

Bay Ecology
CTY Course Syllabus

		WHAT (objectives, etc.)	HOW (activities)
Day 1 (Monday)	Morning	Safety rules	Lecture
		Get to know classmates	Icebreaker
		Define Ecology	Brainstorm discussion
		Introduction to water tests	Small groups at boathouse
		Observe watershed and land use/Interpret water test results	Field Report/Field Questions
	Afternoon	Determine prior knowledge of Bay area and ability to follow directions	Pre-assessment
	Late Afternoon	Identify key geographical landmarks and physical features of the Chesapeake Bay watershed	Map Activity
Explore Bay history, productivity, uniqueness, properties, etc. Personal overview of the day		Readings Written Reflection	
Day 2 (Tuesday)	Morning	Review question from previous day's material/Day's objectives/Assignments/Vocabulary word of the day	W.O.A.V.
		Practice water safety/Practice collection techniques/Specimen collection/Observe watershed/Collect and record water data	Stillpond Field Trip/ Field Report/Field Questions
	Afternoon	Identify key characteristics of plants and fish	Small group fish/plant ID and discussion
	Late Afternoon	Communicate observations and findings from the field Personal overview of the day	Small group student-led discussion of field questions. Written Reflection
Day 3 (Wednesday)	Morning	Review question from previous day's material/Day's objectives/Assignments/Vocabulary word of the day	W.O.A.V.
		Explore Bay history, productivity, uniqueness, properties, etc.	Readings/Comprehension Sheets
		Discover different types of tides and their causes	Tide handout/Class demonstration
	Afternoon	Correctly use scientific method to solve a problem/Relate salinity levels to tides, seasons, etc./Describe salinity gradient	Salt Wedge Lab
	Late Afternoon	Describe nature of estuary/Describe unique features of tides, salinity, depth, turbidity, and temperature	Bay productivity lecture/Q&A
		Personal overview of the day	Written Reflection

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Day 4 (Thursday)	Morning	Review question from previous day's material/Day's objectives/Assignments/Vocabulary word of the day	W.O.A.V.
		Intro to salt water marshes/Compare species diversity to fresh water site/Discuss salinity gradients/Use binoculars to identify and observe birds and wildlife	Eastern Neck National Wildlife Refuge Field Trip/Field Report/Field Questions
	Late Afternoon	Personal overview of the day	Written Reflection
Day 5 (Friday)	Morning	Review question from previous day's material/Day's objectives/Assignments/Vocabulary word of the day.	W.O.A.V.
		Observe cliff formation/sedimentation/Observe geologic history of Chesapeake Bay	Andelot Farm Field Trip/Field Report/Field Questions
		Conduct plant/soil/fauna study in a one meter square	Biophysical Study
	Afternoon	Practice water safety/Practice collection techniques/Specimen collection/Observe watershed/Collect and record water data	Seining
	Late Afternoon	Compare fish anatomical structure to function/relate structure to diet, feeding patterns, habitat, speed, etc/Compare fin type and use	Lecture/Q&A/Examination of organisms/Internal anatomy dissection
		Personal overview of the day	Written Reflection
Day 6 (Monday)	Morning	Review question from previous day's material/Day's objectives/Assignments/Vocabulary word of the day	W.O.A.V.
		Correctly use and care for microscopes	Lecture/Hands-on use of microscopes
		Correctly use a dichotomous key	Practice and use dichotomous keys to identify plants and fish
		Correctly identify and communicate key characteristics of collected specimens	Create a personal field guide
	Afternoon	Review of productive and stressful aspects that make the Chesapeake Bay special	Reading/Charades
		Assessment of week 1 material	Brief written responses
	Late Afternoon	Learn about four Bay animals: Striped Bass, American Eel, Blue Crab, Oyster	Small group research and class presentations

