



Course Syllabus Investigations in Science 7




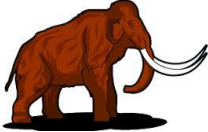


Loiaderman Middle School

OVERVIEW

Welcome to Investigations in Science for grade 7. This curriculum is a unique problem/project based curriculum. The learning is student-centered with the teacher acting as a facilitator. Instruction is woven around one main problem within each unit of study, and students will be presented a request for proposals (RFP) at the start of each unit. Students engage in science, technology, engineering and mathematics (STEM) in order to propose solutions to identified problems. They will then use a design-folio throughout the quarter to research, develop, design and evaluate their proposal.

UNITS OF STUDY

Unit	Title	Content Focus
1	<p><i>Cellular Structure and Processes</i></p> 	<p>Students will research a process for growing plants without the use of soil called hydroponics. Students will investigate a variety of different systems and growing mediums for raising plants and will analyze such variables as growth rate and food production. Students will learn that plants grown using this method take in oxygen and nutrients at a quicker pace and use less energy to absorb them. Plants will be used to introduce the structure and function of living organisms, and students will learn about the characteristics of living things, parts of the cell, and cellular processes. Students will also learn what materials are required by living things, how the materials are delivered, and how these materials sustain life.</p>
2	<p><i>Matter and Energy Flow in Organism</i></p> 	<p>Students will study the body systems of organisms and explore how the interactions of those systems affect overall functions. Students will learn about the levels of organization within an organism and the contribution cells provide a system as the basic building blocks of life. Students will explore how matter and energy are processed by organisms to build, maintain, and repair themselves. Students will relate structure and function of body systems to nutritional requirements and disease prevention.</p>
3	<p><i>Inheritance and Variation of Traits</i></p> 	<p>Students will study the principles of heredity and genetics. They will learn how organisms reproduce and transfer their genetic information to their offspring. Students will study how characteristics get passed on from generation to generation and research several genetic disorders that affect human offspring. Students will use biotechnical processes to explore the genetic characteristics of organisms. Students will conduct a DNA extraction and a microarray will be performed as a way of checking the genotypes of the offspring.</p>
4	<p><i>Earth's History and Evolution</i></p> 	<p>Students will study Earth's history, geological time, and explore how organisms have evolved. Students will examine the fossil record and construct explanations from mass extinctions. Students will explore the concepts of natural selection and adaption and will learn that traits of an organism can change as a result of environmental conditions or a need for survival. Student will explore the similarities between organisms and use biotechnical processes, such as DNA fingerprinting, as means of identification.</p>

GRADING & Reporting

Students' academic grades are based on individual academic achievement. Quarterly grades will be assessed in three categories (Summative, Formative, and Learning Skills/Practice). Both individual assignments and final grades will be determined using a scale of: A: 90% - 100%, B: 80% - 89%, C: 70% - 79%, D: 60% - 69%, E: 59% - 50%. We will use a variety of assessment types to assess student learning.

Category	Weight	Examples
Summative Assessments	10%	End of unit tests, culminating projects, and culminating labs
Formative Assessments	80%	labs, quizzes, reading and writing assignments, journal entries, warm-ups, exit cards, quizzes, class work, homework evaluated for learning
Practice/ Prep Homework	10%	Any assignment (textbook assignments and/or worksheets) assigned for practice or preparation for instruction.

Reassessment of Formative Work

- Assessed tasks such as quizzes, non-unit tests, etc... may be retaken by students to receive a higher grade. Reassessments will be determined based on teacher discretion. When a teacher offers a reassessment, all students may be reassessed, regardless of grade on the original task/assessment, if they meet the following requirements: complete the original task or assessment, complete required assignments, and complete re-teaching/relearning activities, as determined by the teacher.
- Reteaching and reassessment opportunities are available during lunch and may be available during lunch by prior arrangement with your teacher. Students need to remember to ask for a lunch pass.
- The reassessment grade replaces the original grade even if the reassessed grade is lower.
- Assessments may be reassessed partially, entirely, or in a different format.
- Summative and/or End of Unit Assessments may not be re-taken.

Late Assignments and/or Missing Work

- A **due date** is the date students are expected to submit an assignment. Any achievement assignment turned in after the due date will be penalized one letter grade or 10%.
- A **deadline** is the last date the teacher will accept an assignment (or the date the teacher returns graded assignments). Achievement assignments turned in after the deadline date will not earn credit (0%).
- Any homework/classwork assignment that is provided for practice or preparation must be completed on time for full credit. Any late or incomplete homework assignments will not receive a grade higher than 50%.
- By the end of the unit, students cannot complete and submit late homework assignments once the summative assessment has been administered.
- All due dates and deadline dates will be announced and will most often be the same date.
- Students who have excused absences have a responsibility to make up missed assignments. Teachers will assist students in making up their assignments and set appropriate deadlines.
- There is no extra credit.

Learning Skills Grades:

In addition to the academic grade, students will receive *Learning Skills Grades* each quarter as well. Learning skills grades will assess students' Participation and Assignment Completion throughout the course. Students may earn the following grades for each of the aforementioned categories:

C: Consistently **O:** Often **S:** Sometimes **R:** Rarely **NI:** Not Enough Information

Communication and EDLINE

- One of the most useful ways we have to communicate is your child's Agenda Book. Students will be required to keep track of assignments (due dates and deadlines) in their Agenda Book.
- Additionally, students and parents should visit Edline daily for posted assignments, grade updates, and progress reports (www.edline.net). Students are expected to know their grades, and what, if any, work is missing at all times. Other forms of communication include interims, report cards, and scheduled conferences. There should be no surprises about grades to students or parents.

Suggested Student Organizational Tools and Supplies (recommended supply list)

There will be no fees for this course.

- 3-ringed binder (Section for Science)
- Calculator (inexpensive one to be kept in binder)
- Pencils and Erasers
- Notebook paper
- Colored pencils
- Pens (black or blue)
- Highlighter



Safety in Science Class

- All science students will be required to follow safety procedures as designated by the MCPS safety contract. Failure to follow the safety guidelines may result in dismissal from the science laboratory for the remainder of that class period.