Louisiana K-12 Curriculum Standards: Presbytere

Living with Hurricanes: Katrina & Beyond

Social Studies Standards

K.1 Order events in a chronological sequence using schedules, calendars, and timelines. For example: a. Daily classroom activities b. Significant events in students' lives

K.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies

K.3 Select and use appropriate evidence from primary and secondary sources to support claims.

K.6 Identify a cause and effect for a significant event in a school, neighborhood, or parish.

K.11 Explain how people can work together to make decisions.

K.18 Use maps and models to describe relative location. For example: locating objects and places to the right or left, up or down, in or out, above or below.

K.19 Identify basic landforms and bodies of water in a variety of visual representations, including mountains, hills, coasts, islands, lakes, and rivers.

K.20 Identify ways people interact with their environment, including: a. Using natural resources b. Modifying their environment to create shelter

K.21 Identify rural, suburban, and urban areas.

K.22 Explain how weather impacts daily life and choices.

K.23 Explain why people may move from place to place.

1.1 Create a chronological sequence of events using appropriate vocabulary.

1.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies

1.3 Select and use appropriate evidence from primary and secondary sources to support claims.

1.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning.

1.5 Compare life in Louisiana in the past to life today.

1.6 Describe how past events can affect the present.

1.7 Compare the lives of Louisianans today in urban, suburban, and rural parishes.

1.24 Create and use maps or models with cardinal directions, keys, and scale.

1.28 Describe the physical characteristics of various regions of Louisiana, including bayous, swamps, floodplains, forests, and farmland.

1.29 Describe ways people in Louisiana change their environment to meet their needs, including the construction of bridges and levees.

1.30 Explain how Louisianans have successfully met the challenges posed by natural disasters.

1.31 Explain how and why people and goods move from place to place.

1.32 Explain how the physical landscape of Louisiana affected the settlement of Native Americans and early settlers.

2.1 Create and use a chronological sequence of events using appropriate vocabulary.

2.2 Differentiate between primary and secondary sources. For example: a. Primary sources: letters, diaries, autobiographies, speeches, interviews b. Secondary sources: magazine articles, textbooks, encyclopedia entries, biographies

2.3 Select and use appropriate evidence from primary and secondary sources to support claims.

2.4 Construct and express claims that are supported with relevant evidence from primary and secondary sources with clear reasoning.

2.15 Compare local, state, and national elected officials and explain their roles and responsibilities, including the president, governor, mayor, and representatives.

2.20 Create and use maps and models with a key, scale, and compass with intermediate directions.

2.25 Identify natural disasters such as blizzards, earthquakes, tornadoes, hurricanes, and floods and explain their effects on people and the environment.

2.26 Explain how and why people, goods, and ideas move from place to place.

3.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity.

3.3 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. c. Compare and contrast multiple sources.

3.4 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims.

3.19 Create and use maps and models with a key, scale, and compass with intermediate directions.

3.21 Interpret geographic features of the United States using a variety of tools such as different types of maps and photos.

3.27 Describe the importance of conservation and preservation.

4.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity.

4.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. c. Compare and contrast multiple sources.

4.5 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, content knowledge, and clear reasoning in order to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Explain causes and effects. d. Describe counterclaims.

4.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans, rivers, mountains, and deserts; cardinal and intermediate directions; climate and environment.

5.1 Create and use a chronological sequence of related events to compare developments and describe instances of change and continuity.

5.2 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Explain claims and evidence. c. Compare and contrast multiple sources.

5.6 Create and use geographic representations to locate and describe places and geographic characteristics, including hemispheres; landforms such as continents, oceans,

rivers, mountains, deserts; cardinal and intermediate directions; latitude and longitude, climate, and environment.

5.7 Use geographic representations and historical information to explain how physical geography influenced the development of civilizations and empires.

6.5 Use maps to identify absolute location (latitude and longitude) and describe geographic characteristics of places in Louisiana, North America, and the world.

6.6 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Evaluate claims, counterclaims, and evidence. c. Compare and contrast multiple sources and accounts. d. Explain how the availability of sources affects historical interpretations.

6.7 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, social studies content knowledge, and clear reasoning and explanations to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Analyze causes and effects. d. Evaluate counterclaims.

7.5 Use maps to identify absolute location (latitude and longitude) and describe geographic characteristics of places in Louisiana, North America, and the world.

7.6 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Evaluate claims, counterclaims, and evidence. c. Compare and contrast multiple sources and accounts. d. Explain how the availability of sources affects historical interpretations.

7.7 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, social studies content knowledge, and clear reasoning and explanations to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Analyze causes and effects. d. Evaluate counterclaims.

