



Zoology I $\frac{1}{2}$ credit

TERM 1

Term 1 Dates	MS College and Career Readiness Standards
WK 1: Aug 6-16	<p>ZOO.1.1 Develop and use dichotomous keys to distinguish animals from protists, plants, and fungi.</p> <p>ZOO.1.2 Describe how the fossil record documents the history of life on earth.</p> <p>ZOO.1.3 Recognize that the classification of living organisms is based on their evolutionary history and/or similarities in fossils and living organisms.</p>
WK 2: Aug 19-23	<p>ZOO.1.4 Construct cladograms or phylogenetic trees to show the evolutionary branches of an ancestral species and its descendants.</p> <p>ZOO.1.5 Design models to illustrate the interaction between changing environments and genetic variation in natural selection leading to adaptations in populations and differential success of populations.</p> <p>ZOO.1.6 Enrichment: Use an engineering design process to develop an artificial habitat to meet the requirements of a population that has been impacted by human activity.</p>
Unit Assessment 1	
WK 3: Aug 26-30	<p>ZOO.2.1 Differentiate among asymmetry, radial symmetry, and bilateral symmetry in an animal's body plan.</p> <p>ZOO.2.2 Identify the anatomy and physiology of a sponge, including how specialized cells within sponges work cooperatively without forming tissues to capture and digest food.</p>
WK 4: Sept 2-6	<p>ZOO.2.3 Describe the importance of phylum Porifera in aquatic habitats.</p> <p>ZOO.2.4 Create a model, either physical or digital, illustrating the anatomy of a sponge, tracing the flow of water.</p> <p>ZOO.2.5 Enrichment: Use an engineering design process to determine the quantity of water that may be absorbed per unit in a natural sponge versus a synthetic sponge.</p>
Mid-term OR Unit Assessment 2 (WK 4.5/ WK 5)	
WK 5: Sept 9-13	<p>ZOO.2.6 Contrast the polyp lifestyle of most Cnidarians with the medusa lifestyle of jellyfish, including how both utilize a single body opening.</p> <p>ZOO.2.7 Describe how nematocysts (stinging cells) of Cnidarians are used for capturing food and for defense.</p> <p>ZOO.2.9 Describe the ecological importance of and human impacts on coral reefs.</p>

WK 6: Sept 16-20	ZOO.2.10 Create a digital or physical model illustrating the anatomy of a cnidarian, citing similarities and differences between polyps and medusas ZOO.2.8 Enrichment: Utilize an engineering design process to create a simulated nematocyst, including possible biomimicry use.
Unit Assessment 3	
WK 7: Sept 23-27	ZOO.3.1 Considering the diversity of mollusks, explain how they all share a common body plan (i.e., mantle, visceral mass, and foot). ZOO.3.2 Describe why mollusks are classified as eucoelomates. ZOO.3.3 Explain how the mantle is used in forming the shell. ZOO.3.4 Describe how the radula is used in feeding. ZOO.3.5 Develop a dichotomous key to contrast characteristics of gastropods, bivalves, and cephalopods.
WK 8: Sept 30- Oct 4	ZOO.3.6 Examine how the unique characteristics of cephalopods lead to survival. ZOO.3.7 Create a model comparing the anatomy of gastropods, bivalves, and cephalopods. ZOO.3.8 Enrichment: Use an engineering design process to model the jet propulsion utilized by cephalopods in mechanical design of fluid systems (e.g., improving hydraulic systems).*
Unit Assessment 4 optional due to BMA	
WK 9: Oct 7-11	Benchmark or Unit Assessment

TERM 1	
Recurring Standards	
Standards taught the first 4-5 weeks; the mid-term data will indicate remediation is needed.	
WK 5: Sept 9-13	ZOO.1.1, ZOO.1.2 & ZOO.1.3
WK 6: Sept 16-20	ZOO.1.4, ZOO.1.5
WK 7: Sept 23-27	ZOO.2.1 & ZOO.2.2



