



Point-Intercept Transects

Learn how to measure community composition using a common transect method.

Grade level	Academic Standards			
	Performance Expectation	Sci. & Engineering Practice	Disciplinary Core Idea	Crosscutting Concept
K-2				
3-5				
6-8				
9-12	<p>HS-LS2-1. Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.</p> <p>HS-LS2-2. Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.</p> <p>HS-LS2-6. Evaluate claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.</p>	<p>USING MATHEMATICS AND COMPUTATIONAL THINKING</p> <ul style="list-style-type: none"> Mathematical and computational thinking in 9-12 builds on K-8 experiences and progresses to using algebraic thinking and analysis, a range of linear and nonlinear functions including trigonometric functions, exponentials and logarithms, and computational tools for statistical analysis to analyze, represent, and model data. Simple computational simulations are created and used based on mathematical models of basic assumptions. <p>ENGAGING IN ARGUMENT FROM EVIDENCE</p> <ul style="list-style-type: none"> Engaging in argument from evidence in 9–12 builds on K–8 experiences and progresses to using appropriate and sufficient evidence and scientific reasoning to defend and critique claims and explanations about the natural and designed world(s). Arguments may also come from current scientific or historical episodes in science. 	<p>ECOSYSTEM DYNAMICS, FUNCTIONING, AND RESILIENCE (LS2.C)</p> <ul style="list-style-type: none"> A complex set of interactions within an ecosystem can keep its numbers and types of organisms relatively constant over long periods of time under stable conditions. If a modest biological or physical disturbance to an ecosystem occurs, it may return to its more or less original status (i.e., the ecosystem is resilient), as opposed to becoming a very different ecosystem. Extreme fluctuations in conditions or the size of any population, however, can challenge the functioning of ecosystems in terms of resources and habitat availability. (HS-LS2-2),(HS-LS2-6) Moreover, anthropogenic changes (induced by human activity) in the environment—including habitat destruction, pollution, introduction of invasive species, overexploitation, and climate change—can disrupt an ecosystem and threaten the survival of some species. (HS-LS2-7) 	<p>CAUSE AND EFFECT</p> <ul style="list-style-type: none"> Empirical evidence is required to differentiate between cause and correlation and make claims about specific causes and effects. (HS-LS2-8),(HS-LS4-6) <p>SCALE, PROPORTION, AND QUANTITY</p> <ul style="list-style-type: none"> The significance of a phenomenon is dependent on the scale, proportion, and quantity at which it occurs. (HS-LS2-1) Using the concept of orders of magnitude allows one to understand how a model at one scale relates to a model at another scale. (HS-LS2-2) <p>STABILITY AND CHANGE</p> <ul style="list-style-type: none"> Much of science deals with constructing explanations of how things change and how they remain stable. (HS-LS2-6),(HS-LS2-7)