, B, C, G

NOS 1 Understanding Science

What is scientific inquiry?

NOS 2 Measurement and Scientific Tools

What are the basic tools a scientific uses?

What are the important lab safety rules that need to followed?

Classifying and Exploring Life A, F

1.1 Characteristics of Life

What characteristics of life do all living things share?

1.3 Exploring Life

How did microscopes change our ideas about living things?

What are the types of microscopes, and how do they compare?

Cell Structure and Function A, F

2.1 Cells and Life

How did scientists' understanding of cells develop?

What is the cell theory?

What basic substances make up a cell?

What is the structure and function of DNA?

2.2 The Cell

How are prokaryotic and eukaryotic cells similar, and how are they different?

What do the structures in a cell do?

What is the difference between a plant and an animal cell?

How do unicellular and multicellular organisms differ? (3.2)

How does cell differentiation lead to the organization within a multicellular organism? (3.2)

2.3 Moving Cellular Material

How does materials enter and leave cells?

How does cell size affect the transport of material?

2.3 Cells and Energy (cell respiration, fermentation, and photosynthesis)

How does a cell obtain energy?

How do some cells make food molecules?

From a Cell to an Organism B, F

3.1 The Cell Cycle and Cell Division

What are the phases of the cell cycle?

Why is the result of the cell cycle important.

Genetics F

5.1 Mendel and His Peas

What did Mendel conclude about inherited traits?

How do dominant and recessive factors interact?

5.2 Understanding Inheritance

What determines the expression of traits?

How can inheritance be modeled?

Structure and Movement B, F, G, H

14.1 The Skeletal System

14.2 The Muscular System

14.3 The Skin

What do the systems do?

How do the organs of each system work together?

How do the organs of each system interact with other body systems?

Digestion B, F, G, H

15.2 The Digestive System

What does the digestive system do?

How do the parts of the digestive system work together?

How does the digestive system interact with other body systems?

Respiration and Circulation B, F, G, H

16.1 The Respiratory System

What does the respiratory system do?

How do the parts of the respiratory system work together?

How does the respiratory system interact with other body systems?

16.2 The Circulatory System

What does the circulatory system do?

How do the parts of the circulatory system work together?

Doe does the circulatory system interact with other body systems?

16.3 Blood

What does blood do?

How do the parts of the parts of blood differ?

Matter and Energy in the Environment A, F

20.1 Abiotic Factors

What are the nonliving parts of an environment?

20.2 Cycles of Matter

How does matter move in ecosystems?

20.3 Energy in Ecosystems

How does energy move in ecosystems?

How is the movement of energy in an ecosystem modeled?

Populations and Communities A, F

21.1 Populations

What defines a population?

21.3 What defines a community?

How do the populations in a community interact?

Human Growth and Development

- Abstinence from sexual activity as the preferred choice of behavior for unmarried pupils
- Abstinence from sexual activity before marriage is the only reliable way to prevent pregnancy and sexually transmitted diseases
- Medically accurate information about human papilloma virus (HPV), human immunodeficiency virus (HIV) , and acquired immunodeficiency syndrome (AIDS)
- Pregnancy, prenatal development and childbirth
- Reproductive structure and function, to include puberty
- Parental responsibility and the socio-economic benefits of marriage
  (taken from WI State Statute 118.019 as of May 2012)