



Coastal Education Programs at The Crane Estate

Location	Level	Program Title	Description	Key concepts	Connection to MA Frameworks
Salt Marsh	K-2	Wetland Wanderers	On a salt marsh nature walk, participants will map landscape features and make observations of water and soil to explore how moving water shapes our wetlands.	Earth science focus: mapping landforms/water; how wind/water moves earth to change the landscape.	K-ESS2-1, K-ESS2-2, 2-ESS2-3, 2-PS1-1
	K-2	Life on the edge	Participants will use field guides to identify marsh life, and then brainstorm what unique traits help plants and animals survive while "living on the edge" of both land and sea.	Life Science Focus: adaptations, plant/animal parts comparisons between and within kind; habitats and basic needs; biodiversity (within and between areas); classification/observation.	K-LS1-1, K-LS1-2(MA), K-PS3-1, 1-LS1-1, 1-LS3-1, 2-LS4-1
	Grades 3-5	Watershed Warriors	Hands-on activities will showcase how erosion and accretion form and change marshes over time and the important role these wetlands play in the water cycle and keeping our watersheds clean and healthy.	Earth science focus: long term erosion/deposition; watershed and water cycle; marsh as a water filter	3-ESS2-1, 4-ESS1-1, 5-ESS2-1, 5-ESS3-2 (MA)
	Grades 3-5	Secrets of the Salt Marsh	Explore salt marsh biodiversity and the inherited vs. environmentally influenced adaptations that allow living things to survive in the ever-changing salt marsh.	Life science focus: characteristics inherited vs from environment; niches (effects of change in environment); adaptation (plant/animal structures support survival); food webs	3-LS4-2, 3-LS4-3, 3-LS4-4, , 4-LS1-1, 5-LS2-1, 5-PS3-1
	Grades 6-8	Salt Marsh Science	Learn via hands-on activities how scientists study the ever-changing coast. Choose Life Science or Earth Science focus to learn about the biodiversity & ecology OR the physical cycles and processes operating to shape this ever-changing coastal environment.	LS: adaptations lead to reproductive success, inter/intraspecies interactions, Disturbance impacts biodiversity, ecosystem services ES: coastal change, water cycle, weather, tides	7MS-LS1-4, 7MS-LS2-1, 7MS-LS2-2, 7MS-LS2-3, 7MS-LS2-4, 8MS-ESS2-5, 8MS-ESS2-6, 8MS-LS1-5, 8MS-LS3-2
	Grades 9-12	Ready for Resilience: Salt Marsh	Hands-on activities and student-led discussions will showcase the natural and human-influenced threats facing coastal habitats, and how The Trustees are managing for resilience as coastal land-owner.	Coastal change, habitat restoration, resource management, ecosystem services, community science, field ecology methods/tools	HS-LS2-1, HS-LS2-6, HS-LS2-7

Location	Level	Program Title	Description	Key Concepts	Connection to MA Frameworks
Beach and Dunes	Grades K-5	Shorebird Survivors	Via age-appropriate activities students will learn about shorebirds to explore concepts such as food webs, adaptations, how habitats supply the basic needs of living things, how parents care for their offspring.	habitats and basic needs, niches, adaptation, food webs	K-ESS2-2, 1-LS1-1, 2-LS2-3(MA), 3-LS1-1, 3-LS3-2, 3-LS4-3, 3-LS4-4, 4-LS1-1, 5-LS2-1
	K-2	Beach Life Detectives	Take a dune walk and then a beach walk along the wrack line to compare and contrast the plant and animal life found in these nearby but dissimilar habitats.	5 senses, habitats and basic needs, biodiversity (within and between areas), classification/observation.	K-ESS2-1, K-ESS2-2, K-LS1-1, K-LS1-2(MA), 1-LS1-1, 2-LS2-3, 2-LS4-1
	Grades 3-5	Shifting sands	Take a closer look at the shifting sands that make up our ever-changing coastline, and then engineer a shoreline protection solution to protect the coast from storms and sea level rise.	Earth Science Focus: long term erosion/deposition;	3-ESS3-1, 4-ESS1-1, 4-ESS2-1, 4-ESS3-2, 5-ESS3-1, 5-PS1-3
	Grades 6-8	Beach and Dune Science	Learn via hands-on activities how scientists study the ever-changing coast. Choose Life Science or Earth Science focus to learn about the biodiversity & ecology OR the physical cycles and processes operating to shape this ever-changing coastal environment.	LS: adaptations lead to reproductive success, inter/intraspecies interactions, Disturbance impacts biodiversity, ecosystem services ES: coastal change, water cycle, weather, tides	7MS-ESS2-2, 7MS-ESS3-4, 7MS-LS1-4, 7MS-LS2-2, 7MS-LS2-4, 7MS-LS2-6, 8MS-ESS1-2, 8MS-ESS2-1, 8MS-ESS2-5, 8MS-ESS2-6, 8MS-LS1-5
	Grades 9-12	Ready for Resilience: Beach & Dunes	Hands-on activities and student-led discussions will showcase natural and human-influenced threats facing coastal habitats, and how The Trustees are managing for resilience as coastal land-owner.	Coastal change, habitat restoration, resource management, ecosystem services, community science, field ecology methods/tools	HS-ESS2-5, HS-ESS3-3, HS-LS2-6, HS-LS2-7, HS-LS3-4
Steep Hill Shipwreck	Grades K-8	Shipwreck Scholars	On this interdisciplinary program, participants will hike through several coastal habitats and then take measurements and observations of a 100-year-old shipwreck, to learn how marine archaeologists study and protect historic artifacts.	Transportation systems and subsystems, maritime history, marine archaeology, erosion and weathering, coastal change	2-ESS2-4, 4-ESS1-1, 4-ESS2-1, 7MS-ESS2-2, 7MS-ESS3-4, 7MS-ETS3-3(MA), 8MS-ESS1-2, 8MS-ESS2-1, 8MS-ESS2-5, 8MS-ESS2-6
Crane Boat Dock	Grades 3-5	Estuary Explorers	Explore the Crane Wildlife Refuge on this dock program: conduct measurements of water quality and weather, pull a crab trap, collect and observe plankton using field microscopes, and observe the ever-shifting tides.	Life cycles, adaptations, tides, invasive species, food webs	3-LS1-1, 3-LS3-2, 3-LS4-3, 3-LS4-4, 4-LS1-1, 5-LS2-1