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		Determine parts of skipjack/Describe the historical importance of the skipjack	Reading/Discussion
		Personal overview of the day	Written Reflection
Day 7 (Tuesday)	Morning/Afternoon	Review question from previous day's material/Day's objectives/Assignments/Vocabulary word of the day.	W.O.A.V.
		Observe historic work boat of Bay/Actively work boat, sails, steer, dredge, etc./Use watershed maps to interpret data	Skipjack and Maritime Museum Field Trip/Field Report/Field Questions
	Late Afternoon	Describe critical problems that affect watershed and Bay/Determine possible solutions to each problem/Discuss sources of pollutants	Lecture/Q&A/role play
		Personal overview of the day	Written Reflection
Day 8 (Wednesday)	Morning	Review question from previous day's material/Day's objectives/Assignments/Vocabulary word of the day.	W.O.A.V.
		Identify macro invertebrates/Relate organism to index value/Determine relative importance based on index value	Practice stream survey
		Evaluate stream based on water tests and macro invertebrates/Collect aquatic larvae and identify	Unicorn Field Trip/Field Report/Field Question/Professional Stream Survey
	Afternoon	Identify sources of nutrient pollution/Relate nutrient levels to low D.O./Determine how sunlight affects Bay grasses	Please Don't Feed the Bay
	Late Afternoon	Determine how sediments affect Bay life/Determine how nutrients affect Bay life/Relate population increase to pollution and Bay grass decline	Bernie's Toes
		Personal overview of the day	Written Reflection
Day 9 (Thursday)	Morning	Review question from previous day's material/Day's objectives/Assignments/Vocabulary word of the day.	W.O.A.V.
		Evaluate stream based on water tests and macro invertebrates/Collect aquatic larvae and identify	Urieville Field Trip/Field Report/Field Question/Professional Stream Survey
	Afternoon	Determine how land use affects sediment pollution/Observe various land uses in watershed	Bay Buffers/Interpretation of satellite photos

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	Late Afternoon	Discuss toxic pollution in the food chain	Bioconcentration Lecture/Q&A
		Personal overview of the day	Written Reflection
Day 10 (Friday)	Morning	Review question from previous day's material/Day's objectives/Assignments/Vocabulary word of the day.	W.O.A.V.
		Describe internal/external anatomy of keystone species/Discuss oysters in relation to previous activities	Oyster dissection
	Afternoon	Correctly use dichotomous keys to ID plant and fish specimens	Specimen ID
	Late Afternoon	Assessment of week 2 material	Brief written responses
Personal overview of the day		Written Reflection	
Day 11 (Monday)	Morning	Review question from previous day's material/Day's objectives/Assignments/Vocabulary word of the day.	W.O.A.V.
		Relate interconnections that impact Bay policies/Discuss possible and actual outcomes of policy decisions	Role play/Q&A about economic, social, political aspects of Bay policies
		Demonstrate ability to present persuasive objective arguments/Demonstrate public speaking skills	Prep for UN demon/Interview/Class discussion
	Afternoon	Explore various points of view regarding development in a wetland	Blue Heron Point Town Meeting
	Late Afternoon	Correctly use dichotomous keys to ID plant and fish specimens	Specimen ID
Personal overview of the day		Written Reflection	
Day 12 (Tuesday)	Morning	Review question from previous day's material/Day's objectives/Assignments/Vocabulary word of the day.	W.O.A.V.
		Given a development plan, investigate various points of view and political, economic, and environmental factors that influence growth	Debate/Role Play
	Afternoon	Convince UN delegates to write and pass resolution/Observe UN in action	UN demonstration/Debate/Presentations
		Evaluate Washington College's conservation methods	School Yard Report Card
	Late Afternoon	Identify possible action projects/Observe other students doing action projects	Chesapeake Bay Challenge Video
		Devise a plan to reduce nutrient, sediment, or toxicant pollutants in home watershed	Action Project: Research/Plan/Budget
Personal overview of the day		Written Reflection	

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Day 13 (Wednesday)	Morning	Review question from previous day's material/Day's objectives/Assignments/Vocabulary word of the day.	W.O.A.V.
		Determine awareness of Bay Terms	Bay Jeopardy
		Correctly use dichotomous keys to ID plant and fish specimens	Specimen ID
	Afternoon	Observe primary, secondary, and tertiary treatment of sewage/Identify methods to treat water	Comparison of sewage treatment plants/Field trip
	Late Afternoon	Personal overview of the day	Written Reflection
Day 14 (Thursday)	Morning	Review question from previous day's material/Day's objectives/Assignments/Vocabulary word of the day.	W.O.A.V.
		Determine buffer capacity of an area of land bordering an area of water	Andelot Farm Field Trip/Field Report/Field Question
	Afternoon	Assess course knowledge	Final Lab Practicum
		Late Afternoon	Personal overview of the day
Day 15 (Friday)	Morning	Review question from previous day's material/Day's objectives/Assignments/Vocabulary word of the day.	W.O.A.V.
		In depth personal reflection of stay and your thoughts about everything and anything	Washington College Boathouse field trip/Personal reflection/Shared Discussion