

Connecting to the *Next Generation Science Standards* (NGSS Lead States 2013)

Standard MS-LS1: From Molecules to Organisms: Structures and Processes https://www.nextgenscience.org/pe/ms-ls1-5-molecules-organisms-structures-and-processes The chart below makes one set of connections between the instruction outlined in this article and the NGSS. Other valid connections are likely; however, space restrictions prevent us from listing all possibilities. The materials, lessons, and activities outlined in the article are just one step toward reaching the performance expectations listed below.	
Dimensions	Classroom Connections
Science and Engineering Practices Engaging in Argument from Evidence Construct an oral and written argument supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem.	Students generate written arguments supporting their explanations for plant growth in response to different wavelengths or colors of light. Their arguments are supported by scientific reasoning, as well as empirical evidence. This evidence is either provided spectral data or qualitative and quantitative data generated during their experiments.
Disciplinary Core Ideas LS1.B: Growth and Development of Organisms: Genetic factors as well as local conditions affect the growth of the adult plant.	Students discover that the response of plants to light depends on the species of plant as well as the color of light each plant receives. Due to differences in evolutionary history and genetic composition, one species may be more successful than another under the same light, and light color may impact species differently.
Crosscutting Concepts Patterns: Graphs, charts, and images can be used to identify patterns in data.	Students develop graphs to analyze provided data and data collected from their own experiments. Their graphs display the relationship between available wavelengths of light and resulting plant growth.
Building Towards Performance Expectation MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.	

Connections to the *Common Core State Standards* (NGAC and CCSSO 2010)

ELA WHST. 6-8.1. Write arguments focused on discipline-specific content. WHST. 6-8.2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.
Mathematics

