Weekly Lesson Plans

Course: AP Environmental Science (APES) **Period: 1** **Teacher: Stephanie Taylor**

If you have questions, please feel free to email me: sdtaylor@greenville.k12.sc.us or leave me a message at 355 - 2677

Why is this course important?	Link to Course Syllabus:	Link to Course Standards:
You are an important part of the world and YOU have the power to enact changes. This class will help you build environmental knowledge so that YOU can start making those all important changes.		AP Environmental Science Course and Exam Description

Quarter 1		Quarter 2	
Week 1 Aug. 11-14	Week 6 Sep. 14 - 18	Week 11 Oct. 19 - 23	Week 16 Nov. 23 - 27
Week 2 Aug. 17-21	Week 7 Sep. 21 - 25	Week 12 Oct. 26 - 30	Week 17 Nov. 30 - Dec. 4
Week 3 Aug. 24-28	Week 8 Sep. 28 - Oct. 2	Week 13 Nov. 2 - 6	Week 18 Dec. 7 - 11
Week 4 Aug. 31 - Sep. 4	Week 9 Oct. 5 -9	Week 14 Nov. 9 - 13	Week 19 Dec. 14 - 18
Week 5 Sep. 7-11	Week 10 Oct. 12 - 16	Week 15 Nov. 16 - 20	

Week: Aug. 11-14	Unit(s): Introduction to APES

	Monday	Tuesday First Day of School!	Wednesday	Thursday	Friday
Agenda		1. Syllabus and expectations 2. Class content 3. Student information Form 4. Lab Safety	Writing an FRQ for Environmental Science 1. Task Verbs 2. Annotating Practice	Experimental Design/Scientific Method • Which is worse? Scientific Math practice - Due on Monday, 8/17/26	What IS Environmental Science? 1. Your worldview 2. Sustainability Unit 4 Notes
Work to Submit		1. Lab Safety assignment 2. Contract signed 3. Begin taking notes using THIS DOC.	1. Contract signed - Due at beginning of class tomorrow		Unit 4 notes - focus on 4.1 and 4.2 for discussion on Monday
Learning Target		I can review the class syllabus and outline the class expectations for AP Environmental Science.	I can annotate an FRQ prompt to determine which Task Verbs are being used, then appropriately answer the FRQ based on the requirements of the Task Verbs and question language.	I can apply the concepts of experimental design to a variety of scenarios to practice for the APES Exam.	I can use information from yesterday's Which is Worse? activity to develop my personal worldview.

Standards for the Week	
	No specific standards for this week

Week: Aug. 17-21	Unit(s): Unit 4 - Earth Systems and Resources

	Monday	Tuesday	Wednesday	Thursday	Friday
Agenda	Earth structure Plate tectonics 1. Phet simulation 2. Fun with Globes	Soil formation and erosion 1. Erosion Gizmo Watersheds 2. Watershed activity	Watershed wrap up • River Erosion Gizmo (TA) Soil composition and properties 1. Soil horizon stations	Soil Characteristics • Porosity Gizmo • Soil Texture and the triangle	Pep Rally Video Lab - Physical and Chemical Properties of Soil Earthworm Case Study
Work to Submit	Notes: 4.2 and 4.6	Notes: 4.3	Pre-lab questions and procedure review Notes: 4.4 and 4.5	Notes: 4.4 and 4.5 Study Card	Case Study - Due Tuesday, 8/25 Lab - due by the end of class Notes
Learning Target	After completing a series of simulations and activities, I can describe how the movement of the Earth's plates can help create or destroy crust surface features.	I can use a model of a watershed to explain the role of moving water in the rock cycle and the formation of soil.	I can demonstrate mastery of a variety of math and experimental design concepts by earning an 80% or better on my Unit 0 quiz.	I can use a variety of soil samples and lab test results to support my claims about the differences in soil composition in various biomes.	

Standards for the Week	
	Standards can be found on the Unit 4 - Earth Systems and Resources spreadsheet.

