



MYSTIC AQUARIUM

Teaching Standards Addressed in Classroom Programs

Each of the four topics has options for every grade group from PreK-12. These topics are aligned with crosscutting concepts (CCC) of the Next Generation Science Standards (NGSS), and each program within a topic is adapted making use of the appropriate science and engineering practices (S&EP) to address disciplinary core ideas (DCI) for the corresponding grade groups. As well, Mystic Aquarium embraces the pedagogy of NGSS, where the teacher becomes more of a guide, and students are encouraged to collaborate and discover together while learning through their inquiries.

Pre-K and Kindergarten

Mystic Aquarium educators encourage young students to observe the natural world, ask questions, and look for patterns to describe needs that animals have to live and grow. They discover sources for those needs along with comparisons to our own. We also reinforce the important concept of cause and effect and how to respect each other and the environment we all share. All Pre-K & K programs include a literacy focus through vocabulary building and hands-on activities.

Standards Addressed –

CT ELDS Strands A, C, D & E

CT: PK.2, K.2

RI: LS1, LS4

NGSS: Structure & Function, Stability & Change; LS1, ESS2, ESS3; Asking Questions, Obtaining Information

GRADES 1 to 3

Students observe and construct ideas based on patterns they discover within the biodiversity and adaptations of animals. Water in many forms is featured through a variety of aquatic habitats. Many class options compare the structures and functions of animals and their young, as well as behaviors that help them survive. Programs also introduce concepts of how humans apply knowledge and resources from the natural world to create materials and products, as well as how children can make choices that help reduce their impact on our environment. All grade 1-3 programs promote STEM education through science literacy, inquiry, problem solving, and hands-on activities.

Standards Addressed –

CT: 1.2, 3.2

RI: LS1, LS2

NGSS: Patterns, Cause & Effect, Structure & Function; Stability & Change; LS1, LS2, LS3, LS4, ESS2, ESS3; Asking Questions, Obtaining & Communicating Information, Analyzing & Interpreting, Engaging from Evidence

GRADES 4 to 5

Students dive deeper into understanding biodiversity and the relationships between living things and their environments, especially how they relate to watersheds and the ocean. Students will construct

explanations from evidence that they gather and observe about structural and behavioral adaptations, the flow of energy within and between ecosystems, and solutions to problems that aquatic environments face resulting from overuse of limited resources. All grade 4-5 programs promote STEM education through scientific literacy, inquiry, problem solving, and hands-on activities.

Standards Addressed –

CT: 4.2, 5.1, 5.2

RI: LS1, LS2, LS3, PS2

NGSS: Patterns, Structure & Function, Cause & Effect, Energy & Matter, Stability & Change; LS1, LS3, ESS2, ESS3, ETS; Asking & Defining, Analyzing & Interpreting, Engaging from Evidence, Evaluating & Communicating Information

GRADES 6 to 8

Students use models to describe aquatic phenomena. Specific programs highlight ecology and engage students in evidence-based ideas about aquatic ecosystem dynamics, energy transfer and the interdependent relationships within them. Other classes focus on the processes of adaptation by natural selection and the evidence of common ancestry and biodiversity through patterns that emerge either in scientific classification or in genetic studies. Through evidence presented about human impacts on the ocean, students will construct explanations for cause and effect and develop solutions to help lessen those impacts. All grade 6-8 programs promote STEM education through scientific literacy, inquiry, problem solving, and hands-on activities.

Standards Addressed –

CT: 6.2, 7.2, 8.2

RI: LS1, LS3

NGSS: Patterns, Structure & Function, Cause & Effect, Energy & Matter, Stability & Change; LS1, LS2, LS3, LS4, ESS2, ESS3, ETS; Asking & Defining, Analyzing & Interpreting, Engaging from Evidence, Evaluating & Communicating Information

GRADES 9 to 12

Students will conduct scientific investigations and construct explanations, some with a focus on molecular structures and functions, to understand more about the inheritance and variation of traits. Other programs encourage them to analyze and interpret data on energy flow, ecosystem dynamics, and adaptations using detailed evidence of environmental influences in natural selection. Students will also develop possible solutions to help sustain biodiversity so that ecosystem functions and productivity are maintained to support and enhance life on Earth. All grade 9-12 programs promote interest in STEM through scientific literacy, active investigations, problem solving, and discussion of evidence and results. Please note that due to the size and fragility of specimens needed for Comparative Evolution, this program can only be conducted while visiting Mystic Aquarium or in a distance learning format.

*Please note that if you have an AP or Honors class or are just looking for accelerated learning options for your high school students, please refer to our “**Researcher for a Day**” programs in our **Collegiate** section.*

Standards Addressed –

CT: 9.3, 9.6, 9.8, 9.9, 10.5/CT Enrichment: Evolution, Physiology, 10.6/CT Enrichment: Ecology

NGSS: Patterns, Structure & Function, Cause & Effect, Energy & Matter, Stability & Change; LS2, LS3, LS4, ESS3, ETS1; Asking & Defining, Analyzing & Interpreting, Engaging from Evidence, Evaluating & Communicating Information

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