

SHAD IN THE CLASSROOM

Activity Summaries

Activity	Description	Appropriate grade levels	Subject area	NC Curriculum Correlations
American Shad Scents	Students will calculate river mileage available to American Shad, learn about survival adaptations, and perform an exercise using scents to find their way to a successful “spawn”.	all	Science Social Studies	2.L.1, 7.G.1.1, 6.G.2.2/7.G.2.1, 8.L.3.1
Aquatic Macroinvertebrate Sampling	Students will use nets to sample for aquatic macroinvertebrates in the stream (or pond). Collected organisms will be identified using a dichotomous key and then returned.	all	Science	Bio.2.1, 8.L.3, 8.E.1
Biologist Interviews	5-10 minute long interviews with a diverse group of North Carolina aquatic biologists, including student reflection questions to use during viewing.	6 - 12	Science	
Catch you later!	Students will learn about various fish sampling gear and in what scenarios they are used. Students will estimate the size of an American Shad population (simulated) in the Neuse River using the mark-recapture technique.	6-12	Science, Math	Bio.2.1, NC.7.SP.3, NC.M3.S-IC.4
Fintastic Sort and Dichotomous Key Activity	Students sort images of fish based on self-determined characteristics in small groups, then reflect as a class on how they chose to sort. After instruction on some anatomy terms, students use a dichotomous key to identify common river fish species.	all (Fintastic Sort) 3 - 8 (Key)	Science	K.L.1, 5.L.2, Bio.3.5.2
Food Web Activity	Students will understand complexity and connectivity within a near shore marine ecosystem by learning the story of the American Shad, creating a food web, and identifying specific reasons for their decline as well as restoration practices that can help bring them back into the ecosystem.	3-8	Science	6.L.2, Bio.2.1, 4.L.1
Genetics Activity (Who's Your Shaddy)	This is a genetics exercise to help students understand how researchers can determine in which river individual American Shad spawned and who their parents were. In general, this exercise will help reinforce an understanding of heredity and heterozygosity vs. homozygosity.	7-12	Science	Bio.3.1, Bio.3.3
Gyotaku – Fish Printing	Making American Shad (or other fish) prints allows students to blend learning external fish anatomy and art.	all	Art Science	CX.1, CX.2, V.3

How Old is Your Shad	Students observe their American Shad embryos or larvae and record observations. Then, they use a chart containing images of developing shad to determine the approximate age of their embryo or larva.	4-12	Science	2.L.1.1, 2.L.2, 4.L.1, 5.L.3, 8.L.3
Migration Madness	Students will “travel” a length of the Cape Fear River while encountering obstacles to experience the migration of the American Shad into this river basin.	4 - 12	Science Expressive Arts	
Nonfiction Reading and Writing	Students will read a nonfiction article or book. After reading, students will summarize and translate what they learn by creating a science journal entry or other written piece such as an article.	4 - 12	Reading Writing Science	Reading Standards: 1 RL.4.1, RL.7.3, RL.9-10.5, W.3.2 - W.5.2
Shad Life Cycle Activity (aka Brad the Shad)	Students match life cycle images and descriptions, then arrange themselves in a timeline to tell the story of the American Shad life cycle. An extension activity from Annah Riedel provides a Google Slides-based self-guided review of shad life history and anatomy.	4 - 12	Science Speaking/Listening	2.L.1, SL.3.4 - SL.5.4
Shad Origami	Create an American Shad origami (paper folding)	all	Art	CX.1
Shad Pipette Art	This project will assist students in improving their skills using a plastic squeeze transfer pipette in a fun and artistic manner by practicing with paint.	all	Art Science	CX.2, V.3
Watershed & GIS Activity	Using GIS generated maps; you will learn about blockages, or dams, along our rivers impeding anadromous fish, like American Shad, from moving up rivers and tributaries. You will become a fisheries biologist for a day and use real GIS data found on watershed maps to decide which dams should be removed to allow shad to migrate further upstream and back to their traditional spawning grounds.	6 - 12	Math Science Social Studies	6.G.2.2, 7.G.2.2, NC7.RP.1
Wishes of Fishes	In this activity, students will use both artistic ability and research skills to learn about shad and prepare a graphic on American Shad. This interdisciplinary activity links science with reading, writing, and art. You can choose to do the Shad Silhouette Mural or the Shad Paper Fortune Teller or both! Share your creation(s) with your class or school.	4-12	Art Reading Writing	RL.6.1/RL.7.1, RI.4.10/RI.5.10, W.3.5 - W.7.5, W.3.2 - W.5.2, 8.L.3, CX.2, V.2