Week: Aug. 24 - 28	Unit(s): Unit 4 - Earth Systems and Resources

	Monday	Tuesday	Wednesday	Thursday	Friday
Agenda	Earth's atmosphere overview (will cover more in U7 and U9) Global wind patterns	Coriolis Effect and activity Solar Radiation and Seasons Earth's Geography and Climate ● Landmass features	El Nino and La Nina 1. Convection currents 2. Fishing activity	Super El Nino - what does it mean? ● Research and discussion Review, PPC	
Work to Submit	Notes: 4.7 and 4.8	Earthworm Case Study DUE! Notes: 4.9 Study Card	Study Card	Study Card	
Learning Target	I can use lab data and virtual activities to explain how the rotation of the Earth affects global wind patterns.	I can use lab data and virtual activities to provide support for the claim that the angle of the sun is the reason we have seasons, not the distance of the Earth from the sun.	I can use all of the information gathered this week to model and explain the changes in ocean currents related to El Nino as well as the resulting economic impacts.	I can apply what I have learned about El Nino, weather patterns, and geography to explain a super El Nino and the potential global impacts.	

Standards for the Week	
	Standards can be found on the Unit 4 - Earth Systems and Resources spreadsheet.

Week: Aug. 31 - Sep. 4	Unit(s): Unit 1 - The Living World: Ecosystems

	Monday	Tuesday	Wednesday	Thursday	Friday
Agenda	Intro to Ecosystems Terrestrial and Aquatic Biomes	**Unit 4 Test** Start Unit 1/2 notes	Terrestrial and Aquatic Biomes - prepare infographics	Terrestrial and Aquatic Biomes - Gallery Walk Biomes sorting activity	What do ALL biomes have in common? 1. Cycles of matter 2. Hydrologic Cycle Stem Case
Work to Submit	Notes: 1.1, 1.2 and 1.3	Notes: 1.1, 1.2 and 1.3	Infographics turned in Notes: 1.4 - 1.7	Notes: 1.4 - 1.7	Notes: 1.4 - 1.7
Learning Target	I can research my chosen biome and use my information to create a poster or infographic to teach my classmates about my biome.	I can demonstrate mastery of Unit 4 Earth Systems and Resources concepts by earning an 80% or better on my test.	I can apply what I know about biomes and their climate patterns to evaluate various climate graphs.	I can use information that I learn from my classmates to complete digital sorting charts for terrestrial and aquatic biomes.	I can use diagrams to explain the importance of the sun, soil, and geographic features in the water, phosphorus, sulfur and potassium cycles.

Standards for the Week
Standards can be found on the Unit 1 - The Living World: Ecosystem and Unit 2 The Living World Biodiversity spreadsheet.

Week: Sep. 7-11	Unit(s): Unit 1 - The Living World: Ecosystem Unit 2 - The Living World: Biodiversity

	Monday Holiday - Labor Day	Tuesday	Wednesday	Thursday	Friday
Agenda		Carbon Cycle Sketch Notes	Nitrogen Cycle and Stem Case	* Nitrogen Stem Case DUE by 8:45 AM Biogeochemical Cycles Round Robin and Gallery Walk	Biodiversity Ecosystem Services
Work to Submit		Review Notes Study Card Notes: 1.8 - 1.11	Notes: 1.8 - 1.11	Notes: 2.1, 2.2 Study Card	Notes: 2.3, 2.4, 2.5 and 2.7
Learning Target		I can annotate a sketch notes drawing of the carbon cycle in preparation for the activity on Wednesday.	I can use my knowledge about biogeochemical cycles to complete a Nitrogen Gizmos STEM Case.	I can help create a poster for each of the 4 main biogeochemical cycles by drawing and adding details from my notes.	I can create a model to demonstrate what I know about ecosystem services, as well as provide input on the models created by my classmates.

Standards for the Week
Standards can be found on the Unit 1 - The Living World: Ecosystem and Unit 2 The Living World Biodiversity spreadsheet.

