4th Grade Standards Correlated to Classes at The McDowell Environmental Center

Aquatic Adventures

NGSS
4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

ACOS
SC.4.9. Examine evidence to support an argument that the internal and external structures of plants and animals function to support survival, growitn, behavior, and reproduction.

MSF
4.LS.3.C. Compare characteristics of organisms, including growth and development, reproduction, acquisition and use of energy, and response to environment.

TASS
4.LS2.1. Support an argument with evidence that plants get the materials they need for growth and reproduction chiefly through a process in which they use carbon dioxide from the air, water, and energy from the sun to produce sugars, plant materials, and waste (oxygen); and that this process is called photosynthesis.
4.LS2.4. Develop and use models to determine the effects of introducing a species to, or removing a species from, an ecosystem and how either one can damage the balance of an ecosystem.
4.LS2.5. Analyze and interpret data about changes in the environment and describe what mechanisms organisms can use to affect their ability to survive and reproduce.
4.ETS2.2. Determine the effectiveness of multiple solutions to a design problem given the criteria and the constraints.

GPS
S4E3. Students will differentiate between the states of water and how they relate to the water cycle.
S4L1. Students will describe the roles of organisms and the flow of energy within an ecosystem

GSE
S4E3. Obtain, evaluate, and communicate information to demonstrate the water cycle.
S4L1. Obtain, evaluate, and communicate information about the roles of organisms and the flow of energy within an ecosystem.

Rock Query

NGSS
4-ESS1-1. Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.
4-ESS2-1. Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.

ACOS
SC.4.12.Construct explanations by citing evidence found in patterns of rock formations and fossils in rock layers that EAarth changes over time through both slow and rapid processes.
SC.4.14. Explore information to support the claim that landforms are the result of a combination of constructive forces, including crustal deformation, volcanic eruptions, and sediment deposition, as well as the result of deconstructive forces, including erosion and weathering.
SC.4.15. Analyze and interpret data to determine effects of weathering and rate of erosion by water, ice, wind, and vegetation using one single form of weathering or erosion at a time.

MSF
4.ES.4. A. Classify sedimentary, metamorphic, and igneous rocks.
4.ES.4. B. Compare and contrast Earth's geological features and the changes caused by external forces.
4.ES.4.G. Summarize the process that results in deposits of fossil fuels and conclude why fossil fuels are classified as nonrenewable resources.

TASS
4.ESS1.1. Generate and support a claim with evidence that over long periods of time, erosion and deposition have changed landscapes and created new landforms.
4.ESS2.1. Collect and analyze data from observations to provide evidence that rocks, soils, and sediments are broken into smaller pieces through mechanical weathering.
4.ESS2.3. Provide examples to support the claim that organisms affect the physical characteristics of their regions.
4.ESS2.4. Analyze and interpret data on the four layers of the Earth, including thickness, composition, and physical states of these layers.
4.ESS3.1. Obtain and combine information to describe that energy and fuels are derived from natural resources and that some energy and fuel sources are renewable and some are not.
4.ETS2.2. Determine the effectiveness of multiple solutions to a design problem given the criteria and the constraints.

GPS
S5E1. Students will identify surface features of the Earth caused by constructive and destructive processes.

GSE
S6E6. Obtain, evaluate, and communicate information about the uses and conservation of various natural resources and how they impact the Earth.

Down to Earth

NGSS

4-ESS1-1. Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.
4-ESS2-1. Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.

ACOS
SC.4.12.Construct explanations by citing evidence found in patterns of rock formations and fossils in rock layers that EAarth changes over time through both slow and rapid processes.
SC.4.14. Explore information to support the claim that landforms are the result of a combination of constructive forces, including crustal deformation, volcanic eruptions, and sediment deposition, as well as the result of deconstructive forces, including erosion and weathering.
SC.4.15. Analyze and interpret data to determine effects of weathering and rate of erosion by water, ice, wind, and vegetation using one single form of weathering or erosion at a time.

MSF
4.ES.4. A. Classify sedimentary, metamorphic, and igneous rocks.
4.ES.4. B. Compare and contrast Earth's geological features and the changes caused by external forces.
4.ES.4.G. Summarize the process that results in deposits of fossil fuels and conclude why fossil fuels are classified as nonrenewable resources.

