

Brainstorm Possible Units for the Year – Science

Course Earth Environmental Science

Unit #	Unit Title	Days	Essential Standard	RBT Tag	Clarifying Objectives	Major Concepts	Notes
1	Principles of Science	7	NA		NA	Scientific method, graphing, metric conversions, scientific notation, introduction to maps	Variables, graph axes/labels, Scale/key/compass and types
2	Lithosphere	15	2.1	Explain Predict Explain Explain	2.1.1 2.1.2 2.1.3 2.1.4	Rock cycle, plate tectonics, volcanoes, earthquakes Locations of volcanoes, earthquakes, faults Weathering, erosion, mass movements, soil Geohazards	Rock Types, Continental drift, sea floor spreading, Appalachian Mountains Topo maps Landslides, earthquakes, tsunamis
3	Hydrosphere	14	2.3	Explain Explain Summarize Explain	2.3.2 2.3.1 2.1.1 2.1.4	Water cycle, Ground water and surface water Oceanography- currents, energy transfer, density Shorelines, barrier islands Sinkholes, flooding, pollution	NC rivers, caves, flooding, wetlands, estuaries Coriolis Effect River basins and valleys
4	Atmosphere	14	2.5	Summarize Explain Explain Predict Differentiate Explain	2.5.1 2.5.2 2.5.3 2.5.4 2.6.1 2.6.2	Structure and Composition of Atmosphere/layers Global Wind Patterns, Air Masses, Frontal Boundaries, Cloud Formation Storm Systems Weather maps/predicting weather, importance of water vapor Weather/Climate, climate categories Natural climate fluctuations	Graphs, Temperature, Chemical Composition, radiant energy/convection Pressure Differentials Cyclonic storms, storm safety, affects/influences on air density, station models (Data) Station models(interpret, analyze, predict), relative humidity, clouds, dew point, precipitation Temperate, tropical and polar climates (Koppen classification system) El Nino, La Nina, greenhouse effect

Units 1-4	Midterm	1					
5	Biosphere	10	2.7	Explain Explain	2.7.1 2.7.2	Biomes-abiotic and biotic factors and their impacts on Biodiversity Biosphere ; Biodiversity (make-up, loss of, impact of)	Classification of biomes, landforms/soils of each Infer connections with biomes/biospheres environmental conditions
6	Human Impact	14	2.7 2.8 2.2	Explain Explain Evaluate Explain	2.7.3 2.8.3 2.8.4 2.2.1	Human population changes Populations, carrying capacity, limiting factors Reduce, reuse, recycle Deforestation, mining, agriculture, overgrazing, urbanization, land use	Population clock and resource usage Logistic v/s exponential, impacts Ecological footprint, personal choices, case studies
				Compare	2.2.2	Energy sources (fossil, wood, fission, alternative)	
				Evaluate	2.4.1	Human freshwater use and management	Watershed, dams, agriculture, wells, aquifers, desalination, subsidence, salt water intrusion, recreation
				Evaluate	2.4.2	Pollution, conservation, water quality, water treatment,	Point/non-point, water testing,
				Explain	2.5.5	Air pollution, acid rain, CFCs	Mitigation of impacts
				Analyze	2.6.3	Human contribution to climate change	Deforestation, fossil fuels, mitigation of impacts on global climate change
				Attribute	2.6.4	Global climate change impacts Earth systems (sea level, ocean acidification, biosphere, temperature)	Long and short-term changes on these systems
				Explain	2.7.3	Human impact on the biosphere	Habitat alteration/degradation, invasive species, over-harvesting and mitigation of these impacts
				Evaluate	2.8.1	Alternative energies in NC (cost of, benefits of and environmental impact of)	Various alternative sources
				Critique	2.8.2	Advantages and disadvantages of sustainable techniques	Impact on environmental quality (magnitude, duration, frequency)

7	Astronomy	10	1.1	Explain Explain	1.1.1 1.1.2	Earth's motion through space Motion on Earth's axis around sun	Precession, nutation, barycenter Rotation, revolution, tilt, seasons, tides Solstices, equinoxes , Neap and Spring tides Radiation, fusion and fission, EMS Seasonal impacts, photosynthesis, Earth's surface heating (water and land), harmful effects of radiation.
	Review for Exam and Exam	5					