8.5 Use maps to identify absolute location (latitude, and longitude) and describe geographic characteristics of places in Louisiana, North America, and the world.

8.6 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Evaluate claims, counterclaims, and evidence. c. Compare and contrast multiple sources and accounts. d. Explain how the availability of sources affects historical interpretations.

8.7 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, social studies content knowledge, and clear reasoning and explanations to: a. Demonstrate an understanding of social studies content. b. Compare

and contrast content and viewpoints. c. Analyze causes and effects. d. Evaluate counterclaims.

8.17 Describe the importance of key ideas, events, and developments of the modern era. Describe the effects of natural disasters on Louisiana and the United States, including hurricanes Katrina and Rita.

C.6 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Evaluate claims, counterclaims, and evidence. c. Compare and contrast multiple sources and accounts. d. Explain how the availability of sources affects historical interpretations.

C.7 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, social studies content knowledge, and clear reasoning and explanations to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Analyze causes and effects. d. Evaluate counterclaims.

C.9 Analyze the structure, roles, responsibilities, powers, and functions of governments in the United States.

US.1 Analyze ideas and events in the history of the United States of America from 1776 to 2008 and how they progressed, changed, or remained the same over time.

US.2 Analyze connections between events and developments in U.S. history within their global context from 1776 to 2008.

US.3 Compare and contrast events and developments in U.S. history from 1776 to 2008.
US.4 Use geographic representations and demographic data to analyze environmental, cultural, economic and political characteristics and changes.

US.5 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Evaluate claims, counterclaims, and evidence. c. Compare and contrast multiple sources and accounts. d. Explain how the availability of sources affects historical interpretations.

US.6 Construct and express claims that are supported with relevant evidence from primary and/or secondary sources, social studies content knowledge, and clear reasoning and explanations to: a. Demonstrate an understanding of social studies content. b. Compare and contrast content and viewpoints. c. Analyze causes and effects. d. Evaluate counterclaims.

US.18 Explain major U.S. events and developments in the late twentieth and early twenty-first centuries.

WH.3 Use geographic representations and demographic data to analyze environmental, cultural, economic and political characteristics and changes.

WH.4 Use a variety of primary and secondary sources to: a. Analyze social studies content. b. Evaluate claims, counterclaims, and evidence. c. Compare and contrast multiple sources and accounts. d. Explain how the availability of sources affects historical interpretations.

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WH.6 Evaluate the influence of science, technology, innovations, and explain how these developments have altered societies in the world from 1300 to 2010.

WH.24 Analyze the effect that humans have had on the environment in terms of resources, migration patterns, and global environmental issues.

WH.25 Explain the relationship between the physical environment and culture on local, national, and global scales.

WG.3 Connect past events, people, and ideas to the present to draw conclusions and explain current implications.

WG.6 Analyze geographic factors that influence economic development.

WG.8 Analyze how people have modified or adapted to the environment locally, nationally, regionally, and globally.

Science Standards

Kindergarten

ENGINEERING DESIGN
A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions. (LE.ETS1A.a)

WEATHER AND CLIMATE

Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time. People measure these conditions to describe and record the weather and to notice patterns over time. (LE.ESS2D.a)

HUMAN IMPACTS ON EARTH SYSTEMS
Things that people do to live comfortably can affect the world around them; but they can make choices that reduce their impacts on the land, water, air, and other living things. (LE.ESS3C.a)

SYSTEMS AND SYSTEM MODELS
Systems in the natural and designed world have parts that work together.

NATURAL HAZARDS
Some kinds of severe weather are more likely than others in a given region. Weather scientists forecast severe weather so that the communities can prepare for and respond to these events. (LE.ESS3B.a)

DEVELOPING POSSIBLE SOLUTIONS
Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solution(s) to other people. (LE.ETS1B.a)

HUMAN IMPACTS ON EARTH SYSTEMS
Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. (LE.ESS3C.a)

1st

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SYSTEMS AND SYSTEM MODELS
Systems in the natural and designed world have parts that work together.

