**Educator’s Guide to the BTNE**

**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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| **1-1** | **Barrier Islands (K-1-2)** |
| LSSS | K-ESS3-3 Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.  2-ESS2-1 Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.  2-ESS2-2 Develop a model to represent the shapes and kinds of land and bodies of water in an area.  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. |
| LSSM | none |
| LSSSS | K.3.2 Identify maps and globes as a representation of the earth and recognize the difference between land and water  K.3.4 Illustrate basic landforms  1.3.4 Identify basic landforms using a globe or map  2.2.4 Identify major geographical features in the local region, state, and country  2.2.10 Identify natural disasters, predict where they may occur, and explain their effects on people and the environment  3.3.4 Locate and label major geographic features of Louisiana on a map |
| **1-2** | **Where is the Barataria-Terrebonne Estuary? (K-2)** |
| LSSS | 2-ESS2-2 Develop a model to represent the shapes and kinds of land and bodies of water in an area. |
| LSSM | K.MD.B.3 Classify objects into given categories based on their attributes; count the numbers of objects in each category and sort the categories by count.  1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another  2.MD.D.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems4 using information presented in a bar graph |
| LSSSS | K.3.2 Identify maps and globes as a representation of the earth and recognize the difference between land and water |
| **1-3** | **Habitat Lap Sit (4)** |
| LSSS | 4-ESS2-3 Ask questions that can be investigated and predict reasonable outcomes about how living things affect the physical characteristics of their environment. |
| LSSM | none |
| LSSSS | 4.6.2 Describe the human impact on the land and bodies of water of the five regions of the United States |
| **1-4** | **Wetlands in a Pan (3,4)** |
| LSSS | 4-ESS2-3 Ask questions that can be investigated and predict reasonable outcomes about how living things affect the physical characteristics of their environment. |
| LSSM | none |
| LSSSS | 3.3.4 Locate and label major geographic features of Louisiana on a map  3.4.1 Compare and contrast the physical features of various regions of 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 |
| **1-5** | **We Are Losing Our Wetlands (3)** |
| LSSS | 4-ESS2-2 Analyze and interpret data from maps to describe patterns of Earth’s features. |
| LSSM | 3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem*.*  3.MD.C.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units)  3.MD.C7 Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths |
| LSSSS | 3.3.4 Locate and label major geographic features of Louisiana on a map  3.4.1 Compare and contrast the physical features of various regions of Louisiana |
| **1-6** | **Wetland Metaphors (7)** |
| LSSS | 6-MS-LS2-2 Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems. |
| LSSM | none |
| LSSSS | 8.5.1 Describe how natural phenomena impact the physical environment of Louisiana |
| **1-7** | **Estuary Ecosystems (7)** |
| LSSS | 6-MS-LS2-2 Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.  8-MS-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing human impact on the environment. |
| LSSM | none |
| LSSSS | 8.3.2 Use maps, charts, and diagrams to ask and answer questions about Louisiana’s geographic features  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 |
| **1-8** | **Wetland ECO-Bingo (5, 7)** |
| LSSS | 6-MS-LS2-2 Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems |
| LSSM | none |
| LSSSS | none |
| **1-9** | **Wetland Field Trip (5, 7)** |
| LSSS | 4-ESS2-2 Analyze and interpret data from maps to describe patterns of Earth’s features.  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-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing human impact on the environment. |
| LSSM | none |
| LSSSS | 8.3.2 Use maps, charts, and diagrams to ask and answer questions about Louisiana’s geographic features |
| **1-10** | **Coastal Erosion: Making Sense of It All (3-5, 8)** |
| LSSS | 4-ESS2-1 Plan and conduct investigations on the effects of water, ice, wind, and vegetation on the relative rate of weathering and erosion.  4-ESS3-2 Generate & compare multiple solutions to reduce the impacts of natural Earth processes on humans.  5-ESS3-1 Generate and compare multiple solutions about ways individual communities can use science to protect the Earth’s resources and environment.  8-MS-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing human impact on the environment. |
| LSSM | none |
| LSSSS | 8.3.2 Use maps, charts, and diagrams to ask and answer questions about Louisiana’s geographic features  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 |
| **1-11** | **Demonstrating Destruction (3-5, 8)** |
| LSSS | 4-ESS2-1 Plan and conduct investigations on the effects of water, ice, wind, and vegetation on the relative rate of weathering and erosion.  4-ESS3-2 Generate & compare multiple solutions to reduce the impacts of natural Earth processes on humans.  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-LS2-4 Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.  8-MS-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing human impact on the environment. |
| LSSM | none |
| LSSSS | 8.3.2 Use maps, charts, and diagrams to ask and answer questions about Louisiana’s geographic features  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 |
| **1-12** | **Investigating Habitat Change (5, 8)** |
