An Example of a Three-Level Challenge Used in High School Biology Class

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Next Generation Science Standard: HS-LS2-1: Use mathematical or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.		
Level	Highest Grade to be Earned	Challenge
I	C (Basic Proficiency)	In essay form and by analyzing a graph showing the populations of predator and prey over a 12-month period of time, students determine the carrying capacity of both predator and prey and analyze the factors affecting the rise and fall of each species' populations. (This is the same example as was discussed and evaluated during class and is an appropriate method for English language learners and some students with learning disabilities to show basic proficiency in the standard.)
II	B (Above Basic Proficiency)	In essay form and by analyzing a graph of the populations of predator, prey, and a primary producer over a 12-month period of time, students determine the carrying capacities of the predator, prey, *and producer* during a year of drought, analyzing the factors affecting the rise and fall of each species' populations. (This scenario is new to all students; the challenge asks them to apply their knowledge to a new scenario and a more difficult problem that includes an additional variable.)
III	A (High Proficiency)	In essay form and by analyzing the carrying capacity of a predator, prey, *and invasive species* over a 12-month period of time, students determine the carrying capacity of each population and analyze the rise and fall of each species' populations. (This scenario is new to all students, as is the concept of invasive species. Students will need to determine how a second prey species is competing for the primary resources and how this predator/prey relationship is affecting the ecosystem.