**Barrier Island Lessons**

**Lesson Correlations to the**

**Louisiana Student Standards for Science (LSSS, 2017)**

**Louisiana Student Standards for Math (LSSM, 2016)**

**Louisiana Student Standards for Social Studies (LSSSS, 2011)**

**All standards can be found at** [**https://www.louisianabelieves.com/resources/library/academic-standards**](https://www.louisianabelieves.com/resources/library/academic-standards)

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| **1** | **Map It** |
| LSSS | 4-ESS2-2 Analyze and interpret data from maps to describe patterns of Earth’s features.  8-MS-ESS2-2 Construct an explanation based on evidence for how geoscience processes have changed Earth’s surface at varying time and spatial scales.  HS-EVS1-2 Obtain, evaluate and communicate information on the effectiveness of management or conservation practices for one of Louisiana’s natural resources with respect to common considerations such as social, economic, technological, and influencing political factors over the past 50 years.  HS-EVS1-3 Analyze and interpret data about the consequences of environmental decisions to determine the risk-benefit values of actions and practices implemented for selected issues.  HS-ESS3-6 Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity. |
| LSSM | 3.G.A.1 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.  4.MD.A.1 Know relative sizes of measurement units within one system of units including ft, in; km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec  4.MD.A.1 Apply the area and perimeter formulas for rectangles in real-world and mathematical problems.  4.MD.D.8 Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real-world problems. |
| LSSSS |  |
| **2** | **Keeping Our Heads Above Water** |
| LSSS | 5-ESS3-1 Generate and compare multiple solutions about ways individual communities can use science to protect the Earth’s resources and environment.  7-MS-LS2-5 Undertake a design project that assists in maintaining diversity and ecosystem services.  8-MS-ESS2-2 Construct an explanation based on evidence for how geoscience processes have changed Earth’s surface at varying time and spatial scales.  HS-EVS1-2 Obtain, evaluate and communicate information on the effectiveness of management or conservation practices for one of Louisiana’s natural resources with respect to common considerations such as social, economic, technological, and influencing political factors over the past 50 years.  HS-EVS1-3 Analyze and interpret data about the consequences of environmental decisions to determine the risk-benefit values of actions and practices implemented for selected issues.  HS-ESS3-1 Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.  HS-ESS3-6 Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity. |
| LSSM | 5.G.A.2 Represent real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. |
| LSSSS | 3.4.3 Describe how people have changed the land to meet their basic needs over time in Louisiana  3.4.5 Describe how humans affect the environment in Louisiana  4.4.4 Measure approximate distance on a map using scale to the nearest hundredth mile  4.4.6 Interpret various types of maps using a key/legend, compass rose including cardinal and intermediate directions, latitude/longitude, and scale  4.6.1 Illustrate how natural processes have created and/or changed the physical characteristics of places in the United States  4.6.2 Describe the human impact on the land and bodies of water of the five regions of the United States  8.3.2 Use maps, charts, and diagrams to ask and answer questions about Louisiana’s geographic features  8.3.3 Apply knowledge of geography skills and terms to:  • read and interpret a map  8.5.1 Describe how natural phenomena impact the physical environment of Louisiana  8.5.2 Analyze and predict consequences of environment modifications on Louisiana and its inhabitants  WG.2.4 Explain and give examples of natural and human processes that shape Earth’s surface and identify specific locations where these processes occur  WG.6.1 Describe technological advances that have allowed humans to modify the environment and analyze the impact of these advances on the environment  WG.6.2 Identify challenges posed by the physical environment and evaluate strategies that will allow humans to more effectively deal with these challenges  WG.6.3 Analyze the distribution of resources and describe their impact on human systems (past, present, and future)  WG.6.4 Assess the role of government and business in preserving or consuming natural resources and protecting or destroying the physical environment |
| **3** | **Shifting Sands – Barrier Island Habitats** |
| LSSS | 3-LS4-4 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.  3-ESS3-1 Make a claim about the merit of a design solution that reduces the impact of a weather-related hazard.  7-MS-LS2-5 Undertake a design project that assists in maintaining diversity and ecosystem services.  8-MS-ESS2-2 Construct an explanation based on evidence for how geoscience processes have changed Earth’s surface at varying time and spatial scales.  HS-EVS1-2 Obtain, evaluate and communicate information on the effectiveness of management or conservation practices for one of Louisiana’s natural resources with respect to common considerations such as social, economic, technological, and influencing political factors over the past 50 years.  HS-EVS1-3 Analyze and interpret data about the consequences of environmental decisions to determine the risk-benefit values of actions and practices implemented for selected issues.  HS-ESS3-1 Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.  HS-ESS3-6 Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity. |
| LSSM | none |
| LSSSS | 3.4.3 Describe how people have changed the land to meet their basic needs over time in Louisiana  3.4.5 Describe how humans affect the environment in Louisiana  4.6.1 Illustrate how natural processes have created and/or changed the physical characteristics of places in the United States  4.6.2 Describe the human impact on the land and bodies of water of the five regions of the United States  8.5.1 Describe how natural phenomena impact the physical environment of Louisiana  8.5.2 Analyze and predict consequences of environment modifications on Louisiana and its inhabitants  WG.2.4 Explain and give examples of natural and human processes that shape Earth’s surface and identify specific locations where these processes occur  WG.6.1 Describe technological advances that have allowed humans to modify the environment and analyze the impact of these advances on the environment  WG.6.2 Identify challenges posed by the physical environment and evaluate strategies that will allow humans to more effectively deal with these challenges  WG.6.3 Analyze the distribution of resources and describe their impact on human systems (past, present, and future)  WG.6.4 Assess the role of government and business in preserving or consuming natural resources and protecting or destroying the physical environment |