DEVELOPING POSSIBLE SOLUTIONS
Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for solutions to a problem. (LE.ETS1B.a)

OPTIMIZING THE DESIGN SOLUTION
Because there is always more than one possible solution to a problem, it is useful to compare and test designs. (LE.ETS1C.a)

2nd

THE HISTORY OF PLANET EARTH
Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe. (LE.ESS1C.a)

DEFINING AND DELIMITING ENGINEERING PROBLEMS

Asking questions, making observations, and gathering information are helpful in thinking about problems. (ETS.LE.1A.b)

OPTIMIZING THE DESIGN SOLUTION
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DEVELOPING POSSIBLE SOLUTIONS
Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for solutions to a problem. (ETS.LE.1B.a)

THE ROLES OF WATER IN EARTH'S SURFACE PROCESSES
Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form. (LE.ESS2C.a)

3rd

DEFINING AND DELIMITING ENGINEERING PROBLEMS
Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals for solutions can be compared on the basis of how well each one meets the specified criteria for success or how well each takes the constraints into account. (UE.ETS1A.a)

ECOSYSTEM DYNAMICS, FUNCTIONING, AND RESILIENCE
When the environment changes in ways that affect a place's physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die. (UE.LS2C.a)

DEVELOPING POSSIBLE SOLUTIONS
At whatever stage, communicating with peers about proposed solutions is an important part of the design process, and shared ideas can lead to improved designs. (ETS.UE.1B.b)

WEATHER AND CLIMATE

Scientists record patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next. (UE.ESS2D.a)

NATURAL HAZARDS
A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts.

4th

OPTIMIZING THE DESIGN SOLUTION
Different solutions need to be tested in order to determine which of them best solves the problem, given the criteria and the constraints. (UE.ETS1C.a)

WAVE PROPERTIES
Waves, which are regular patterns of motion, can be made in water by disturbing the surface. When waves move across the surface of deep water, the water goes up and down in place; it does not move in the direction of the wave except when the water meets the beach. (UE.PS4A.a)

Waves of the same type can differ in amplitude (height of the wave) and wavelength (spacing between wave peaks). (UE.PS4A.b)

EARTH MATERIALS AND SYSTEMS
Rainfall helps to shape the land and affects the types of living things found in a region. Water, ice, wind, living organisms, and gravity break rocks, soils, and sediments into smaller particles and move them around. (UE.ESS2A.a)

BIOGEOLOGY

Living things affect the physical characteristics of their environment. (UE.ESS2E.a)

NATURAL RESOURCES
Energy and fuels (fossil fuels, wind energy, solar energy, hydroelectric energy) that humans use are derived from natural sources, and their use affects the environment in multiple ways. Some resources are renewable over time, and others are not. (UE.ESS3A.a)

NATURAL HAZARDS
A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts. (UE.ESS3B.a)

DEVELOPING POSSIBLE SOLUTIONS TO ENGINEERING PROBLEMS

Testing a solution involves investigating how well it performs under a range of likely conditions. (UE.ETS1B.d)

5th

THE ROLES OF WATER IN EARTH'S SURFACE PROCESSES

Nearly all of Earth's available water is in the ocean. Most fresh water is in glaciers or underground; only a tiny fraction is in streams, lakes, wetlands, and the atmosphere. (UE.ESS2C.a)
Liquid water can become the gas form of water (water vapor) and liquid water can become a solid as ice. (UE.ESS2C.b)

HUMAN IMPACTS ON EARTH SYSTEMS
Human activities in agriculture, industry, and everyday life have had major effects on the land, vegetation, streams, ocean and the atmosphere. But individuals and communities are doing things to help protect Earth's resources and environments. (UE.ESS3C.a)

DEVELOPING POSSIBLE SOLUTIONS
Tests are often designed to identify failure points or difficulties, which suggest the elements of the design that need to be improved. (ETS.UE.1B.c)

6th

DEVELOPING POSSIBLE SOLUTIONS
A solution needs to be tested,to prove the validity of the design and then modified on the basis of the test results in order to improve it. There are systematic processes for evaluating solutions with respect to how well they meet the criteria and constraints of a problem. Sometimes parts of different solutions can be combined to create a solution that is better than any of its predecessors. Models of all kinds are important for testing solutions (MS.ETS1B.a)

HUMAN IMPACTS ON EARTH SYSTEMS
Typically as human populations and per-capita consumption of natural resources increase, so do the negative impacts on Earth unless the activities and technologies involved are engineered otherwise. (MS.ESS3C.b)

BIOGEOLOGY

Living organisms interact with Earth materials resulting in changes of the Earth. (MS.ESS2E.a)

RESOURCE MANAGEMENT FOR LOUISIANA

Responsible management of Louisiana's natural resources promotes economic growth, a healthy environment, and vibrant productive ecosystems. (MS.EVS1B.a

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7th

THE ROLES OF WATER IN EARTH'S SURFACE PROCESSES:
Water continually cycles among land, ocean, and atmosphere via transpiration, evaporation, condensation and crystallization, and precipitation, as well as downhill flows on land. (MS.ESS2C.a)