TASS
4.LS2.5. Analyze and interpret data about changes in the environment and describe what mechanisms organisms can use to affect their ability to survive and reproduce.
4.ESS1.1. Generate and support a claim with evidence that over long periods of time, erosion and deposition have changed landscapes and created new landforms.
4.ESS2.1. Collect and analyze data from observations to provide evidence that rocks, soils, and sediments are broken into smaller pieces through mechanical weathering.
4.ESS3.1. Obtain and combine information to describe that energy and fuels are derived from natural resources and that some energy and fuel sources are renewable and some are not.
4.ESS3.2. Create an argument, using evidence from research, that human activity can affect the land and ocean in positive and/or negative ways.
4.ETS2.2. Determine the effectiveness of multiple solutions to a design problem given the criteria and the constraints.

GPS
S6E6. Students will describe various sources of energy and with their uses and conservation.
S5E1. Students will identify surface features of the Earth caused by constructive and destructive processes.

GSE
S6E6. Obtain, evaluate, and communicate information about the uses and conservation of various natural resources and how they impact the Earth.

Navigation

NGSS
4-ESS2-2. Analyze and interpret data from maps to describe patterns of Earth's features.

ACOS
SC.4.16. Describe patterns of Earth's features on land an in the ovean using data from maps.

MSF
4.ES.4.D. Describe how human activities have decreased the capacity of the environment to support some life forms.

TASS
4.ESS2.2. Interpret maps to determine that the location of mountain ranges, deep ocean trenches, volcanoes, and earthquakes occur in patterns.

GPS

GSE

Survival Skills

NGSS
4-ESS2-2. Analyze and interpret data from maps to describe patterns of Earth's features.

ACOS
SC.4.16. Describe patterns of Earth's features on land an in the ovean using data from maps.

MSF
4.ES.4.D. Describe how human activities have decreased the capacity of the environment to support some life forms.

TASS
4.ESS2.2. Interpret maps to determine that the location of mountain ranges, deep ocean trenches, volcanoes, and earthquakes occur in patterns.

GPS

GSE

Forest Connections

NGSS
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. Use a model to describe that animals receive different types of information through their senses, processes information in their brain, and respond to the information in different ways.

ACOS
SC.4.9. Examine evidence to support an argument that the internal and external structures of plants and animals function to support survival, growth, behavior, and reproduction.

SC.4.11. Investigate different ways animals receive information through the senses, process that information, and respond to it in different ways.

MSF
4.LS.3.C. Compare characteristics of organisms, including growth and development, reproduction, acquisition and use of energy, and response to environment.
4.LS.3.C. Compare characteristics of organisms, including growth and development, reproduction, acquisition and use of energy, and response to environment.

TASS
4.LS2.1. Support an argument with evidence that plants get the materials they need for growth and reproduction chiefly through a process in which they use carbon dioxide from the air, water, and energy from the sun to produce sugars, plant materials, and waste (oxygen); and that this process is called photosynthesis.
5.LS1.1. Compare and contrast animal responses that are instinctual vs. those that are gathered through senses, processed, and stored as memories to guide their actions.
4.LS2.3. Using information about the roles of organisms, evaluate how those roles in food chains are interconnected in a food web, and communicate how the organisms are continuously able to meet their needs in a stable food web.
4.LS2.4. Develop and use models to determine the effects of introducing a species to, or removing a species from, an ecosystem and how either one can damage the balance of an ecosystem.
4.ESS2.3. Provide examples to support the claim that organisms affect the physical characteristics of their regions.
4.ETS2.2. Determine the effectiveness of multiple solutions to a design problem given the criteria and the constraints.

GPS
S4L1. Students will describe the roles of organisms and the flow of energy within an ecosystem

GSE
S4L1. Obtain, evaluate, and communicate information about the roles of organisms and the flow of energy within an ecosystem.

Meet a Tree

NGSS
4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

ACOS
SC.4.9. Examine evidence to support an argument that the internal and external structures of plants and animals function to support survival, growitn, behavior, and reproduction.

MSF
4.LS.3.C. Compare characteristics of organisms, including growth and development, reproduction, acquisition and use of energy, and response to environment.