| LSSS | 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-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing human impact on the environment. |
| LSSM | 6.RP.A.3.c Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.  7.RP.A.3 Use proportional relationships to solve multi-step ratio and percent problems of simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, and percent error |
| LSSSS | 8.3.2 Use maps, charts, and diagrams to ask and answer questions about Louisiana’s geographic features  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 |
| **1-13** | **Issue Analysis & Decision Making (7, 8, HS Env Sci)** |
| LSSS | 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-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing human impact on the environment.  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-ESS3-3 Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity. |
| LSSM | none |
| LSSSS | 8.3.2 Use maps, charts, and diagrams to ask and answer questions about Louisiana’s geographic features  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.4.2 Analyze the distinguishing physical characteristics of a given place to determine their impact on human activities  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 |
| **1-14** | **Coastal Wetlands Needs YOU! (2, 3, 5, 7, HS Biol)** |
| LSSS | 5-ESS3-1 Generate and compare multiple solutions about ways individual communities can use science to protect the Earth’s resources and environment.  8-MS-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing human impact on the environment.  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-EVS3-1 Construct and evaluate arguments about the positive and negative consequences of using disposable resources versus reusable resources. |
| LSSM | none |
| LSSSS | 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.4.2 Analyze the distinguishing physical characteristics of a given place to determine their impact on human activities  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 |
| **1-15** | **The Tragedy of Isles Dernieres (8, HS Env. Sci)** |
| LSSS | 3-ESS3-1 Make a claim about the merit of a design solution that reduces the impact of a weather-related hazard.  8-MS-ESS3-2 Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.  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. |
| LSSM | none |
| LSSSS | 2.2.10 Identify natural disasters, predict where they may occur, and explain their effects on people and the environment  8.5.1 Describe how natural phenomena impact the physical environment of Louisiana  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.6.2 Identify challenges posed by the physical environment and evaluate strategies that will allow humans to more effectively deal with these challenges |
| **1-16** | **A Bayou Journey in 1880 (5)** |
| LSSS | none |
| LSSM | none |
| LSSSS | 3.3.4 Locate and label major geographic features of Louisiana on a map  3.4.1 Compare and contrast the physical features of various regions of Louisiana |
| **1-17** | **The Great Marsh Dilemma (7, HS Biol, HS Env. Sci)** |
| LSSS | 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-EVS3-1 Construct and evaluate arguments about the positive and negative consequences of using disposable resources versus reusable resources. |
| LSSM | none |
| LSSSS | 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 |
| **2-1** | **The Story of a Blue Crab (2)** |
| LSSS | 3-LS1-1 Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. |
| LSSM | none |
| LSSSS | 2.2.8 Describe the vegetation, the animal life, and the cultural characteristics of the people specific to local regions and how they are interdependent  2.2.9 Identify natural resources and cite ways people conserve, protect, and replenish them  3.4.7 Describe the importance of natural resources in Louisiana using maps |
| **2-2** | **Dress a Beaver (K-2)** |
| LSSS | K-LS1-1 Use observations to describe patterns of what plants & animals (including humans) need to survive.  K-ESS2-2 Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. |
| LSSM | none |
| LSSSS | 2.2.8 Describe the vegetation, the animal life, and the cultural characteristics of the people specific to local regions and how they are interdependent |
| **2-3** | **Cajun Creole Meal (3, 4)** |
| LSSS | HS-EVS1-1 Analyze and interpret data to identify the factors that affect sustainable development and natural resource management in Louisiana. |
| LSSM | none |
| LSSSS | K.2.3 Identify local, state, and national celebrations, holidays, and events using various sources  1.3.6 Compare and contrast local traditions/celebrations, customs, languages, and foods as an introduction to culture  2.2.9 Identify natural resources and cite ways people conserve, protect, and replenish them  3.2.4 Identify cultural elements that have contributed to the state’s heritage  3.4.7 Describe the importance of natural resources in Louisiana using maps  8.4.1 Analyze how the physical features and natural resources of Louisiana affected the migration patterns of cultural groups  8.4.2 Describe the causes and effects of cultural diffusion and its impact on diversity in early Louisiana  8.10.1 Analyze how scarcity of resources affects the choices of individuals and communities |
| **2-4** | **Wetland Webs (2, 4, 5)** |
| 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.  5-PS3-1 Use models to describe that energy in animals’ food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.  5-LS2-1 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. |
| LSSM | none |
| LSSSS | none |
| **2-5** | **Marsh Food Web Rummy Card Game** |
| 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.  5-PS3-1 Use models to describe that energy in animals’ food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.  5-LS2-1 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. |