Global movements of water and its changes in form are propelled by sunlight and gravity. (MS.ESS2C.c)

LOUISIANA'S NATURAL RESOURCES

Replenishable resources such as groundwater and oxygen are purified by the movement through Earth's cycles. (MS.EVS1A.c)

WEATHER AND CLIMATE

Weather and climate are influenced by interactions involving sunlight, the ocean, the atmosphere, ice, landforms, and living things. These interactions vary with latitude, altitude, and local and regional geography, all of which can affect oceanic and atmospheric flow patterns. Because these patterns are so complex, weather can only be predicted probabilistically. (MS.ESS2D.a)

GLOBAL CLIMATE CHANGE

Human activities, such as the release of greenhouse gases from burning fossil fuels, are major factors in the current rise in Earth's mean surface temperature. Addressing climate change and reducing human vulnerability to whatever climate changes do occur depend on the understanding of climate science, engineering capabilities, and other kinds of knowledge, such as understanding of human behavior and on applying that knowledge wisely in decisions and activities. (MS.ESS3D.a)

ENGINEERING DESIGN: DEVELOPING POSSIBLE SOLUTIONS

A solution needs to be tested to prove the validity of the design and then modified on the basis of the test results in order to improve it. There are systematic processes for evaluating solutions with respect to how well they meet the criteria and constraints of a problem. Sometimes parts of different solutions can be combined to create a solution that is better than any of its predecessors. Models of all kinds are important for testing solutions (MS.ETS1B.a)

OPTIMIZING THE DESIGN SOLUTION

Although one design may not perform the best across all tests, identifying the characteristics of the design that performs best in each test can provide useful information for the redesign process-that is, some of those characteristics may be incorporated into the new design. (MS.ETS 1.C.a)

DEFINING AND DELIMITING AN ENGINEERING PROBLEM

The more precisely a design task's criteria and constraints can be defined, the more likely it is that the designed solution will be successful. Specification of constraints includes consideration of scientific principles and other relevant knowledge that is likely to limit possible solutions.(MS.ETS1A.a)

EARTH'S MATERIALS AND SYSTEMS

The planet's systems interact over scales that range from microscopic to global in size, and they operate over fractions of a second to billions of years. These interactions have shaped Earth's history and will determine its future. (MS.ESS2A.b)

THE ROLE OF WATER IN EARTH'S SURFACE PROCESSES

Water's movements—both on the land and underground—cause weathering and erosion, which change the land's surface features and create underground formations. (MS.ESS2C.e)

NATURAL RESOURCES

Humans depend on Earth's land, ocean, atmosphere, and biosphere for many different resources. Minerals, fresh water, and biosphere resources are limited, and many are not renewable or replaceable over human lifetimes. These resources are distributed unevenly around the planet as a result of past geologic processes. (MS.ESS3A.a)

LOUISIANA'S NATURAL RESOURCES

Non-renewable resources such as our state's fossil fuels are vast but limited. (MS.EVS1A.b)

NATURAL HAZARDS

Mapping the history of natural hazards in a region, combined with an understanding of related geologic forces can help forecast the locations and likelihoods of future events. (MS.ESS3B.a)

HUMAN IMPACTS ON EARTH'S SYSTEMS

Human activities, globally and locally, have significantly altered the biosphere, sometimes damaging or destroying natural habitats and causing the extinction of other species. But changes to Earth's environments can have different impacts (negative and positive) for different living things. (MS.ESS3C.a)

Typically as human populations and per-capita consumption of natural resources increase, so do the negative impacts on Earth unless the activities and technologies involved are engineered otherwise. (MS.ESS3C.b)

DEVELOPING POSSIBLE SOLUTIONS

A solution needs to be tested to prove the validity of the design and then modified on the basis of the test results in order to improve it. There are systematic processes for evaluating solutions with respect to how well they meet the criteria and constraints of a problem. Sometimes parts of different solutions can be combined to create a solution that is better than any of its predecessors. Models of all kinds are important for testing solutions. (ETS.MS.1B.a)

Earth Science

THE ROLE OF WATER IN EARTH'S SURFACE PROCESSES

The abundance of liquid water on Earth's surface and its unique combination of physical and chemical properties are central to the planet's dynamics. These properties include water's exceptional capacity to absorb, store, and release large amounts of energy, transmit sunlight, expand upon freezing, dissolve and transport materials, and lower the viscosities and melting points of rocks (HS.ESS2C.a)

EARTH MATERIALS AND SYSTEMS

Earth's systems, being dynamic and interacting, include feedback effects that can increase or decrease the original changes. (HS.ESS2A.a)