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4.LS2.1. Support an argument with evidence that plants get the materials they need for growth and reproduction chiefly through a process in which they use carbon dioxide from the air, water, and energy from the sun to produce sugars, plant materials, and waste (oxygen); and that this process is called photosynthesis.
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GPS
S4L1. Students will describe the roles of organisms and the flow of energy within an ecosystem

GSE
S4L1. Obtain, evaluate, and communicate information about the roles of organisms and the flow of energy within an ecosystem.

Big Sky

NGSS
4-PS4-2. Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.

ACOS
SC.4.8. Construct a model to explain that an object can be seen when light reflected from its surface enters the eye.

MSF
4.P.2.E. Describe how light behaves.

TASS
4.PS4,2, Describe how the colors of available light sources and the beding of light waves determine what we see.

GPS
S4E2. Students will model the position and motion of the earth in the solar system and will explain the role of relative position and motion in determining sequence of the phases of the moon.

GSE
S4E1. Obtain, evaluate, and communicate information to compare and contrast the physical attributes of stars and planets.
S4E2. Obtain, evaluate, and communicate information to model the effects of the position and motion of the Earth and the moon in relation to the sun as observed from Earth.

Night Hike

NGSS
4-PS4-2. Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.
4-LS1-2. Use a model to describe that animals receive different types of information through their senses, processes information in their brain, and respond to the information in different ways.

ACOS
SC.4.8. Construct a model to explain that an object can be seen when light reflected from its surface enters the eye.
SC.4.11. Investigate different ways animals receive information through the senses, process that information, and respond to it in different ways.

MSF
4.P.2.E. Describe how light behaves.
4.LS.3.C. Compare characteristics of organisms, including growth and development, reproduction, acquisition and use of energy, and response to environment.

TASS
4.PS4,2, Describe how the colors of available light sources and the bending of light waves determine what we see.
5.LS1.1. Compare and contrast animal responses that are instinctual vs. those that are gathered through senses, processed, and stored as memories to guide their actions.

GPS
S4E2. Students will model the position and motion of the earth in the solar system and will explain the role of relative position and motion in determining sequence of the phases of the moon.

GSE
S4E1. Obtain, evaluate, and communicate information to compare and contrast the physical attributes of stars and planets.
S4E2. Obtain, evaluate, and communicate information to model the effects of the position and motion of the Earth and the moon in relation to the sun as observed from Earth.

Value of a Tree

NGSS
4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

ACOS
SC.4.9. Examine evidence to support an argument that the internal and external structures of plants and animals function to support survival, growitn, behavior, and reproduction.

MSF
4.LS.3.C. Compare characteristics of organisms, including growth and development, reproduction, acquisition and use of energy, and response to environment.
4.ES.4.G. Summarize the process that results in deposits of fossil fuels and conclude why fossil fuels are classified as nonrenewable resources.

TASS
4.LS2.1. Support an argument with evidence that plants get the materials they need for growth and reproduction chiefly through a process in which they use carbon dioxide from the air, water, and

energy from the sun to produce sugars, plant materials, and waste (oxygen); and that this process is called photosynthesis.
4.LS2.4. Develop and use models to determine the effects of introducing a species to, or removing a species from, an ecosystem and how either one can damage the balance of an ecosystem.
4.ESS3.1. Obtain and combine information to describe that energy and fuels are derived from natural resources and that some energy and fuel sources are renewable and some are not.
4.ETS2.2. Determine the effectiveness of multiple solutions to a design problem given the criteria and the constraints.

GPS
S4L1. Students will describe the roles of organisms and the flow of energy within an ecosystem
S6E6. Students will describe various sources of energy and with their uses and conservation.

GSE
S4L1. Obtain, evaluate, and communicate information about the roles of organisms and the flow of energy within an ecosystem.
S6E6. Obtain, evaluate, and communicate information about the uses and conservation of various natural resources and how they impact the Earth.

Other Day Classes with Flexible Lesson Plans Addressing a Variety of Standards

Authors and Explorers
Canoeing
Mysterious Medley
Nature Hike
Navigation
Survival Skills
Stream Studies* - recommended for advanced 5th grade classes in spring term only