Marietta City Schools

District Unit Planner

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

Science Grade 6

Unit title	*Human Energy Needs*	**MYP year**	*1*	**Unit duration (hrs)**	*25 Hours (Spiraled throughout the year or as a summative task)*

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.

a. Ask questions to determine the differences between renewable/sustainable energy resources (examples: hydro, solar, wind, geothermal, tidal, biomass) and nonrenewable energy resources (examples: nuclear: uranium, fossil fuels: oil, coal, and natural gas), and how they are used in our everyday lives.

Prior Student Knowledge: (REFLECTION – PRIOR TO TEACHING THE UNIT)

In third grade, students investigate the following:

S3L2. Obtain, evaluate, and communicate information about the effects of pollution (air, land, and water) and humans on the environment.

a. Ask questions to collect information and create records of sources and effects of pollution on the plants and animals.

b. Explore, research, and communicate solutions, such as conservation of resources and recycling of materials, to protect plants and animals.

Concepts/Skills to be Mastered by Students

- Renewable and nonrenewable energy
- Global climate and change

Key Vocabulary: (KNOWLEDGE & SKILLS)

Conservation
Natural Resource
Nonrenewable resource
Renewable Resource
Inexhaustible Resource
Impact
Fossil Fuel

Solar energy
Wind energy
Geothermal energy
Biomass
Tidal energy
Greenhouse gasses
Methane gas
Ozone
Climate Change
Soil
Windbreaks
Conservation Tillage
Terraces
Contour Plowing
Crop rotation

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)
Video on Climate Refugees (Edpuzzle) https://edpuzzle.com/media/5a0ddb2671d4c3410b96cc80

Possible Preconceptions/Misconceptions: (REFLECTION – PRIOR TO TEACHING THE UNIT)
Students think you can get any type of energy source here in Georgia.
Students do not understand how valuable soil is to farmers or to their day to day lives.

Key concept	Related concept(s)	Global context
Systems Systems are sets of interacting or interdependent components. Systems provide structure and order in human, natural and built environments. Systems can be static or dynamic, simple or complex.	Relationships (MYP) Energy (MYP/CCC)	**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 for the use of renewable and sustainable energy resources.

Inquiry questions		
Factual— What is a natural resource? What are alternate forms of energy? **Conceptual—** How can we conserve and protect our natural resources? **Debatable-** Could one person make a difference in the world's plastic crisis? Which renewable resource will provide the most energy for Georgia's growing population? Should the UN create a new category for refugees called climate refugees?		
MYP Objectives	**Assessment Tasks**	
*What specific MYP **objectives** will be addressed during this unit?*	***Relationship** between summative assessment task(s) and statement of inquiry:*	*List of common formative and summative assessments.*
Sciences **Design**	Inquiry and Obtain: Topics: Summative Task- Student choice pick one A. Where are the best places to have renewable energy in the USA? B. Students learn about Rain Gardens and explore where on MSGA's campus would place a rain garden. C. Which renewable resource will provide the most energy for Georgia's growing population? D. Students present a case for the United Nations creating a new category for Climate Refugee.	**Formative / Summative Assessment(s):** A. Students will create a script for a screencast that discusses why renewable energy is beneficial in some areas but not in others. B. DefinedSTEM: Rain Garden-Students research and design a rain garden. C. Design Device Challenge-Design Cycle D. CER
Approaches to learning (ATL)		
Category: Thinking **Cluster:** Critical-Thinking **Skill Indicator:** Use models and simulations to explore complex systems and issues. Gather and organize relevant information to formulate an argument.		

Learning Experiences Add additional rows below as needed.		
Objective or Content	**Learning Experiences**	**Personalized Learning and Differentiation**
Conservation of Natural Resources	Introduce Phenomenon Climate Refugees (Edpuzzle)	Scaffold notes for special education and ESOL
Conservation of Air and Soil	Student's research benefits of the decrease in air pollution during the Covid-19 pandemic. For example, find before and after pictures of cities that had a massive decrease in air pollution during the pandemic.	Scaffold notes for special education and ESOL
Content Resources		
Discovery Education Science Techbook - Human Energy, Conservation and Sustainability Unit Resources		