Zoology I ½ credit

TERM 2

TERM 2	
Term 2 Dates	MS College and Career Readiness Standards
<p>WK 1: Oct 14-18</p>	<p>ZOO.4.1 Define and describe the closed circulatory system of an annelid. ZOO.4.2 Differentiate between parasitic and free living. ZOO.4.3 Compare and contrast the characteristics and lifestyles of flatworms, roundworms, and segmented worms.</p>
<p>WK 2: Oct 21-25</p>	<p>ZOO.4.5 Describe the evolutionary importance of the segmented body plans of annelids. ZOO.4.4 Create a model comparing acoelomate, pseudocoelomate, and eucoelomate body plans of Platyhelminthes, Nematoda, and Annelida. ZOO.4.6 Dissect representative taxa, and compare their internal and external anatomy and complexity.</p>
Unit Assessment 1	
<p>WK 3: Oct 28- Nov 1</p>	<p>ZOO.4.7 Enrichment: Design, conduct, and communicate results of an experiment demonstrating the importance of flatworms, roundworms, and annelids for human use (e.g., the earthworm in agriculture and the leech in medicine). ZOO.4.8 Enrichment: Use an engineering design process to design and construct a system to utilize flatworms, roundworms, or annelids to meet a human need.</p>
<p>WK 4: Nov 4-8</p>	<p>ZOO.5.1 Describe the evolutionary advantages of segmented bodies, hard exoskeletons, and jointed appendages to arthropods and how they contribute to arthropods being the largest phyla in species diversity and the most geographically diverse. ZOO.5.2 Explain how the exoskeleton is used in locomotion, protection, and development. ZOO.5.3 Enrichment: Use an engineering design process to develop a biomimicry of an arthropod’s exoskeleton to meet a human need.</p>
<p>WK 5: Nov 11-15</p>	<p>ZOO.5.4 Identify organisms and characteristics of chelicerates, crustaceans, and insects. ZOO.5.5 Describe the importance of toxins for arachnids, such as spiders and scorpions. ZOO.5.6 Describe the importance of chela for decapods, such as lobsters and crabs</p>
<p>WK 6: Nov 18-22</p>	<p>ZOO.5.7 Differentiate between complete and incomplete metamorphosis in insects’ life cycles. ZOO.5.8 Explain the importance of eusociality in insects, such as ants, bees, and termites. ZOO.5.9 Dissect representative taxa, and compare their internal and external anatomy and complexity.</p>

Mid-term OR Unit Assessment 2	
Wk 7: Dec 2-6	<p>ZOO.6.1 Recognize that the echinoderms have spines on their skin that are extensions of plates that form from the endoskeleton.</p> <p>ZOO.6.2a Explain how the starfish inverts its stomach for external digestion of food.</p> <p>ZOO.6.2b Describe sea urchins' and sea cucumbers' defense structures and behaviors.</p> <p>ZOO.6.3 Describe the sexual and asexual reproduction of starfish.</p>
Wk 8: Dec 9-13	<p>ZOO.6.4 Describe how the water vascular system is used for locomotion, feeding, and gas exchange.</p> <p>ZOO.6.5 Research, analyze, and communicate implications of applying the regeneration of starfish to human medicine.</p> <p>ZOO.6.6 Dissect representative taxa and compare their internal and external anatomy and complexity.</p> <p>ZOO.6.7 Enrichment: Use an engineering design process to model the water vascular system in hydraulic systems to meet a societal need.</p>
Unit Assessment 3 optional due to BMA	
Wk 9: Dec 16-20	Benchmark OR Unit Assessment

TERM 2	
Recurring Standards	
Standards taught the first 4-5 weeks; the mid-term data will indicate remediation is needed.	
Wk 5: Nov 11-15	ZOO.4.1, ZOO.4.2 & ZOO.4.3
Wk 6: Nov 18-22	ZOO.4.4, ZOO.4.5 & ZOO.4.6
Wk 7: Dec 2-6	ZOO.5.1 & ZOO.5.2