| LSSM | none |
| LSSSS | none |
| **2-6** | **Wetlands Loss = Fisheries Loss (X)** |
| LSSS | 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-LS2-4 Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.  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.  **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 | 3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories.  3.MD.C.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).  3.MD.D.8 Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. |
| LSSSS | 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  8.3.2 Use maps, charts, and diagrams to ask and answer questions about Louisiana’s geographic features  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.4.2 Analyze the distinguishing physical characteristics of a given place to determine their impact on human activities  WG.6.1 Describe technological advances that have allowed humans to modify the environment and analyze the impact of these advances on the environment |
| **2-7** | **Nutria: Nutrition or Nuisance? (4, 5)** |
| LSSS | 5-PS3-1 Use models to describe that energy in animals’ food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.  5-LS2-1 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.  HS-EVS2-3 Use multiple lines of evidence to construct an argument addressing the negative impacts that introduced organisms have on Louisiana’s native species |
| LSSM | none |
| LSSSS | none |
| **2-8** | **Trading Spaces (5, 7, HS Env. Sci)** |
| LSSS | 4-ESS2-3 Ask questions that can be investigated and predict reasonable outcomes about how living things affect the physical characteristics of their environment.  HS-EVS2-3 Use multiple lines of evidence to construct an argument addressing the negative impacts that introduced organisms have on Louisiana’s native species |
| LSSM | none |
| LSSSS | 3.3.4 Locate and label major geographic features of Louisiana on a map  3.4.5 Describe how humans affect the environment in Louisiana  4.6.2 Describe the human impact on the land and bodies of water of the five regions of the United States |
| **3-1** | **What is Freshwater and What is Saltwater? (K-2)** |
| LSSS | 2-PS1-1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.  5-PS1-1 Develop a model to describe that matter is made of particles too small to be seen. |
| LSSM | none |
| LSSSS | 2.2.4 Identify major geographical features in the local region, state, and country  3.3.4 Locate and label major geographic features of Louisiana on a map |
| **3-2** | **The Ideal Filter (5, 7)** |
| LSSS | 8-MS-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing human impact on the environment.  HS-EVS1-1 Analyze and interpret data to identify the factors that affect sustainable development and natural resource management in Louisiana.  HS-EVS2-1 Design & evaluate a solution to limit the introduction of non-point source pollution into state waterways. |
| LSSM |  |
| LSSSS | 2.2.8 Describe the vegetation, the animal life, and the cultural characteristics of the people specific to local regions and how they are interdependent  3.4.7 Describe the importance of natural resources in Louisiana using maps  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.6.4 Assess the role of government and business in preserving or consuming natural resources and protecting or destroying the physical environment |
| **3-3** | **The Hurricane’s Coming (8)** |
| LSSS | 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. |
| LSSM | none |
| LSSSS | K.3.6 Describe how weather affects daily choices  2.2.5 Describe how location, weather, and physical features affect where people live and work  2.2.10 Identify natural disasters, predict where they may occur, and explain their effects on people and the environment  3.4.4 Explain how humans have adapted to the physical environment in different regions of Louisiana  4.5.3 Identify and explain how the physical characteristics of a region influenced human settlement  4.6.1 Illustrate how natural processes have created and/or changed the physical characteristics of places in 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.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 |
| **3-4** | **Keep It Above Board (2-4)** |
| LSSS | 4-ESS3-1 Obtain and combine information to describe that energy and fuels are derived from renewable and non-renewable resources and how their uses affect the environment.  8-MS-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing human impact on the environment. |
| LSSM | none |
| LSSSS | 2.4.1 Define the character traits of good citizens and discuss examples of responsible citizens  2.4.3 Describe ways in which responsible citizens can work together to help leaders resolve conflicts within the community  3.4.5 Describe how humans affect the environment in Louisiana  3.6.1 Explain the rights and responsibilities of individuals in making a community and state a better place to live  3.6.3 Describe how a citizen can help solve a local issue  4.6.2 Describe the human impact on the land and bodies of water of the five regions of the United States  4.8.3 Describe the qualities of a good citizen and how good citizenship contributes to the United States’ democracy  4.8.4 Explain how good citizenship can solve a current issue  8.8.1 Describe ways in which citizens can organize, monitor, or influence government and politics at the local, state, and national levels |
| **3-5** | **Exploring the Barataria-Terrebonne Watershed (8)** |
| LSSS | 4-ESS2-2 Analyze and interpret data from maps to describe patterns of Earth’s features. |
| LSSM | none |
