

7th Grade Life Science – 1st Semester

Teacher: Bridget Severe, Room 103

School Phone: 588-2262 Ext. 26

Home Phone: 589-3051

E-mail: Bridseve@mackayschools.org

Mrs. Severe's Website: www.mackayhs.weebly.com

Course Description

Life science standards emphasize a more complex understanding of change, cycles, patterns, and relationships in the living world. Students will explore cellular organization, classification of organisms, the dynamics of relationships among organisms, and change as a result of the transmissions of genetic information from generation to generation. The scientific area defines the idea that explanations of nature are developed and tested through the scientific method. Logical thinking and inquiry skills at this level include organization and mathematical analysis of data, variable manipulation, and identification of an experimental error.

Common Core Standards

Students will:

1. Understand the relationship between science and technology
2. Understand the importance of natural resources and the need to manage and conserve them
3. Understand systems, order, and organization
4. Understand concepts and processes of evidence, models, and explanation
5. Understand constancy, change, and measurement
6. Understand that the Theory of Evolution is a process that relates to the gradual changes in the universe and of equilibrium as a physical state.
7. Understand the relationship between matter and energy in living systems
8. Understand the cell is the basic of form and function for all living things
9. Understand scientific inquiry and develop critical thinking skills
10. Understand that interpersonal relationships are important in scientific endeavors
11. Understand the Theory of Biological Evolution

Instructional Materials

Textbook: Holt Science & Technology Life Science, videos, and websites.

Class Expectations

- Be Prepared – always have your pencil, paper, notebook, book(s), and completed assignments – **Each day an assignment is late your grade will be reduced by 10%.**
I **DO NOT** give ZEROS (0), if you do not turn in an assignment you will be given an incomplete until it is finished. This is your education, your future, you are expected to complete each assignment.
- Be Respectful – to teacher, classmates, and visitors; respect all school rules (dress code, etc...); raise hand before speaking; respect others' opinions.
- Be Actively Engaged – pay attention, participate, take notes, ask questions, and provide answers.
- Take Care of the textbooks given to you, desks you sit in, items you borrow from others and any other class materials presented.
- Be Responsible for Your Actions
- THIS CLASS WILL BE PROJECT ORIENTED AND HANDS ON LEARNING; I EXPECT THAT YOU WILL DO YOUR PART IN MAKING THIS CLASS SUCCESSFUL.

Lab Expectations and Safety

Lab work is important to science! Not only are labs a part of your grade, but labs also contribute to your understanding of the concepts presented. When you participate in a lab, SAFETY is the number one priority. I expect that you will behave or your lab privileges will be taken away from you, not only will this be boring, but it will

affect your grade – greatly!!

Class Materials Needed

All your writing will be in pencil or typed and one notebook specifically for Life Science.

Tentative Units with Instructional Dates

Quarter 1

<ul style="list-style-type: none">▪ Week 1 – Chapter 1, The World of Life Science, Vocabulary, “Does it all Add up?” Activity, Science in Action, Chapter 1 Assessment	<p>Standard: Understand the relationship between science and technology.</p> <p>Objectives: List three ways life science is beneficial to living things, Describe the scientific method, compare the ways scientists use hypothesis, theory, and law, and describe three tools life scientists use to observe organisms.</p>
<ul style="list-style-type: none">▪ Week 2 – Chapter 2, It’s Alive or is it?, Vocabulary, Inquiry Lab, Chapter 2 Assessment	<p>Standard: Understand scientific inquiry and develop critical thinking skills.</p> <p>Objectives: Describe the six characteristics of living things, explain why organisms need food, water, air, and shelter, and describe the chemical building blocks of cells.</p>
<ul style="list-style-type: none">▪ Week 3 – Chapter 3, Cells: The Basic Units of Life, Vocabulary, “Elephant-Sized Amoebas?” Activity, Science in Action	<p>Standard: Understand the cell is the basic of form and function for all living things.</p> <p>Objectives: State the parts of the cell theory, describe the parts of the cell, and explain the difference between prokaryotic and eukaryotic cells.</p>
<ul style="list-style-type: none">▪ Week 4 – Chapter 3, Cells: The Basic Units of Life, Vocabulary, “Elephant-Sized Amoebas?” Activity, Science in Action, Chapter 3 Assessment	<p>Standard: Understand systems, order, and organization.</p> <p>Objectives: Explain the function of each part of a eukaryotic cell, list three advantages of being multicellular, and describe the four levels of organization in living things.</p>
<ul style="list-style-type: none">▪ Week 5 – Chapter 1-3 Exam, Chapter 4, The Cell in Action, Vocabulary, “The Perfect Taters Mystery” Activity, Science in Action	<p>Standard: Understand the cell is the basic of form and function for all living things.</p> <p>Objectives: Explain the process of diffusion, compare active and passive transport, and describe photosynthesis and cellular respiration.</p>
<ul style="list-style-type: none">▪ Week 6 – Chapter 4, The Cell in Action, Vocabulary, “The Perfect Taters Mystery” Activity, Science in Action, Chapter 4 Assessment	<p>Standard: Understand the relationship between matter and energy in living systems.</p> <p>Objectives: Explain how cells produce more cells, describe the process of mitosis, and explain how cell division differs in animals and plants.</p>
<ul style="list-style-type: none">▪ Week 7 – Chapter 5, Heredity, Vocabulary, “Bug Builders Inc” Activity, Science in Action	<p>Standard: Understand scientific inquiry and develop critical thinking skills.</p> <p>Objectives: Explain the relationship between traits and heredity, describe the experiments of Gregor Mendel, and explain how genes and alleles are related to genotype and phenotype.</p>
<ul style="list-style-type: none">▪ Week 8 – Chapter 5, Heredity, Punnett Square activity, Chapter 5 Assessment,	<p>Standard: Understand concepts and processes of evidence, models, and explanation.</p> <p>Objectives: Use the information in a Punnett square, explain the difference between mitosis and meiosis, and describe how chromosomes determine sex.</p>
<ul style="list-style-type: none">▪ Week 9 – Chapter 6, Genes and DNA, Vocabulary, “Base-Pair Basics” Activity, DNA Internet Activity	<p>Standard: Understand scientific inquiry and develop critical thinking skills.</p> <p>Objectives: List three important events that led to understanding the structure of DNA, describe the basic structure of a DNA molecule, and explain the relationship</p>