Week: Sep. 14 - 18	Unit(s): Unit 1 - The Living World: Ecosystem Unit 2 - The Living World: Biodiversity

	Monday	Tuesday	Wednesday	Thursday	Friday
Agenda	Primary Productivity 10% rule Trophic levels, Food Chains and Food Webs Eating at a lower trophic level Exploring Trophic Cascade	Primary Productivity Lab - data collection and analysis Colors of the Deep Productivity lab	Ecological tolerance Ecological succession	Island Biogeography Lab	Adaptations Invasive species
Work to Submit	Notes: 2.6, 9.8 (video, take your own notes), 9.9 (video, take your own notes)	Study Cards for 1 and 2 Complete lab - due at the beginning of class tomorrow	Study Cards for 1 and 2 Personal Progress Checks	Study Cards for 1 and 2 Personal Progress Checks	Study Cards for 1 and 2 Personal Progress Checks
Learning Target	I can apply the concepts of energy capture (photosynthesis) and transfer (CR) as well as the 10% rule to complete predictions a Gizmo.	I can apply the concepts of energy capture (photosynthesis) and transfer (CR) as well as the 10% rule to complete a Primary Productivity lab.	I can explain how a natural or human caused disturbance in an ecosystem can cause a species to adapt to new environmental conditions.	I can model biodiversity through data collection in the Island Biogeography lab.	I can use what I know about genetics from Biology to explain how an invasive species can “push out” a native species.

Standards for the Week
Standards can be found on the Unit 1 - The Living World: Ecosystem and Unit 2 The Living World Biodiversity spreadsheet.

Week: Sep. 21 - 25	Unit(s): Unit 2 - The Living World: Biodiversity Unit 3 - Populations

	Monday	Tuesday	Wednesday	Thursday	Friday
Agenda	Biodiversity a la Hunger Games	**Units 1 & 2 Test** Start Unit 3 notes	Populations Survivorship Curves Sea Turtle Survivorship (due Tuesday, 9/23)	Survivorship case study due Carrying capacity Population growth Resource availability Lab: Population Estimation	Age Structure Diagram TFR Human Population Dynamics Population Math
Work to Submit	Study Cards for 1 and 2 Personal Progress Checks	Notes:3.1 - 3.3	Notes: 3.4 and 3.5 Survivorship case study	Notes: 3.6, 3.7, and 3.8 Lab	Notes: 3.9
Learning Target	I can use what I know about biodiversity, energy transfer, and species variation to determine the impact of natural selection on a leopard population.	I can demonstrate mastery of concepts in Units 1 and 2 by earning 80% or better on the test.	I can use given data about loggerhead turtles to create a survivorship curve graph and answer questions to complete a case study.	I can use Unit 3 concepts related to populations (covered Friday and today) to complete the Estimating Population Size activity.	I can recall information from Human Geography as well as use information presented today to create age structure diagrams (population pyramids) and answer analysis questions.

Standards for the Week	
	Standards can be found on the **2 The Living World Biodiversity** and **Unit 3 Populations** spreadsheets.

Week: Sep. 28 - Oct. 2	Unit(s): Unit 3 - Populations Unit 5 - Land and Water Use

	Monday	Tuesday	Wednesday	Thursday	Friday
Agenda	Demographic Transitions • Experimental Design activity	1. Tragedy of the Commons (5.1) 2. Ecological Footprints (5.11) 3. Intro to Sustainability (5.12)	**Unit 3 Test** Start Unit 5 notes	The Green Revolution Impacts of Agricultural Practices Irrigation Methods	1. Pest Control Methods 2. Integrated Pest Management 3. Sustainable Agriculture
Work to Submit	Study card Personal Progress Checks Notes: Notes: 5.1, 5.11 and 5.12	Notes: 5.3, 5.4, and 5.5	Notes: 5.6, 5.14 and 5.15 Study Card	Notes: 5.17, 5.2 Study Card	Notes: 5.7, 5.8, 5.16
Learning Target	I can use information from Human Geography and class to create a graph and to explain why populations are where they are in transition (scenarios).	I can collect data on the impact of my personal habits on the environment by completing the Ecological Footprint activity.	I can demonstrate mastery of Unit 3 Populations Concepts by earning an 80% or better on my test.	I can use information related to current agricultural practices in the US to explain the impacts of technological advances in agriculture on the human population and the environment.	I can apply what I learned about the impacts of agricultural practices to complete the salinization lab.

