

## LESSON PLAN 1: GENERAL ECOLOGICAL CONCEPTS

### MIDDLE SCHOOL STANDARDS ADDRESSED:

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| NGSS (Kentucky, Maryland) | <p><b>MS-LS2-1: Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.</b></p> <p><b>Clarification Statement:</b> Emphasis is on cause and effect relationships between resources and growth of individual organisms and the numbers of organisms in ecosystems during periods of abundant and scarce resources.</p> <p><b>Disciplinary Core Ideas:</b></p> <ul style="list-style-type: none"><li>• Organisms, and populations of organisms, are dependent on their environmental interactions both with other living things and with nonliving factors.</li><li>• In any ecosystem, organisms and populations with similar requirements for food, water, oxygen, or other resources may compete with each other for limited resources, access to which consequently constrains their growth and reproduction.</li><li>• Growth of organisms and population increases are limited by access to resources.</li></ul> |
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### HIGH SCHOOL STANDARDS ADDRESSED:

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| NGSS (Kentucky, Maryland) | <p><b>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.</b></p> <p><b>Clarification Statement:</b> Examples of changes in ecosystem conditions could include modest biological or physical changes, such as moderate hunting or a seasonal flood; and extreme changes, such as volcanic eruption or sea level rise.</p> <p><b>Disciplinary Core Ideas:</b></p> <ul style="list-style-type: none"><li>• 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.</li></ul> |
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