

## CTY Zoology (ANSC) Sample Syllabus

Week 1, Day 1	Topics	Activities/Materials
<b>Morning</b>	Introduction Goals & Expectations Go over syllabus/objectives Lab safety protocol Pre-assessment Fields of science	"Get to know you" games Discussion Take pre-assessment test Make a poster collage of fields of science M & M sampling activity Discussion
<b>Afternoon</b>	Discuss/review scientific method Characteristics of Life Introduction to animals Animal Classification	Diagram of kingdoms  Animal taxonomy chart
<b>Evening</b>	Experimental design	Brainstorming research projects and methodology

Week 1, Day 2	Topics	Activities/Materials
<b>Morning</b>	The microscope and its function Cell biology Organelles Cell reproduction – Mitosis, Meiosis  Levels of organization (tissues, organs, organ systems)	View microscope slides of cells & tissues Build a model of a cell Model mitosis & meiosis and view microscope slides
<b>Afternoon</b>	Protozoa – ancestors to animals Evolution of multicellularity Primitive animals: sponges and jellyfish	View microscope slides Dissection: sponge Watch movie: "Ocean Drifters" – take notes
<b>Evening</b>	Review material from class	Answer review questions Write up notes from movie

Week 1, Day 3	Topics	Activities/Materials
<b>Morning</b>	Invertebrates and vertebrates Triploblastic acoelomate animals Pseudocoelomate animals Parasitology: flatworms, nematodes	Online parasitology research – computer lab
<b>Afternoon</b>	Molluscs Discuss hatchery visit	Dissection: clam Field trip: visit the CDDE Marine Lab Shellfish Hatchery
<b>Evening</b>	Review material from class	Answer review questions Giant Squids – fact or fiction?

Week 1, Day 4	Topics	Activities/Materials
<b>Morning</b>	Annelids Leeches in medicine	Dissection: earthworm Earthworm behavior lab Neurophysiology in leeches – computer lab Online research on medicinal leeches
<b>Afternoon</b>	Arthropods – Arachnids, Crustacea  How to write a formal lab report How to interpret data in graphical form	Lab experiment: Effects of drugs on <i>Daphnia</i> Analysis & discussion of experiment
<b>Evening</b>	Review material from class	Write up lab report on lab experiment Draw graphs

Week 1, Day 5	Topics	Activities/Materials
<b>Morning</b>	Arthropods – Insects, Myriapoda  Nervous system	Dissection: lubber grasshopper & crayfish Watch movie: “Microcosmos”
<b>Afternoon</b>	Arthropod sampling & identification	Outdoor lab: sample on campus for arthropods
<b>Sunday Evening</b>	Review insect diversity learned in class	Write up notes from movie Rewrite lab report on Daphnia lab

Week 2, Day 6	Topics	Activities/Materials
<b>Morning</b>	Circulatory system Echinoderms Hemichordates Urochordates Evolution of vertebrates	Dissection: starfish Set up brine shrimp hatching experiment
<b>Afternoon</b>	Fish – Agnatha, Cartilaginous fish, Bony fish Respiratory system Adaptations to life in water Evolution of jaws	Dissection: perch  Watch movie: “Great Predators: Sharks” Take data on brine shrimp experiment
<b>Evening</b>	Review material learned in class	Answer review questions Write up notes from movie

Week 2, Day 7	Topics	Activities/Materials
<b>Morning</b>	Amphibians Adaptations to life on land	Dissection: frog Outdoor lab: hunt for native amphibians
<b>Afternoon</b>	Reptiles Dinosaurs Excretory system More adaptations to life on land	Watch movie: "Dinosaur Hunt" Take data on brine shrimp experiment
<b>Evening</b>	Review material learned in class	Write up notes from movie Read articles on fish to amphibian transition

Week 2, Day 8	Topics	Activities/Materials
<b>Morning</b>	Birds biology & biodiversity Adaptations for flight	Listen to bird call CDs Take data on brine shrimp experiment
<b>Afternoon</b>	Scientific research	Go to library and begin research on organism project
<b>Evening</b>	Oral presentation skills	Give "mini-presentations" Work on project

Week 2, Day 9	Topics	Activities/Materials
<b>Morning</b>	Mammals Systems in mammals Marsupials vs. mammals – convergent evolution Primates	Dissection: fetal pig "Opposable Thumbs" activity
<b>Afternoon</b>	Domesticated animals: Animal care & Animal husbandry	Dissection: owl pellets
<b>Sunday Evening</b>	Review material learned in class Prepare for zoo visit tomorrow	Write lab report on brine shrimp lab

Week 2, Day 10	Topics	Activities/Materials
<b>Morning</b>	Go to Roger Willams Park Zoo (9am)	Write an ethogram on animal of choice Complete zoo activity "Amazing Animals"
<b>Afternoon</b>	Return from Roger Willams Park Zoo (3pm)	Continued...
<b>Evening</b>	Animals observed at zoo Adaptations observed at zoo	Discussion of notes, activities from zoo Finish up lab reports Work on project

Week 3, Day 11	Topics	Activities/Materials
<b>Morning</b>	Intro to Ecology Population Ecology Community/Ecosystem Ecology	Watch movie: "Sexual Encounters of the Floral Kind" – complete study guide "Design an ecosystem" activity
<b>Afternoon</b>	Visit the ocean/intertidal zone Learn adaptations to life in the intertidal	Outdoor lab: sampling the marine and intertidal ecosystem
<b>Evening</b>		Discuss visit to the ocean Work on project

Week 3, Day 12	Topics	Activities/Materials
<b>Morning</b>	Give oral presentations!!	Give oral presentations!!
<b>Afternoon</b>	Conservation Biology Endangered species	Watch movie: "America's Endangered Species" – take notes & write them up
<b>Evening</b>		Online research: Endangered species – computer lab

Week 3, Day 13	Topics	Activities/Materials
<b>Morning</b>	Endangered species and potential solutions for specific organisms In-situ and ex-situ conservation strategies	Worksheet Natural selection lab  Discussion
<b>Afternoon</b>	Final "map" of zoology	Create and present "Zoological map"
<b>Evening</b>		Review for post-assessment

Week 3, Day 14	Topics	Activities/Materials
<b>Morning</b>	CTY SPE survey "Science Fair" with the other CTY science classes	Teach others about your project and interview other students about their research
<b>Afternoon</b>	Take post-assessment Wrap up topics covered in course Clean up lab/classroom	
<b>Evening</b>	NO CLASS	

Week 3, Day 15	Topics	Activities/Materials
<b>Morning</b>	Watch movie "March of the Penguins"	
<b>Afternoon</b>	NO CLASS	

Textbook: Zoology, 7<sup>th</sup> edition. Authors: S. A. Miller and J. P. Harley. Publisher: McGraw Hill, Boston, MA 2007.