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| **4** | **Shifting Sands – How Dunes Form** |
| LSSS | 3-ESS3-1 Make a claim about the merit of a design solution that reduces the impact of a weather-related hazard.  4-ESS2-1 Plan and conduct investigations on the effects of water, ice, wind, and vegetation on the relative rate of weathering and erosion.  7-MS-LS2-5 Undertake a design project that assists in maintaining diversity and ecosystem services.  8-MS-ESS2-2 Construct an explanation based on evidence for how geoscience processes have changed Earth’s surface at varying time and spatial scales.  HS-EVS1-2 Obtain, evaluate and communicate information on the effectiveness of management or conservation practices for one of Louisiana’s natural resources with respect to common considerations such as social, economic, technological, and influencing political factors over the past 50 years.  HS-EVS1-3 Analyze and interpret data about the consequences of environmental decisions to determine the risk-benefit values of actions and practices implemented for selected issues. |
| LSSM | none |
| LSSSS | 3.4.3 Describe how people have changed the land to meet their basic needs over time in Louisiana  3.4.5 Describe how humans affect the environment in Louisiana  4.6.1 Illustrate how natural processes have created and/or changed the physical characteristics of places in the United States  4.6.2 Describe the human impact on the land and bodies of water of the five regions of the United States  8.5.1 Describe how natural phenomena impact the physical environment of Louisiana  8.5.2 Analyze and predict consequences of environment modifications on Louisiana and its inhabitants  WG.2.4 Explain and give examples of natural and human processes that shape Earth’s surface and identify specific locations where these processes occur  WG.6.1 Describe technological advances that have allowed humans to modify the environment and analyze the impact of these advances on the environment  WG.6.2 Identify challenges posed by the physical environment and evaluate strategies that will allow humans to more effectively deal with these challenges  WG.6.4 Assess the role of government and business in preserving or consuming natural resources and protecting or destroying the physical environment |
| **5** | **Barrier Island Inhabitants** |
| LSSS | 3-LS2-1Construct and support an argument that some animals form groups that help members survive.  3-LS4-3 Construct and support an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.  4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.  4-LS1-2 Construct an explanation to describe how animals receive different types of information through their senses, process the information in their brains, and respond to the information in different ways.  4-ESS2-3 Ask questions that can be investigated and predict reasonable outcomes about how living things affect the physical characteristics of their environment.  6-MS-LS2-2 Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.  7-MS-LS2-4 Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.  8-MS-LS1-4 Construct and use argument(s) based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of survival and successful reproduction of animals and plants respectively.  HS-LS2-6 Evaluate the claims, evidence and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.  HS-EVS1-1 Analyze and interpret data to identify the factors that affect sustainable development and natural resource management in Louisiana  HS-EVS1-2 Obtain, evaluate and communicate information on the effectiveness of management or conservation practices for one of Louisiana’s natural resources with respect to common considerations such as social, economic, technological, and influencing political factors over the past 50 years. |
| LSSM | none |
| LSSSS | none |
| **6** | **Profiling the Beach** |
| LSSS | none |
| LSSM | 5.G.A.2 Represent real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.  7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers. |
| LSSSS | none |