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

Unit	Week	Assessments	GSE	Topics Covered
1 - Ecosystems	1	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).
	2	Formative quiz	1c	Construct an argument for the necessity of biogeochemical cycles (water, nitrogen, phosphorus, oxygen/carbon) for sustainable ecosystems
	3	**Summative project/ presentation**	1d	Biomes – relationships between physical factors and organismal adaptations (insolation, proximity to coastline, topography, etc…) **Assign a species… What adaptations help it survive in its biome?**
	4	**Summative test** - Ecosystems	1e	Impact of physical and chemical factors on aquatic ecosystems in GA (streams, ponds, coastlines, estuaries, lakes)
2 – Climate Change	5	Formative quiz	2a	Climate change – long (Milankovitch cycles) and short term (El Niño, volcanism) fluctuations
		Summative test – Greenhouse Effect and Global Warming	2b	Greenhouse effect – effect of CO_2 and methane on atmospheric chemistry
3 – Succession and Biodiversity	6	Formative project – scavenger hunt	2c	Succession – Construct an argument to predict changes in biomass, biodiversity, and complexity **Explore outside: observe, create timeline, make predictions**
	7	**Summative Project** - Research and present on important species.	2d	Biodiversity – ecosystem resilience (keystone, invasive, endemic, native, indicator, and endangered)
4 – 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. Project?**

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5 – Moving toward sustainability	9	Formative Research Project on sustainability potential	3c	Sustainability potential of renewable and nonrenewable energy sources
		Summative Report - sustainability plan	3d	Design and defend a sustainable energy plan for your area
6 – Human Impact	10	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)
	11	**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 – Human Population Growth and Impact	12	Formative Debate – Assign Topic/position, research, debate	4c	Human population growth affecting food demand and supply (GMOs, monocultures, desertification, Green Revolution)
	13	Formative Quiz	5a	Relationship between quality of life and human impact on environment (pop. growth, education, and gross national product)
	14	**Summative Test –** Human Population	5b	Analyze the demographic transition model. Compare birth and death rates in developing vs. developed nations.
8 – Ecological Footprint	15	Formative Quiz	5c	Evidence-based argument regarding effects of human innovations (agriculture, medical, technological, industrial)
	16	**Summative Project** – Sustainability Plan (phases: design, refine, defend)	5d	Design and defend a sustainability plan to reduce personal ecological footprint.

9 - Review	17-18		ALL	Review
NA (Exams)	19		ALL	Final Exams