

Congruence with the NGSS

Unit Title: **Crossing the Shoreline: The Gulf of Mexico**

Science and Engineering Practices (SEPs)

SEPS	Activities
Asking Questions and Defining Problems	<ul style="list-style-type: none"> ● Gulf Stream Heat Budget and Europe’s Mild Climate: A Problem-based Learning Activity ● NOAA: Keeping Watch on Coral Reefs
Developing and Using Models	<ul style="list-style-type: none"> ● Virtual Barrier Island and Sea Level Rise
Analyzing and Interpreting Data	<ul style="list-style-type: none"> ● International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico ● Gulf Stream Heat Budget and Europe’s Mild Climate: A Problem-based Learning Activity ● Virtual Barrier Island and Sea Level Rise ● Water Quality Degradation in the Ocean ● Human Impacts on Marine Ecosystems
Using Mathematics and Computational Thinking	<ul style="list-style-type: none"> ● Virtual Barrier Island and Sea Level Rise
Constructing Explanations and Designing Solutions	<ul style="list-style-type: none"> ● NOAA: Keeping Watch on Coral Reefs
Engaging in Argument from Evidence	<ul style="list-style-type: none"> ● The Rise and Disappearance of Southeast Louisiana ● Water Quality Degradation in the Ocean
Obtaining, Evaluating and Communicating Information	<ul style="list-style-type: none"> ● International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico ● Water Quality Degradation in the Ocean

Disciplinary Core Ideas (DCIs)

DCIs	Activities
ESS2C: The Role of Water in Earth’s Surface Processes	<ul style="list-style-type: none"> ● Water Quality Degradation in the Ocean
ESS2D: Weather and Climate	<ul style="list-style-type: none"> ● Gulf Stream Heat Budget and Europe’s Mild Climate: A Problem-based Learning Activity
ESS2E: Biogeology	<ul style="list-style-type: none"> ● Dive and Discover: Expedition 13 – Gulf of Mexico ● Water Quality Degradation in the Ocean ● NOAA: Keeping Watch on Coral Reefs

ESS3A: Natural Resources	<ul style="list-style-type: none"> • Dive and Discover: Expedition 13 – Gulf of Mexico • Water Quality Degradation in the Ocean
ESS3B: Natural Hazards	<ul style="list-style-type: none"> • The Rise and Disappearance of Southeast Louisiana
ESS3C: Human Impacts on Earth’s Systems	<ul style="list-style-type: none"> • Water Quality Degradation in the Ocean • The Rise and Disappearance of Southeast Louisiana
ESS3D: Global Climate Change	<ul style="list-style-type: none"> • Gulf Stream Heat Budget and Europe’s Mild Climate: A Problem-based Learning Activity

Cross Cutting Concepts (CCCs)

CCCs	Activities
Patterns	<ul style="list-style-type: none"> • Water Quality Degradation in the Ocean
Cause and Effect	<ul style="list-style-type: none"> • Water Quality Degradation in the Ocean • The Rise and Disappearance of Southeast Louisiana • Gulf Stream Heat Budget and Europe’s Mild Climate: A Problem-based Learning Activity
Scale, Proportion, and Quantity	<ul style="list-style-type: none"> • International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico
Energy and Matter	<ul style="list-style-type: none"> • Gulf Stream Heat Budget and Europe’s Mild Climate: A Problem-based Learning Activity
Structure and Function	<ul style="list-style-type: none"> • Gulf Stream Heat Budget and Europe’s Mild Climate: A Problem-based Learning Activity
Stability and Change	<ul style="list-style-type: none"> • Water Quality Degradation in the Ocean • The Rise and Disappearance of Southeast Louisiana
Interdependence of Science, Engineering and Technology	<ul style="list-style-type: none"> • Dive and Discover: Expedition 13 – Gulf of Mexico
Influence of Engineering, Technology and Science on Society and the Natural World	<ul style="list-style-type: none"> • Water Quality Degradation in the Ocean