



NGSS – CREEK KIDS #1 – ALL GRADES

Lesson Name	Grade Level
Creek Kids 1	4th

NGSS Standard (performance expectation)	Related Lesson Activities
<u>3-5-ETS1-2: Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem</u>	<ul style="list-style-type: none"> - The watershed model activity shows students how pollution moves throughout the land with the water, students briefly discuss how we can reduce that pollution
<u>4-ESS2-2: Analyze and interpret data from maps to describe patterns of Earth’s features.</u>	<ul style="list-style-type: none"> - Google Maps terrain view activity highlights the boundaries that make up the watershed they’re currently in, as well as demonstrate the boundaries that separate other watersheds (virtual only) - Paper model activity describes the boundaries of watersheds and how water will move across the landscape

Lesson Name	Grade Level
Creek Kids 1	5th

NGSS Standard (performance expectation)	Related Lesson Activities
<u>3-5-ETS1-2: Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem</u>	<ul style="list-style-type: none"> - The watershed model activity shows students how pollution moves throughout the land with the water, students briefly discuss how we can reduce that pollution
<u>5-ESS3-1: Obtain and combine information about ways individual communities use science ideas to protect the Earth’s resources and environment</u>	<ul style="list-style-type: none"> - The watershed model activity as well as the google maps activity highlights how understanding one’s watershed and how the land is used around it, one can protect the water and land by reducing the pollution

**Lesson Name****Grade Level**

Creek Kids 1	6th
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NGSS Standard (performance expectation)**Related Lesson Activities**

<u>MS-ESS2-4: Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity</u>	<ul style="list-style-type: none">- The watershed model activity showcases how water moves downhill across the land
<u>MS-ESS3-3: Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment</u>	<ul style="list-style-type: none">- The watershed model shows students how any pollution on land can impact the water downstream, which means we can monitor and minimize impact by monitoring land use and reducing pollution



NGSS – CREEK KIDS/WATERSHED RESOURCE CENTER FIELD TRIP – ALL GRADES

Lesson Name	Grade Level
CK/WRC Field Trip	4th

NGSS Standard (performance expectation)	Related Lesson Activities
<u>4-LS1-2: Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways</u>	<ul style="list-style-type: none"> - The three water quality tests discuss how animals in the water will sense the changes in pH, phosphate, and dissolved oxygen and respond in certain ways
<u>3-5-ETS1-2: Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem</u>	<ul style="list-style-type: none"> - Throughout the field trip, students generate and compare multiple possible solutions to water quality issues by reducing pollution, as well as marine debris issues by participating in a reuse activity

Lesson Name	Grade Level
CK/WRC Field Trip	5th

NGSS Standard (performance expectation)	Related Lesson Activities
<u>3-5-ETS1-2: Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem</u>	<ul style="list-style-type: none"> - Throughout the field trip, students generate and compare multiple possible solutions to water quality issues by reducing pollution, as well as marine debris issues by participating in a reuse activity
<u>5-ESS2-2: Describe and graph the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.</u>	<ul style="list-style-type: none"> - Water in tubes activity describing the sources of water on Earth, leading to the small fraction that is clean and usable freshwater (in person only)



<p><u>5-ESS3-1: Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment</u></p>	<ul style="list-style-type: none"> - Students learn through the water quality testing and marine debris discussion how to reduce certain types of pollution to protect the environment
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Lesson Name	Grade Level
CK/WRC Field Trip	6th