Standards for the Week	
	Standards can be found on the **Unit 3 Populations** and Unit 5 - Land and Water Use spreadsheets.

Week: Oct. 5 -9	Unit(s): Unit 5 - Land and Water Use

	Monday	Tuesday PSAT	Wednesday	Thursday	Friday
Agenda	Meat production recap Overfishing (5.8) Aquaculture (5.16) Rate my Plate activity	Forestry (5.17) and Clearcutting (5.2) Meat Production (5.7)	Soil salinization lab - data collection and analysis	Mining (5.9) Dig into Mining Virtual lab	Mining recap Urbanization (5.10) and heat islands Reducing Runoff (5.13)
Work to Submit	For a grade: Rate my plate Notes for the following sections should be done at this point: 5.1 - 6.5, 5.11, 5.12, 5.14, 5.15 and 5.17	Notes: 5.9, 5.8, 5.16, 5.10, 5.13	Complete lab Notes: 5.9 Study Card Personal Progress Checks	Notes: 5.10, 5.13 Study Card Personal Progress Checks	Study Card Personal Progress Checks
Learning Target	I can use what I know about agricultural practices, specifically overfishing and aquaculture, to complete the Rate My Plate activity.	I can determine the age of a tree after completing a dendrochronology activity, and create a list of real-world problems and practical solutions to deforestation.	I can apply my knowledge of agricultural practices to making my virtual “farm” as sustainable and profitable as possible.	I can use concepts from notes and a virtual copper mining lab to develop a list of environmental concerns related to mining.	I can use what I know about urbanization and runoff to

Standards for the Week
Unit 5 Spreadsheet

Week: Oct. 12 - 16	Unit(s): Unit 6 - Energy Resources and Consumption

	Monday	Tuesday	Wednesday	Thursday End of Quarter	Friday Teacher Workday
Agenda	**Unit 5 Test** Unit 6 notes	Renewables vs Non-renewables (6.1) Global Fuel Use (6.2)	Fuel Types (6.3) Distribution of Natural Energy Sources (6.4) How does my state…?	Fossil Fuels (6.5) Fossil Fuel Use graphing and analysis	
Work to Submit	Notes: 6.1 and 6.2	Notes: 6.3 and 6.4 Study Card	Notes: 6.5	Notes: 6.6 and 6.9 Fossil Fuel Use graphing and analysis	
Learning Target	I can demonstrate mastery of Unit Land and Water Use Concepts by earning an 80% or better on my test.	I can define renewable and nonrenewable resources and give examples of each to aid me in completing the "How does my state create electricity?" activity tomorrow.	I can correlate energy resource use data from Friday and distribution of energy resources to map and explain why countries use what they use.	I can create a chart with types of fossil fuels, extraction methods and pros/cons of each.	

Standards for the Week
Unit 6 Spreadsheet

Week: Oct. 19 - 23	Unit(s): Unit 6 - Energy Resources and Consumption

	Monday	Tuesday	Wednesday	Thursday	Friday
Agenda	Solar Energy (6.8)	Nuclear Energy (6.6) Hydroelectricity (6.9)	Wind Energy (6.12)	Biomass (6.7) Hydrogen Fuel Cell (6.11) Energy Math	1. Energy Conservation 2. Kill-A-Watt lab (modified) 3. Geothermal Energy pre-lab
Work to Submit	Notes: 6.12	Notes: 6.8	Notes: 6.7, 6.11 and 6.12	Study card	Pre-lab and procedures - Lab will take the WHOLE class period on Monday
Learning Target	I can use data and my knowledge of solar energy production to calculate the number of solar panels needed to provide electricity for a variety of situations.	I can compare and contrast the creation of electricity as well as the environmental pros and cons of nuclear power and hydroelectric power.	I can design a model wind turbine that can raise a variety of weights, then apply redesign ideas to improve efficiency.	I can complete a variety of energy calculations on the Energy Math worksheet.	I can apply what I know about conserving energy to complete a lab that evaluates household energy usage.