between DNA, genes, and proteins.

Quarter 2

<ul style="list-style-type: none"> ▪ Week 10 – Chapter 6, Genes and DNA, Vocabulary, “Creating a DNA candy molecule” Activity, Chapter 6 Exam 	<p>Standard: Understand that the Theory of Evolution is a process that relates to the gradual changes in the universe and of equilibrium as a physical state.</p> <p>Objectives: Outline the basic steps in making protein, describe three types of mutations, and provide an example of a gene mutation.</p>
<ul style="list-style-type: none"> ▪ Week 11 – Chapter 7, The Evolution of Living Things”, information week! 	<p>Standard: Understand systems, order, and organization.</p> <p>Objectives: Identify two kinds of evidence that show that organisms have evolved and explain how comparing organisms can provide evidence that they have ancestors in common.</p>
<ul style="list-style-type: none"> ▪ Week 12 – Chapter 7, The Evolution of Living Things, “Survival of the Chocolates” Activity, Chapter 7 Assessment, Chapter 6 & 7 Exam 	<p>Standard: Understand that interpersonal relationships are important in scientific endeavors.</p> <p>Objectives: Describe the four parts of Darwin’s theory of evolution by natural selection, give three examples of natural selection in action, and outline the process of speciation.</p>
<ul style="list-style-type: none"> ▪ Week 13 – Chapter 8, The History of Life on Earth, Geological time scale activity 	<p>Standard: Understand the Theory of Biological Evolution.</p> <p>Objectives: Explain how fossils can be formed and how their age can be estimated, describe the geologic time scale and the way that scientist use it, and compare two ways that conditions for life on Earth have changed over time.</p>
<ul style="list-style-type: none"> ▪ Week 14 – Chapter 8, The History of Life on Earth, “Mystery Footprints” Activity, Science in Action, Non-Fiction Book, Chapter 8 Assessment 	<p>Standard: Understand the relationship between matter and energy in living systems.</p> <p>Objectives: Describe the types of organisms that arose during the four major division of the geologic time scale, describe two characteristics that all primates share, and describe three major groups of hominids.</p>
<ul style="list-style-type: none"> ▪ Week 15 – Chapter 9, Classification, “Classification” Song, Science in Action 	<p>Standard: Understand systems, order, and organization.</p> <p>Objectives: Explain how to classify organisms, list the seven levels of classification, and describe how dichotomous keys help in identifying organisms.</p>
<ul style="list-style-type: none"> ▪ Week 16 – Chapter 9, Classification, “Shape Island Activity”, Chapter 9 Assessment 	<p>Standard: Understand concepts and processes of evidence, models, and explanation.</p> <p>Objectives: Explain how classification schemes for kingdoms developed as greater numbers of different organism became known and describe each of the six kingdoms.</p>
<ul style="list-style-type: none"> ▪ Week 17 – Life Science Culminating Project Presentations; Review for Final Exam 	<p>Standard: Understand scientific inquiry and develop critical thinking skills.</p> <p>Objectives: Synthesize the information from chapters 1-9 and demonstrate the information retained.</p>
<ul style="list-style-type: none"> ▪ Week 18 – Semester Final Exam 	

Assessment/Tests

See Instructional Units/Dates

Grading Procedures

- Each assignment, assessment, project will be worth individual points.
- Homework will be due daily. Full points will not be given if the assignment is late.
- All assessments must be taken during the class period. If absent, the student should arrange a make-up time before or after school.
- Grades will be calculated by dividing the total points earned by a student by the total points possible.

