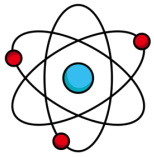


Welcome to Investigations in Physical Science!

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Welcome to Investigations in Physical Science for grade 8. This NGSS-aligned curriculum uses phenomena at the beginning of each unit and within lessons to spark curiosity and help make meaning of the world around us. The learning is student-centered with the teacher acting as a facilitator. Students engage in science and engineering practices as they propose solutions to identified problems.

UNITS OF STUDY

Unit and Title	*Content Focus*
1 *Matter and Its Interactions* 	Students define and measure physical properties of matter before exploring how substances combine or react to make new substances through chemical changes. Students will predict and describe changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed. Students will analyze the structure of molecular models in order to determine the chemical formula, the elements they contain, and the correct number of atoms. Students will explore the conservation of mass by observing and formulating chemical reactions. Students will explore how scientists use natural resources to design and produce synthetic materials with different chemical properties from their source materials, and explore the impact of those materials on society.
2 *Energy, Forces, and Motion* 	Energy, Forces, and Motion encompasses the mechanical branch of physics, studying the nature of forces and its impact on the motion of objects. Students will engage in hands-on activities to determine the relationship(s) between forces, motion, and speed on objects. Students will explore both contact and non-contact forces. Students will measure and calculate speed, velocity, and acceleration. Newton's Laws of Motion and potential and kinetic energy are introduced and applied to the culminating water bottle rocket project.
3 *A Voyage Into Space* 	Students will explore the celestial bodies in space including the forces on them and how they have predictable patterns of movement. These patterns, which are explainable by gravitational forces and conservation laws, in turn explain many large-scale phenomena observed on the Earth, moon, and other planets. Earth and its solar system are part of the Milky Way galaxy, which is one of many galaxies in the universe.
4 *Wave Energy and Attractive Forces* 	Students build on the concept of non contact forces from the first unit with special focus on magnetism and electricity. Static electricity, electromagnetism, and energy transformations are explored through simulations and hands-on learning. Students will describe the cause and effect relationship for the factors that affect magnetic forces and will predict and analyze the strength of electric and magnetic forces. Students will explore how light and sound behave. Students will describe the relationship between various properties of waves such as frequency, wavelength, amplitude, and energy.

GRADING & REPORTING Policy

Category	Weight	Examples
All Tasks & Assessments	90%	End of unit tests, culminating projects, and culminating labs labs, quizzes, reading and writing assignments, journal entries, warm-ups, exit cards, quizzes, class work, homework evaluated for learning
HW and Practice/Prep	10%	Any assignment (textbook assignments and/or worksheets) assigned for practice or preparation for instruction.

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.

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 TAP period and may be available during lunch or before or after school by prior arrangement with your teacher.
- 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%). Deadlines- Max 10 days after the due date.
- Any homework/classwork assignment that is provided for practice or preparation must be completed on time for full credit.
- All due dates and deadline dates are announced on the assignment page in our canvas classroom.
- 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.

RECOMMENDED SUPPLY LIST

1 notebook for taking notes in science class

SAFETY

All science students will be required to follow safety procedures as designated by the MCPS safety contract. This will be discussed in class on the first week of school. Failure to follow the safety guidelines may result in removal from the science lab investigation for the remainder of that class period.

We look forward to a great year in Investigations in Science 8! Please contact us with any questions or concerns you may have. We are easiest to reach by email during the day from 7:30am - 4pm. Thank you!

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