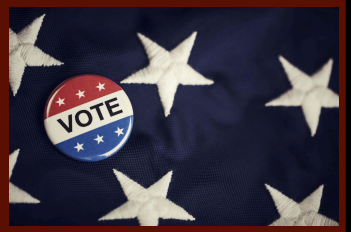
Standards for the Week	
	Unit 6 Spreadsheet

Week: Oct. 26 - 30	Unit(s): Unit 6 - Energy Resources and Consumption Unit 7 - Atmospheric Pollution

	Monday	Tuesday	Wednesday	Thursday	Friday Pep Rally
Agenda	Geothermal Heat Exchange Lab MAVS Matter Activity	EV mini debate	**Unit 6 Test**	Introduction to Air Pollution (7.1) 1. Air Pollution Simulation	Photochemical Smog (7.2) Thermal Inversion (7.3) 1. Lab - Ozone picture lab
Work to Submit	Complete Lab - Due Monday at the beginning of class Study Card	Study Card Personal Progress Checks	Notes: 7.1	Notes: 7.2 and 7.3	Notes: 7.4
Learning Target	I can complete the Geothermal Heat Exchange lab and use the data to answer analysis questions.	I can support my opinion on electric vehicles during a mini debate.	I can demonstrate mastery of the Unit 6 concepts by completing a selection of test questions with a partner and earning 80% or better.	I can use my list of criteria pollutants to explain how primary pollutants can form secondary pollutants.	I can explain the creation of photochemical smog using details learned about criteria pollutants in the notes and Air Pollution activity, then use this knowledge to complete the Tropospheric Ozone lab.

Standards for the Week	
	Unit 7 Spreadsheet

Week: Nov. 2 - 6	Unit(s): Unit 7 - Atmospheric Pollution

	Monday Teacher Workday	Tuesday Election Day	Wednesday	Thursday	Friday
Agenda			Atmospheric CO_2 and Particulates (7.4) 1. Air Quality Index activity 2. Smelling in the Rain Gizmo	Indoor Air Pollutants (7.5) Reduction of Air Pollutants (7.6) 1. Indoor Air Quality Survey	Acid Rain (7.7)
Work to Submit			Notes: 7.5, 7.6 Study Card	Notes: 7.7	Notes: 7.8
Learning Target			I can evaluate air quality data for 2 cities in the US, and explain trends seen in the data AND apply what I have learned about air pollution to complete a Gizmo.	I can identify indoor air pollutants, analyze data concerning indoor and outdoor air quality, and create a list of recommendations to reduce air pollutants with reasons explaining each suggestion.	I can use lab data and observations to explain how nitrous oxides and sulfur oxides create acid rain and its impacts.

Standards for the Week	
	Unit 7 Spreadsheet

Week: Nov. 9 - 13	Unit(s): Unit 7 - Atmospheric Pollution Unit 8 - Aquatic and Terrestrial Pollution

	Monday	Tuesday	Wednesday	Thursday	Friday
Agenda	Air Pollution Chalk Drawing	Noise Pollution (7.8) Noise Pollution Lab and Stem Case	**Unit 7 Test**	Sources of Pollution (8.1) Human Impact on Ecosystems (8.2) Endocrine Disruptors (8.3) 1. Case Study	Human Impact on Wetlands and Mangroves (8.4) Eutrophication (8.5) 1. Oxygen Sag Curve
Work to Submit	Study Card Personal Progress Checks	Lab and Stem Case Study Card Personal Progress Checks	Notes: 8.1 - 8.3	Notes: 8.4, 8.5 Case Study	Notes: 8.6, 8.7
Learning Target	I can work with classmates to create diagrams/models to show the processes involved in various types of chemical air pollution.	I can identify sources of noise pollution in Mauldin High School, and propose realistic solutions for those problem areas.	I can demonstrate mastery of the Unit 7 concepts by completing a test and earning 80% or better.	I can list potential sources of endocrine disruptors, describe how they can enter waterways, and explain the potential consequences of those disruptors.	I can use my notes and Slides from class to create an oxygen sag curve and answer questions based on data in an activity.

