Marshall Public Schools

Grading for Learning Rubric

The purpose of grading is to communicate the student's performance in relation to the learning goals and standards.

Grading Scale

0 = No Evidence No evidence of conceptual understanding.	**1 = Needs Improvement** Evidence of minimal understanding, not grasping the concepts even with teacher assistance.	**2 = Progressing** Evidence shows growth; progressing toward the standard/s.	**3 = Proficient** Evidence demonstrates understanding and application of the standard/s.	**4 = Exemplary** Evidence demonstrates a deeper understanding of the standard/s.

Course Title: Physical Science

Grade Level(s): 9-12

Highlighted areas - for each standard, students are expected to progress through their skills from left to right. The highlighted regions indicate the progress we would expect at this point in the semester. Students above that level are doing great! Students whose scores are below that level are encouraged to seek additional time with their teacher during class or flex periods to improve their skills. As always, we will provide students with multiple opportunities to demonstrate their understanding. Please speak with your child's teacher if you have questions!

Standards with no highlighted boxes have yet to be assessed multiple times in this course.

Standards whose boxes are grayed out are from previous units.

Standard #1: Questioning

Needs Improvement	Progressing	Proficient	Exemplary
I can ask clarifying questions based on my observations.	I can ask questions that seek additional information or clarify a relationship.	I can ask questions that draw connections between different aspects of a topic, or which improve a model.	I can ask questions that: a) lead to investigation development or provide alternate data interpretation b) draw connections to different aspects of science or to other content areas

Standard #2: Investigating

Needs Improvement	Progressing	Proficient	Exemplary
I can carry out prescribed procedures to acquire data and/or information.	I can plan and conduct an investigation to produce data. I can identify variables in my investigation.	I can manipulate and control variables appropriately in my planned investigation; the data produced is used to answer my question(s).	I can plan and conduct an investigation to produce data/research to serve as the basis of evidence to answer my questions or solve a problem. I can provide a sound rationale for the choice in the manipulated variables.

Standard #3: Modeling * Models include: diagrams, drawings, physical replicas, mathematical representations, analogies, and computer simulations

Needs Improvement	Progressing	Proficient	Exemplary
I can use a model to explain a concept.	I can use a model to explain relationships between concepts.	I can develop or evaluate a model based on evidence to illustrate relationships between concepts. I can design a test of the model to determine its reliability.	I can develop/revise/use a model based on evidence to predict relationships between components of a system, or apply my own model as a solution to solve a problem.

Standard #4: Analyzing and Interpreting Data

Needs Improvement	Progressing	Proficient	Exemplary
I can analyze data quality (qualitative or quantitative) using tools, technologies, and/or models. I can identify general trends in variables.	I can determine the relationship between variables (eg: linear, exponential). I can compare and contrast various types of data (eg: self-generated, published). I can identify possible sources of error.	I can mathematically describe the relationship between variables (eg: calculate rates of change, construct equations that relate variables). I can evaluate reliability of data, consider limitations of data analysis, or be able to distinguish between causal and correlational relationships.	I can evaluate the impact of new data on the working explanations and/or model of a proposed process.

Standard #5: Constructing and Supporting Explanations

Needs Improvement	Progressing	Proficient	Exemplary
I can make a claim regarding general trends in variables.	I can make a claim regarding the relationship between variables and support it with credible evidence.	I can explain results of the investigation by applying scientific reasoning, theory or models. I provide counter-arguments or explore other possible conclusions.	I can refine the investigation, design a solution, make connections, or apply the findings. I can critically evaluate counter-arguments or other possible conclusions.

Standard #6: Evaluating and Communicating Information

Needs Improvement	Progressing	Proficient	Exemplary
I can obtain and integrate accurate information from a reliable scientific resource, and communicate this information effectively. All sources (research and images) are cited in APA format.	I can obtain, integrate, and compare accurate information from multiple reliable scientific resources, and communicate this information effectively. All sources (research and images) are cited in APA format.	I can gather accurate information from multiple reliable scientific resources, and assess the validity/reliability while communicating the information effectively. . All sources (research and images) are cited in APA format.	I can make accurate connections across different aspects of science based upon credible literature, and communicate this information effectively in multiple formats. All sources (research and images) are cited in APA format.

Standard #7: Content Knowledge

Needs Improvement	Progressing	Proficient	Exemplary
Unit 1: Fossil Fuels - I know that fossil fuels are found in the ground	- I can explain how fossil fuels (oil and coal) are formed, removed from the ground, and used to generate energy	- I can explain how fossil fuels (oil and coal) are formed, removed from the ground, and used to generate energy	- I can relate fossil fuels refining to characteristics like boiling point - I can describe the energy and matter connections between photosynthesis and fossil fuels

		- I can describe the role of oil and its combustion in the carbon cycle.	
Unit 2: Alternative Energy - I can identify a current problem in the world that engineering can solve: I can explain the following: +where is this issue a problem +why does this problem need solving	- I can create/describe a prototype that will address the problem and offer a solution. -I can explain the following: +what is the science behind my prototype (how does it work)	- I can troubleshoot my prototype and refine its design. - I can explain the science behind my project in great detail (generators: how electrons flow, water purification: how the impurities in water impact human health, ethanol producers: how starches are broken down for yeast to consume)	- I can connect my project to a real-world consumer - I can consult with a real-world expert to improve my understanding or prototype
Unit 3: The Physics of Energy and Motion I can describe Newton's 3 laws of motion	I can appropriately identify inertia, unbalanced forces, and acceleration.	I can analyze a scenario and calculate force and motion.	I can predict forces and motion in a given problem.
Unit 4: Chemistry I can identify subatomic parts of an atom and their properties.	I can relate properties of elements/molecules to observations of nature. Ex: Water molecules - I can explain how hydrogen bonding impacts water molecules' behavior Soap molecules - I can explain how having both hydrophobic and hydrophilic regions assists in breaking apart oil.	I can use the periodic table to determine properties of elements.	