Zoology II ½ credit

TERM 3

Term 3 Dates	MS College and Career Readiness Standards
WK 1: Jan 6-10	ZOO.7.1 Students will understand why evolutionary changes lead to the diversity of fish and how they have adapted to the different aquatic environments. ZOO.7.2 Compare and contrast the characteristics of class Chondrichthyes and Osteichthyes.
WK 2: Jan 13-17	ZOO.7.3 Identify specific fish species and characteristics that differentiate class Chondrichthyes (e.g., sharks, skates, and rays). ZOO.7.4 Describe how the body and jaw design of sharks make them adept predators.
Unit Assessment 1	
WK 3: Jan 20-24	ZOO.7.5 Label and describe functions of the anatomical features of the bony fish, including internal organs, lateral line system, operculum, swim bladder, and external fins. ZOO.7.6 Research, analyze, and communicate the effects of urbanization and continued expansion by humans on the biodiversity of fish species (e.g., overfishing and invasive species).
WK 4: Jan 27-31	ZOO.7.7 Dissect representative taxa and compare their internal and external anatomy and complexity. ZOO.7.8 Enrichment: Use an engineering design process to design a “balloon fish” that has neutral buoyancy (i.e., does not sink or float). Report which materials were used to create the “fish,” and predict which materials should be added to make the “fish” sink and which materials would make the “fish” float.
Mid-term OR Unit Assessment 2 (WK 4.5/ WK 5)	
WK 5: Feb 3-7	ZOO.8.1 Understand the evolution of tetrapods and the development of the structure and function of body systems and life cycles.
WK 6: Feb 10-14	ZOO.8.2 Describe the constraints that require amphibians to spend part of their lives in water and part on land, including the morphological and physiological changes as they pass from one stage of their life cycle to the next.
Unit Assessment 3	
WK 7: Feb 17-21	ZOO.8.3 Describe adaptations that have led to reptiles living on land successfully.

Wk 8: Feb 24-28	Review for Benchmark
<i>Unit Assessment 4 optional due to BMA</i>	
Wk 9: March 3-7	<i>BMA OR Unit Assessment</i>

TERM 3	
Recurring Standards	
Standards taught the first 4-5 weeks; the mid-term data will indicate remediation is needed.	
Wk 5: Feb 3-7	ZOO.7.1 & ZOO.7.2
Wk 6: Feb 10-14	ZOO.7.3 & ZOO.7.4
Wk 7: Feb 17-21	ZOO.7.5 & ZOO.7.6



Zoology II ½ credit

TERM 4	
Term 4 Dates	MS College and Career Readiness Standards
WK 1: March 17-21	<i>TBD using Benchmark/ Unit Assessment data and/or remediation time needed for other grade level tested areas</i>
WK 2: March 24-28	<i>TBD using Benchmark/ Unit Assessment data and/or remediation time needed for other grade level tested areas.</i>
WK 3: March 31- April 4	<i>TBD using Benchmark/ Unit Assessment data and/or remediation time needed for other grade level tested areas.</i>
WK 4: April 7-11	<i>TBD using Benchmark/ Unit Assessment data and/or remediation time needed for other grade level tested areas</i>
WK 5: April 14-18	<i>TBD using Benchmark/ Unit Assessment data and/or remediation time needed for other grade level tested areas</i>
WK 6: April 21-25	<i>TBD using Benchmark/ Unit Assessment data and/or remediation time needed for other grade level tested areas</i>
WK 7: April 28- May 2	<i>TBD using Benchmark/ Unit Assessment data and/or remediation time needed for other grade level tested areas</i>
WK 8: May 5-9	
WK 9: May 12-21	

TERM 4	
Recurring Standards	
Standards taught the first 4-5 weeks; the mid-term data will indicate remediation is needed.	
WK 5: April 14-18	<i>N/A; benchmark testing</i>
WK 6: April 21-25	<i>N/A; benchmark testing</i>
WK 7: April 28- May 2	<i>N/A; benchmark testing</i>