Standards for the Week
Unit 7 Spreadsheet Unit 8 Spreadsheet

Week: Nov. 16 - 20	Unit(s): Unit 8 - Aquatic and Terrestrial Pollution

	Monday	Tuesday	Wednesday	Thursday	Friday
Agenda	Thermal Pollution (8.6) POPs (8.7) The River Game	Biomagnification and Bioaccumulation (8.8) 1. Activity	**Makeup for Unit 7 Test for Band, DECA, YIG and anything else that causes you to miss the test on 11/11**	Solid Waste Disposal (8.9) Waste Reduction Methods (8.10) 1. Solid Waste Case Study	Sewage Treatment (8.11) The Great Stink Case Study
Work to Submit	Notes: 8.8 Study Card	Study Card Personal Progress Checks		Notes: 8.11	Notes: 8.12, 8.13 Case Study
Learning Target	I can use research and real world examples to explain the impact of persistent organic pollutants.	I can use what I have learned about POPs yesterday, and bioaccumulation vs biomagnification today to complete a lab activity.	I can demonstrate mastery of the Unit 7 concepts by completing a test and earning 80% or better.	I can apply what I know about solid waste disposal and how to reduce waste to complete the Solid Waste Case Study.	I can create an infographic, diagram or flowchart to explain what I know about sewage treatment.

Standards for the Week	
	Unit 8 Spreadsheet

Week: Nov. 23 - 27	Unit(s): Unit 8 - Aquatic and Terrestrial Pollution

	Monday	Tuesday	Wednesday Thanksgiving Break	Thursday Thanksgiving Break	Friday Thanksgiving Break
Agenda	LD50 and Dose Response Curve (8.12 & 8.13)	1. Pollution and Human Health (8.14) 2. Pathogens and Infectious Disease (8.15)			
Work to Submit	Notes: 8.14, 8.15	Study Card			
Learning Target	I can use data from the salinization lab to graph seed germination and predict the lethal dose of salt on plants, then extrapolate LD50 for medications on humans.	I can research various toxins and pathogens that affect humans and use that information to complete a chart.			

Standards for the Week	Unit 8 Spreadsheet

Week: Nov. 30 - Dec. 4	Unit(s): Unit 8 - Aquatic and Terrestrial Pollution Unit 9 - Global Change

	Monday	Tuesday	Wednesday	Thursday	Friday
Agenda	Pollution and Pathogens	**Unit 8 Test**	Endangered Species activity	Greenhouse Gas Effect (9.3) Increase in Greenhouse Gases (9.4) 1. Greenhouse Effect lab 2. Greenhouse Effect Phet Activity	Ozone Depletion (9.1) Reducing Ozone Depletion (9.2) 1. Ozone Depletion Lab
Work to Submit	Study Card	Notes: 9.1, 9.2	Notes: 9.1, 9.2	Notes: 9.5 - 9.7 Study Card	Notes: 9.3, 9.4
Learning Target	I can use all of my scientific design knowledge as well as all science background to set up an ocean acidification lab.	I can demonstrate mastery of the Unit 8 Terrestrial Pollution concepts by completing a test and earning 80% or better.	I can analyze data for 4 endangered species and determine which species should get government funding for recovery.	I can use knowledge from greenhouse effect activities and class discussion to craft answers to potential FRQs.	I can use chemistry, and data from an ozone depletion lab, to describe how stratospheric ozone is created and destroyed.

