



Marietta City Schools

District Unit Planner

Everything on the unit planner must be included on the unit curriculum approval statement.

Science Grade 6 Advanced Studies

Unit title	Capstone	MYP year	1	Unit duration (hrs)	25 Hours
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Mastering Content and Skills through INQUIRY (Establishing the purpose of the Unit): *What will students learn?*

GSE Standards

Standards

S6E6. Obtain, evaluate, and communicate information about the uses and conservation of various natural resources and how they impact the Earth.

- b. Design and evaluate solutions for sustaining the quality and supply of natural resources such as water, soil, and air.
- c. Construct an argument evaluating contributions to the rise in global temperatures over the past century. (Clarification statement: Tables, graphs, and maps of global and regional temperatures, and atmospheric levels of greenhouse gasses such as carbon dioxide and methane, should be used as sources of evidence.)

Concepts/Skills to be Mastered by Students

- Creating a project topic, completing a project, and presenting project

Key Vocabulary: (KNOWLEDGE & SKILLS)

Sustainability-Centered Decisions, Sustainable Development Goals through the United Nations,

Year-Long Anchoring Phenomena: (LEARNING PROCESS)

Earth is the only planet in our solar system that is able to support life.

Unit Phenomena (LEARNING PROCESS)

How can I use the United Nations Sustainable Development Goals to improve myself, school, and/or community?

Key concept	Related concept(s)	Global context
Relationships (MYP) Relationships are the connections and associations between properties, objects, people and ideas - including the human community's connections with the world in which we live. Any change in a relationship brings consequences.	Environment (MYP)	Scientific and Technical Innovation Students will explore the natural world and its laws; the interaction between people and the natural world; how humans use their understanding of scientific principles; the impact of scientific and technological advances on communities and environments; the impact of

		environments on human activity; how humans adapt environments to their needs.
Statement of inquiry		
Scientific and technological advancements have allowed the support of Sustainable Development Goals.		
Inquiry questions		
<p>Factual— What is a sustainability-centered decision? What are the Sustainable Development Goals through the United Nations?</p> <p>Conceptual— How can our students creatively support environmental/global sustainability efforts near their home, school, or throughout the community?</p> <p>Debatable- What can our current students begin that future students can sustain?</p>		
MYP Objectives	Assessment Tasks	
<i>What specific MYP objectives will be addressed during this unit?</i>	<i>Relationship between summative assessment task(s) and statement of inquiry:</i>	<i>List of common formative and summative assessments.</i>
<p>Criterion A: Knowing and Understanding</p> <p>ii. Apply scientific knowledge and understanding to solve problems set in familiar situations and suggest solutions to problems set in unfamiliar situations</p> <p>iii. Interpret information to make scientifically supported judgments</p> <p>Criterion C: Processing and Evaluating</p>	<p>Students will plan and implement a capstone project based on the Sustainable Development Goals.</p> <p>Students will use the Honors Science 6- Capstone Experience Deadlines to stay on track while completing their project.</p> <p>Students will reflect on and evaluate their project with the MYP Design cycle and reflection task.</p>	<p><u>Formative Assessment(s):</u></p> <ul style="list-style-type: none"> • Action Plan Proposal Template Part A • Action Plan Proposal Template Part B-D • Action Plan Proposal Template Part E-G <p><u>Summative Assessment(s):</u></p> <p>Capstone project- MYP Design Cycle</p> <p>Capstone presentation</p> <p>Capstone Reflection</p>

<p>i. present collected and transformed data</p> <p>ii. interpret data and outline results using scientific reasoning</p> <p>iii. discuss the validity of a prediction based on the outcome of the scientific investigation</p> <p>iv. discuss the validity of the method</p> <p>v. describe improvements or extensions to the method</p> <p>Criterion D: Reflecting on the Impacts of Science</p> <p>iii. apply scientific language effectively</p> <p>outcome of the scientific investigation</p> <p>iv. discuss the validity of the method</p> <p>v. describe improvements or extensions to the method</p> <p>Criterion D: Reflecting on the Impacts of Science</p> <p>iii. apply scientific language effectively</p>		
Approaches to learning (ATL)		
<p>Category: Thinking</p> <p>Cluster: Critical-Thinking</p> <p>Skill Indicator: Use models and simulations to explore complex systems and issues. Gather and organize relevant information to formulate an argument.</p>		

Learning Experiences

Add additional rows below as needed.

Objective or Content	Learning Experiences	Personalized Learning and Differentiation
Students develop rationale for their capstone project. Students understand if the topic and rationale are viable.	Part 1: Action Plan Proposal Template Part A Students will create the rationale for their final capstone project idea.	Topic Choice Presentation Mode Individual or Partner work Small group instruction as needed
Students investigate and research capstone topics to develop an action plan.	Part 1: Action Plan Proposal Template Part B-D Students will investigate the Science Georgia Standards of Excellence to reflect on what they already know about their proposal. Students will also develop project goals, expected outcomes and criteria for their project.	
Students are able to effectively explain, write, defend, and assess effectiveness of capstone problems and solutions.	Part 2: Action Plan Proposal Template Part E-G Students will reflect on their procedures for the capstone in order to write and explain steps needed for their action plan. Students will identify any potential risks they may encounter as they carry out their action plan. Students will collect data to assess the effectiveness of their action plan.	
Students are able to reflect and express their experience about the capstone.	Capstone Experience Reflection Students will reflect on their capstone experience.	
Content Resources		
<ul style="list-style-type: none">- Teacher created PowerPoints- Capstone templates- Research topics- Capstone Timeline- 17 Sustainable Development Goals- Research lessons		
Capstone Connections		
Launch Task: Designing and Building a Solar Oven: Students will use the Design Cycle to complete the launch task. The Design Cycle will support students as they attempt to solve environmental sustainability issues during their Capstone Unit. Media Center Visit - Exploring Effective Scientific Research		

LabAid Geological Processes Lesson 16 Rocks as a Resources: Students read about the geological processes that led to the formation of three natural resources. They learn that many natural resources only form by particular geological processes and over a very long time, making them scarce and nonrenewable. The capstone connection with this activity will allow students to reflect and think about how to try to develop a solution to a problem when scarce and nonrenewable items are key to helping develop the solution.

MSGA Weathering, Erosion, and Deposition Survey: Students will review environmental sustainability issues when weathering, erosion, and deposition occurs around our school grounds. Students will come up with solutions to the issues they identify. Having students develop solutions for this activity allows them to continue the thought process as to how to create solutions tied to a problem.

Mercedes Benz Field trip: By experiencing the MBS field trip, students will learn about creating zero waste. This connects to their capstone by having students understand how their choices affect the environment.

Lab Aid 3: Water Quality. This connects to the capstone by having students reflect on conservation. Through global warming students will learn about their role and impact on maintaining a sustainable earth.

The Mercedes Benz Stadium learning experience will help students dive deeper into keeping our environment clean and sustainable.