Environmental Science Pacing Guide – Block Schedule (2018 – 19). Also read, "Environmental_Science_GSE_Learning_Targets-2017-18".

Unit	Week	Assessments	GSE	Topics Covered
	1.5	Formative quiz **Summative test**	5c 5d	Evidence based argument regarding human innovations (agricultural, medical, technological, industrial); Design and defend a plan to reduce ecological footprint Environmental Science as an interdisciplinary science; Tragedy of the Commons; Intro terms; Environmental ethics; Resources; Environmental law; Ecological footprint; Environmental world views (See http://www.aurumscience.com/environmental/1_introduction/lecture.html for PowerPoint)
2 - Ecology	2	Formative quiz	1a	Levels of organization in ecosystems – organism, population, community, biosphere
		Formative quiz	1b	Food webs/chains, trophic levels. Use laws of thermodynamics to predict energy transfers in the ecosystem (10% rules).
	3	Formative quiz	1c	Construct an argument for the necessity of biogeochemical cycles (water, nitrogen, phosphorus, oxygen/carbon) for sustainable ecosystems
	4	**Summative project/ presentation**	1d	Biomes – relationships between physical factors and organismal adaptations (insolation, proximity to coastline, topography, etc…) **Ecosystem/Biome Project**
	5	Formative project – scavenger hunt	2c	Succession – Construct an argument to predict changes in biomass, biodiversity, and complexity Explore outside: observe, create timeline, make predictions
	6	**Summative Project/Presentation -** Research and present on important species.	2d	Biodiversity – ecosystem resilience (keystone, invasive, endemic, native, indicator, and endangered) **Endangered Species and Invasive Species Project**
	7	**Summative test - Ecology**	1e	Impact of physical and chemical factors on aquatic ecosystems in GA (streams, ponds, coastlines, estuaries, lakes)

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3 – Energy Consumption	8	Formative Quiz	3a	Origin and consumption of renewable (wind, solar, geothermal, biofuel, tidal) and nonrenewable energy (fossil fuels and nuclear)
		Summative Test	3b	Economic, social, environmental risks and benefits of renewable and nonrenewable energy sources Introduce 3c and 3d before fall break.
4 – Climate Change	9	Formative quiz	2a	Climate change – long (Milankovitch cycles) and short term (El Niño, volcanism) fluctuations
	10	**Summative test –** Greenhouse Effect and Global Warming	2b	Greenhouse effect – effect of CO_2 and methane on atmospheric chemistry
5- Human Population Growth	11	Formative quiz	4c	Human population growth affecting food demand and supply (GMOs, monocultures, desertification, Green Revolution)
	12	Formative Quiz	5a	Relationship between quality of life and human impact on environment (pop. growth, education, and gross national product)
	13	**Summative Test** – Human Population	5b	Analyze the demographic transition model. Compare birth and death rates in developing vs. developed nations.

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6- Human Impact	14	Formative Quiz – Loop to cycles of matter 1c	4a	Construct and revise an evidence-based claim about the effects of human activity on natural resources (ex: wastewater treatment, mining, agriculture, etc… on land, water, air, organisms)
	15	**Summative Group Project**– Assign problem, students create solutions	4b	Design, evaluate, and refine solutions to reduce human impact (smog, ozone depletion, urbanization, ocean acidification, global warming)
7- Moving toward sustainability	16	Formative Quiz	3c	Sustainability potential of renewable and nonrenewable energy sources
	17	**Summative Test**	3d	Design and defend a sustainable energy plan for your area
8 - Review	18		ALL	Review
NA (Exams)	19		ALL	Final Exams