Standards for the Week
Unit 8 Spreadsheet Unit 9 Spreadsheet

Week: Dec. 7 - 11	Unit(s): Unit 9 - Global Change

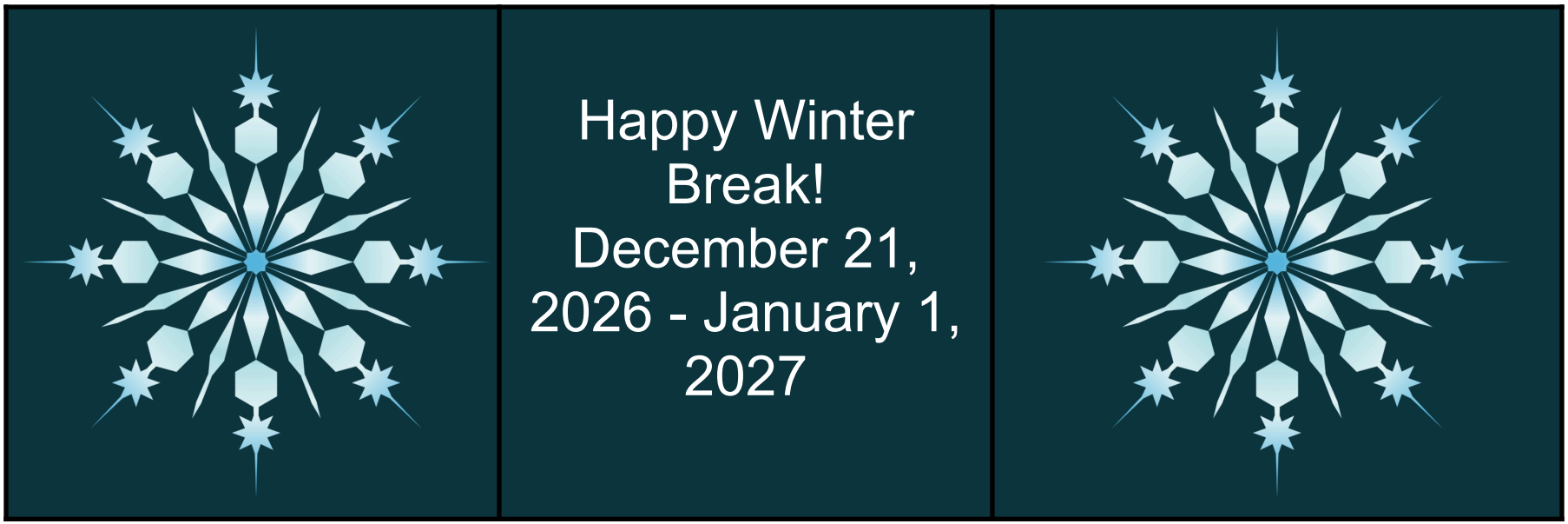
	Monday	Tuesday ** Meet in B106	Wednesday ** Meet in the Auditorium	Thursday ** Meet in the Auditorium	Friday **Meet in room B106
Agenda	Global Climate Change (9.5) Ocean Warming (9.6) Ocean Acidification (9.7) 1. Ocean Carbon Equilibrium Gizmo Stem Case	Human Impacts on Biodiversity (9.10) Environmental Laws The Climate Game	Thawing Permafrost (SO lab) Climate Change or American Alligator Case Study	Thawing Permafrost (SO lab) Climate Change or American Alligator Case Study	**U9 Test**
Work to Submit	Notes: 9.10 Review Ocean Acidification	Notes: 9.10 Study Card	Study Card	Study Card Personal Progress Checks	Review for exam
Learning Target	I can use my knowledge of all concepts in APES so far to complete the Ocean Carbon Equilibrium Stem Case.	I can apply what I have learned in APES to analyze data and answer conclusion questions in the Ocean Acidification lab.	I can make educated decisions in an effort to excel at The Climate Game.	I can apply everything that I have learned in APES to save the Earth from Climate Change by mastering the escape room!	I can demonstrate mastery of the Unit 9 concepts by completing a test and earning 80% or better.

Standards for the Week	
	Unit 9 Spreadsheet

Week: Dec. 14 - 18	Unit(s): Final Exams

	Monday	Tuesday	Wednesday	Thursday	Friday End of Quarter
Agenda		Final Exams P1 and P3	Final Exams P2 and P4		
Work to Submit					
Learning Target					

Standards for the Week	


Happy Winter Break!
December 21, 2026 - January 1, 2027