| LSSSS | 4.4.6 Interpret various types of maps using a key/legend, compass rose including cardinal and intermediate directions, latitude/longitude, and scale  5.4.1 Differentiate between various types of maps using characteristics, functions, and applications  5.4.2 Analyze a map using a variety of tools  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 |
| **3-6** | **Watershed Drainage and Sources of Pollution (5, 7, 8)** |
| LSSS | 8-MS-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing human impact on the environment  HS-EVS2-1 Design & evaluate a solution to limit the introduction of non-point source pollution into state waterways. |
| LSSM | none |
| LSSSS | 8.8.1 Describe ways in which citizens can organize, monitor, or influence government and politics at the local, state, and national levels  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 |
| **3-7** | **Understanding Nutrients: Nitrogen Cycle (4, 7, HS Biol)** |
| LSSS | 6-MS-LS2-1 Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.  7-MS-LS2-4 Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.  HS-EVS2-1 Design & evaluate a solution to limit the introduction of non-point source pollution into state waterways.  HS-EVS2-2 Use a model to predict the effects that pollution as a limiting factor has on an organism’s population density.  HS-LS2-1 Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity, biodiversity and populations of ecosystems at different scales.  HS-LS2-4 Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.  HS-LS2-7 Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity. |
| LSSM | none |
| LSSSS | WG.6.2 Identify challenges posed by the physical environment and evaluate strategies that will allow humans to more effectively deal with these challenges |
| **3-8** | **Understanding Nutrients: Phosphorus Cycle (8)** |
| LSSS | 6-MS-LS2-1 Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.  7-MS-LS2-4 Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.  HS-EVS2-1 Design & evaluate a solution to limit the introduction of non-point source pollution into state waterways.  HS-EVS2-2 Use a model to predict the effects that pollution as a limiting factor has on an organism’s population density.  HS-LS2-1 Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity, biodiversity and populations of ecosystems at different scales.  HS-LS2-4 Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.  HS-LS2-7 Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity. |
| LSSM | none |
| LSSSS | WG.6.2 Identify challenges posed by the physical environment and evaluate strategies that will allow humans to more effectively deal with these challenges |
| **3-9** | **The Effect of NO3 on Plant Growth (7, HS Biol)** |
| LSSS | 6-MS-LS2-1 Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.  7-MS-LS2-4 Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.  HS-EVS2-2 Use a model to predict the effects that pollution as a limiting factor has on an organism’s population density. |
| LSSM | none |
| LSSSS | WG.6.2 Identify challenges posed by the physical environment and evaluate strategies that will allow humans to more effectively deal with these challenges |
| **3-10** | **Measuring the Bayou’s Vital Signs (7, HS Biol)** |
| LSSS | HS-EVS2-2 Use a model to predict the effects that pollution as a limiting factor has on an organism’s population density. |
| LSSM | none |
| LSSSS | WG.6.2 Identify challenges posed by the physical environment and evaluate strategies that will allow humans to more effectively deal with these challenges |
| **3-11** | **Swamp Sweep (7)** |
| LSSS | HS-EVS3-1 Construct and evaluate arguments about the positive and negative consequences of using disposable resources versus reusable resources. |
| LSSM | none |
| LSSSS | WG.6.2 Identify challenges posed by the physical environment and evaluate strategies that will allow humans to more effectively deal with these challenges |
| **4-1** | **A Song on the Bayou (3, 4)** |
| LSSS | 4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. |
| LSSM | none |
| LSSSS | none |
| **4-2** | **Ask an Expert (4, 5, 7, 8, HS Biol)** |
| LSSS | 6-MS-ESS3-4 Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth’s systems.  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-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. |
| LSSM | none |
| LSSSS | WG.6.2 Identify challenges posed by the physical environment and evaluate strategies that will allow humans to more effectively deal with these challenges |
| **5-1** | **Weaving Our Wetland Economic Web (5,7)** |
| LSSS | 8-MS-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing human impact on the environment. |
| LSSM | none |
| LSSSS | 4.9.2 Identify examples of human, natural, and capital resources and explain how these resources are used to produce goods and provide services  8.9.1 Analyze the role of specialization in Louisiana’s economy  8.9.2 Apply the laws of supply and demand to demonstrate the effects on Louisiana products and resources  8.9.3 Analyze and explain factors affecting the production and allocation of goods and services in Louisiana, the United States, and the world  8.10.5 Use a variety of resources to research and present findings about education and training for jobs and careers |
| **5-2** | **Wetland Promotions (5)** |
| LSSS | 5-ESS3-1 Generate and compare multiple solutions about ways individual communities can use science to protect the Earth’s resources and environment. |
| LSSM | none |
| LSSSS | 3.9.2 Investigate the responsibilities and characteristics of various jobs  8.10.5 Use a variety of resources to research and present findings about education and training for jobs and careers |