WEATHER AND CLIMATE

The foundation for Earth's global climate systems is the electromagnetic radiation from the sun, as well as its reflection, absorption, storage, and redistribution among the atmosphere, hydrosphere, and land systems, and this energy's re-radiation into space. (HS.ESS2D.a)

WEATHER AND CLIMATE

Gradual atmospheric changes were due to plants and other organisms that captured carbon dioxide and released oxygen. (HS.ESS2D.b)

Changes in the atmosphere due to human activity have increased carbon dioxide concentrations and thus affect climate. (HS.ESS2D.c)

NATURAL RESOURCES

Resource availability has guided the development of human society. (HS.ESS3A.a)

NATURAL HAZARDS

Natural hazards and other geologic events have shaped the course of human history; they have significantly altered the sizes of human populations and have driven human migrations. (HS.ESS3B.a)

NATURAL RESOURCES

All forms of energy production and other resource extraction have associated economic, social, environmental, and geopolitical costs and risks as well as benefits. New technologies and social regulations can change the balance of these factors. (HS.ESS3A.b)

DESIGNING SOLUTIONS TO ENGINEERING PROBLEMS

When evaluating solutions, it is important to take into account a range of constraints, including cost, safety, reliability, and aesthetics, and to consider social, cultural, and environmental impacts. (HS.ETS1B.a)

HUMAN IMPACTS ON EARTH SYSTEMS

The sustainability of human societies and the biodiversity that supports them requires responsible management of natural resources. (HS.ESS3C.a)

Environmental Science

RESOURCE MANAGEMENT FOR LOUISIANA

Population growth along with cultural and economic factors impact resource availability, distribution and use. (HS.EVS1B.a)

RESOURCE MANAGEMENT FOR LOUISIANA

Some changes to our natural environment such as the building of levees and hydrological modification have provided for economic and social development but have resulted in unintended negative impacts. (HS.EVS1.B.b)

POLLUTION AND THE ENVIRONMENT

Pollution includes both natural and man-made substances which occur at rates or levels which incur harm (i.e. combustion of fossil fuels, agricultural waste, and industrial byproducts). Pollution can be categorized as point-source pollution and non-point source pollution. (HS.EVS2A.a)

ENVIRONMENTAL CHOICES

Different approaches can be used to manage impacts to our environment. Generally speaking, we can change human activities to limit negative impacts. Alternately, we can use technologies that reduce impact or we can perform restoration work to recover natural functions and values. (HS.EVS2C.a)

Trade-offs occur when we make environmental choices. (HS.EVS2C.b)

DEFINING AND DELIMITING ENGINEERING PROBLEMS

Humanity faces major global challenges today, such as the need for supplies of clean water and food or for energy sources that minimize pollution, which can be addressed through engineering. These global challenges also may have manifestations in local communities. (HS.ETS1A.b)

STEWARDSHIP

Ecosystem sustainability can be used as a model for a sustainable society (e.g. recycling, energy efficiency, diversity). (HS.EVS3A.a)

Louisiana citizens are responsible for conserving our state's natural resources. Personal actions can have a positive or negative impact. (HS.EVS3A.b)

EARTH MATERIALS AND SYSTEMS

Earth's systems, being dynamic and interacting, include feedback effects that can increase or decrease the original changes. (HS.ESS2A.a)

WEATHER AND CLIMATE

The foundation for Earth's global climate systems is the electromagnetic radiation from the sun, as well as its reflection, absorption, storage, and redistribution among the

atmosphere, hydrosphere, and land systems, and this energy's re-radiation into space. (HS.ESS2D.a)

NATURAL RESOURCES

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NATURAL HAZARDS

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NATURAL RESOURCES

All forms of energy production and other resource extraction have associated economic, social, environmental, and geopolitical costs and risks as well as benefits. New technologies and social regulations can change the balance of these factors. (HS.ESS3A.b)

DESIGNING SOLUTIONS TO ENGINEERING PROBLEMS

When evaluating solutions, it is important to take into account a range of constraints, including cost, safety, reliability, and aesthetics, and to consider social, cultural, and environmental impacts. (HS.ETS1B.a)

HUMAN IMPACTS ON EARTH SYSTEMS

Scientists and engineers can make major contributions by developing technologies that produce less pollution and waste and that preclude ecosystem degradation. (HS.ESS3C.b)

DESIGNING SOLUTIONS TO ENGINEERING PROBLEMS

When evaluating solutions, it is important to take into account a range of constraints, including cost, safety, reliability, and aesthetics, and to consider social, cultural, and environmental impacts. (HS.ETS1B.a)