



# YALE NATIONAL INITIATIVE

*to strengthen teaching in public schools®*

Curriculum Units by Fellows of the National Initiative  
2021 Volume V: Human Centered Design of Biotechnology

---

## **Vertical Farming: The Future of Urban Agriculture**

Guide for Curriculum Unit 21.05.02, published September 2021

by Taissa Lau

The effects of historical redlining in urban cities, like Chicago, has exacerbated community issues related to housing, food access, and public health. The focus of this particular unit is food accessibility. The neighborhood in which my school is located is designated as a food desert meaning it lacks access to fresh, high-quality foods within a reasonable distance of neighborhood residents. The disparity of healthy food options can be further linked to issues with public health in low-income neighborhoods making this topic a top priority in achieving equity. The overarching objective of this unit is to expose students to the different stages of the engineering process, specifically focusing on the issue of food deserts, with a culminating engineering project to design an indoor controlled garden that can be used year-round to produce nutritious crops at an affordable price for the community. In order to meet the main objective, students will receive an introduction to urban agriculture and investigate the more recent farming technology of hydroponics. This unit is designed to meet standards covered within the Next Generation Science Standards and the content within can relate to Life Science and engineering.

(Developed for Science, grade 8; recommended for Science, grades 6-8)

---

<https://teachers.yale.edu>

©2023 by the Yale-New Haven Teachers Institute, Yale University, All Rights Reserved. Yale National Initiative®, Yale-New Haven Teachers Institute®, On Common Ground®, and League of Teachers Institutes® are registered trademarks of Yale University.

For terms of use visit [https://teachers.yale.edu/terms\\_of\\_use](https://teachers.yale.edu/terms_of_use)