

Fillmore Central Middle School
Course Syllabus
Elevate Science Grade 7, Course 2

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COURSE DESCRIPTION

Students make sense of phenomena as they explore the disciplinary core ideas through the lens of crosscutting concepts, such as systems and system models, cause and effect, and matter and energy. Course 2 is a phenomena-based science curriculum immersing students in the inquiry process. This is science elevated for problem-solving, critical thinking, and the NGSS performance expectations. It is based on the 5E learning cycle, the CISD Instructional Model (Connect, Investigate, Synthesize, Demonstrate) empowers students to become more self-directed, curious, and accountable. Each topic seamlessly integrates the science and engineering practices with engineering design principles as students experience a variety of hands-on investigations.

Students continue their study of the biosphere. Investigations begin at the microscopic level with systems models and expand with structure and function in the life sciences and stability and change in the Earth's systems. Students return to the concepts of energy in the study of waves and electromagnetic radiation, ending with the application of these core ideas in information technology.

Students consider systems and how they interact as they investigate cell function and cellular processes as well as explore the human body as a system model, driven by the flow of energy and the cycling of matter. This leads to the study of reproduction and the plant and animal structures that support it. Students consider stability and change as core concepts in the biosphere. They examine factors that affect living things and the environments they live in and connect that to the geosphere as they investigate the use of natural resources and consider the human impact on the environment. The study of energy begun in Grade 6 is extended as students investigate another form of energy leading to the introduction of forces found in two common student experiences, which they apply as they investigate innovations in communication technologies.

Classroom Expectations - FOR MR. MOSES

1. Your appropriate supplies will be expected and with you upon entering the room each day. If the class has already begun you will have to wait until after class to get your assignment and borrow what you need in class. This includes your computer.
2. NO FOOD, DRINKS, OR CANDY. Gum will be allowed as long as it is not heard or seen.
3. Be in your seat ready to go--when the door is shut, class is to get started.
4. Restrooms should be used during break times or between classes. EMERGENCIES ONLY.
5. Be safe, responsible, and respectful to everyone, and DWR- Do What's Right- —if I ask you to stop what you are doing—stop!

TEXT

This textbook is very different from most- it's meant for students to write in it. Therefore, it is a record of learning. Parents look through lessons your child has completed recently, and be sure to ask lots of questions. One of the best ways for students to check on their learning is to explain it to someone else. Each student will be provided with an Elevate Science consumable textbook for which they will be responsible. Students will not be provided with an additional textbook should they lose their copy. Students will be able to keep their textbook in the classroom, but if they choose to take it home they are responsible for bringing the textbook to class upon their return. Students will be able to access their textbooks online through Canvas.

SUPPLEMENTARY RESOURCES

1. IXL

Username:

Password:

2. Canvas

Username:

Password

Discipline

Every student has a RIGHT to learn, and I will NOT allow any student to take away another student's right. A variety of consequences will be used should a student choose to disrupt the learning environment. The consequence of their action will vary depending on the degree and regularity of occurrence.

Electronic Devices

****ZERO-TOLERANCE POLICY****

Electronic devices will NOT be allowed in my classroom. If there is an emergency that a parent needs to be able to contact their student for, they need to arrange that with the office prior to class. If I see a phone I WILL take it.

Grading:

A student's grade will be determined by the number of points earned out of the total points available within two categories of assessments (Formative & Summative). The total of Summative Assessments (Tests, Projects, Presentations) will be equal to 80% of the total grade. The total of Formative Assessments (Practice work & Daily Tasks) will equal 20% of the total grade. For any questions refer to the District's Grading for Learning policy.

****Student progress may be checked online. Contact the Middle School office if you are unsure how to do this****

Grading Scale	
100 - 93%	A
92 - 89%	B+
88 - 85%	B
84 - 81%	C+
80 - 77%	C
76 - 73%	D+
72 - 69%	D
68 - 0%	F

MISSING/LATE ASSIGNMENTS:

Students unable to complete formative work on time will be assigned an INCOMPLETE for their missing work. Students will have the grading period (9-week terms) to submit any missing formative or summative work and failure to do so will result in a zero entered when the grading period has been completed.

SUMMATIVE RETAKE POLICY:

Students will be permitted ONE retake for any summative assessment (Presentations are excluded from this policy). Standards for retakes shall include

1. Remediation required and designated by Mr. Moses
2. An incomplete has not been recorded for the assessment (Re-takes are not allowed for incomplete tasks.)
3. The retake assessment will be a different assessment than the original AND the last attempt will be the final recorded grade.

Course Competencies/ Learning Objectives

Students who successfully complete Elevate Science Grade 7, Course 2 will be competent in the following areas:

- TSW be able to conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.
- TSW be able to develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.
- TSW be able to use arguments supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.
- TSW be able to gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.
- TSW be able to construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and the flow of energy into and out of organisms.
- TSW be able to develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.
- TSW be able to analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in the ecosystem.
- TSW be able to develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.
- TSW be able to construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.
- TSW be able to construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.
- TSW be able to evaluate competing design solutions for maintaining biodiversity and ecosystem services.
- TSW be able to use arguments based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.
- TSW be able to construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.
- TSW be able to develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.
- TSW be able to construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.
- TSW be able to use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.
- TSW be able to construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.
- TSW be able to apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.
- TSW be able to construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.
- TSW be able to ask questions about data to determine the factors that affect the strength of electric and magnetic forces.
- TSW be able to conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.
- TSW be able to construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.
- TSW be able to develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.
- TSW be able to use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.
- TSW be able to develop and use a model to describe how waves are reflected, absorbed, or transmitted through various materials.

- TSW be able to integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.
- TSW be able to define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
- TSW be able to evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
- TSW be able to analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.
- TSW be able to develop a model to generate data for interactive testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.