NGSS Standard (performance expectation)	Related Lesson Activities
<p><u>MS-LS1-5: Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms</u></p>	<ul style="list-style-type: none"> - The three water quality tests showcase how water quality impacts the growth of organisms
<p><u>MS-LS2-4: Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations</u></p>	<ul style="list-style-type: none"> - The three water quality tests show evidence that changes to the physical environment can affect populations in the ecosystem (ex. Low dissolved oxygen means fewer fish can survive there)
<p><u>MS-LS2-5: Evaluate competing design solutions for maintaining biodiversity and ecosystem services</u></p>	<ul style="list-style-type: none"> - Students discuss alternatives for common chemicals used on the land that lead to pollution and water quality issues
<p><u>MS-ESS3-3: Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment</u></p>	<ul style="list-style-type: none"> - The water quality tests show students three different ways to monitor health of the environment and human impact - Students discuss how to minimize human impact by reducing pollution that causes changes in the water quality



NGSS – CREEK KIDS #2 – ALL GRADES

Lesson Name	Grade Level
Creek Kids 2	4th

NGSS Standard (performance expectation)	Related Lesson Activities
<p><u>4-ESS3-2: Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans</u></p>	<ul style="list-style-type: none"> - Students learn that heavy rain/flooding carries all the pollution in a watershed into streams and the ocean - Students brainstorm ideas to prevent pollution from getting in a watershed, streams, and ocean - Heavy rain/flooding are natural but the negative impacts on humans (dirty water, trash at the beach/ocean) can be reduced - Examples include: picking up trash anywhere in a watershed, disposing dog poop properly, fixing a car that is leaking oil or gas, etc.
<p><u>4-LS1-2. Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways</u></p>	<ul style="list-style-type: none"> - Students look at different types of marine debris and assess which would be most harmful to marine life. - Requires students to put themselves in the place of marine life to try to understand the ways in which they may respond to different marine debris



Lesson Name

Grade Level

Creek Kids 2	5th
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NGSS Standard (performance expectation

Related Lesson Activities

<p><u>5-ESS3-1: Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment</u></p>	<ul style="list-style-type: none"> - Students will use information received from the three Creek Kids lessons to brainstorm ideas to protect water quality <ul style="list-style-type: none"> - Trash/microplastics – 3 R's, picking up trash in neighborhood or at school - Chemical/nutrient – picking up dog poop, not using fertilizer next to a stream - Community awareness – hanging posters at school or park, talking with family and friends, organizing a cleanup at school or the beach
<p><u>5-PS1-3. Make observations and measurements to identify materials based on their properties.</u></p>	<ul style="list-style-type: none"> - Students identify different marine debris items and make observations on their different properties to identify which may be the most harmful
<p><u>5-PS2-1. Support an argument that the gravitational force exerted by Earth on objects is directed down.</u></p>	<ul style="list-style-type: none"> - Reinforce to students that water travels to the lowest point in watersheds, carrying debris with it, due to gravity.

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Creek Kids 2	6th
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NGSS Standard (performance expectation

Related Lesson Activities

<p><u>MS-ESS3-3: Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment</u></p>	<ul style="list-style-type: none"> - Given method: 3 R's - Student methods: students brainstorm and give ideas how they can reduce water pollution <ul style="list-style-type: none"> - Trash cleanups anywhere in a watershed, picking up dog poop, using compost instead
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	<p>of fertilizer, making awareness posters</p> <ul style="list-style-type: none"> - Students will use information received from the three Creek Kids lessons to brainstorm ideas to protect water quality <ul style="list-style-type: none"> - Trash/microplastics – 3 R’s, picking up trash in neighborhood or at school - Chemical/nutrient – picking up dog poop, not using fertilizer next to a stream - Community awareness – hanging posters at school or park, talking with family and friends, organizing a cleanup at school or the beach
<p><u>MS-PS1-3. Gather and make sense of information to describe that synthetic materials come from natural resources and impact society</u></p>	<ul style="list-style-type: none"> - Students identify organic vs. inorganic materials that make marine debris and note which natural resources they come from - Synthetic materials made from inorganic natural resources are identified as more harmful to marine life
<p><u>MS-LS2-3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.</u></p>	<ul style="list-style-type: none"> - Create a food web with the students to display energy flow from producers up to the apex predator - Introduce Biomagnification and how plastic can make its way into the food web