



# Agriculture, Food, and Natural Resources Career Cluster

The Agriculture, Food, and Natural Resources (AFNR) Career Cluster focuses on the essential elements of life, food, water, land, and air. This Career Cluster includes a diverse spectrum of occupations, ranging from farmer, rancher, and veterinarian to geologist, land conservationist, and florist.

## Statewide Program of Study: *Plant Science*

The Plant Science program of study focuses on occupational and educational opportunities associated with the science, research, and business of plants and other living organisms. This program of study includes the application of biology and life science to real-world life processes of plants and vegetation, either in laboratories or in the field.



### Secondary Courses for High School Credit

- |                |   |
|----------------|---|
| <b>Level 1</b> | <ul style="list-style-type: none"> <li>Principles of Agriculture, Food, and Natural Resources</li> </ul>                  |
| <b>Level 2</b> | <ul style="list-style-type: none"> <li>Entrepreneurship I</li> </ul>  |
| <b>Level 3</b> | <ul style="list-style-type: none"> <li>Floral Design</li> <li>Horticultural Science</li> </ul>                            |
| <b>Level 4</b> | <ul style="list-style-type: none"> <li>Advanced Plant and Soil Science</li> <li>Scientific Research and Design</li> </ul> |

### Aligned Advanced Academic Courses

<b>AP or IB</b>	AP Biology AP Environmental Science IB Biology SL IB Biology HL	AP Chemistry IB Chemistry SL IB Chemistry HL
<b>Dual Credit</b>	Dual credit offerings will vary by Local Education Agency.	

*Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards Concentrator/Completer status for this program of study.*

### Work-Based Learning and Expanded Learning Opportunities

- |                                       |   |
|---------------------------------------|---|
| <b>Work-Based Learning Activities</b> | <ul style="list-style-type: none"> <li>Work in a part-time job at a landscaping company to learn about production and management of plants.</li> <li>Intern at an agricultural research company, working alongside a biological technician to learn about application of biology to plant production</li> </ul> |
|---------------------------------------|---|

#### Expanded Learning Opportunities

Participate in FFA- Future Farmers of America. Texas FFA is a dynamic youth organization that makes a positive difference in the lives of students by developing their potential for premier leadership, personal growth, and career success through agricultural education. Students compete at the local, regional, and state levels in various program events, engage in community and leadership; service activities, and meet business students across the region and the state level through participation in our FFA programs.

### Aligned Industry-Based Certifications

- BASF Plant Science Certification
- Principles of Floral Design Certification



### Example Postsecondary Opportunities

#### Apprenticeships

- Horticulturist

#### Associate Degrees

- Biology/Biological Sciences
- Biological and Physical Sciences

#### Bachelor's Degrees

- Botany/Plant Biology
- Plant Pathology/Phytopathology

#### Master's, Doctoral, and Professional Degrees

- Biochemistry
- Botany/Plant Biology

#### Additional Stackable IBCs/Licensures

- Nursery Floral License
- Horticulturist Certification



### Example Aligned Occupations

#### *Pesticide Handlers, Sprayers, and Applicators, Vegetation*

Median Wage: \$39,355  
 Annual Openings: 223  
 10-Year Growth: 17%

#### *Biological Technicians*

Median Wage: \$49,566  
 Annual Openings: 850  
 10-Year Growth: 22%

#### *Soil and Plant Scientists*

Median Wage: \$71,058  
 Annual Openings: 119  
 10-Year Growth: 31%

Data Source: Lightcast™. (2022). Occupation Table. Retrieved 9/27/2022.



For more information visit:

<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources>



# Agriculture, Food, and Natural Resources Career Cluster

## Statewide Program of Study: *Plant Science*

### Course Information

Level 1

Course	Prerequisites   Corequisites	Career Clusters
<b>Principles of Agriculture, Food, and Natural Resources*</b> 13000200 (1 credit)	<b>Prerequisites:</b> None <b>Corequisites:</b> None	

Level 2

Course	Prerequisites   Corequisites	Career Clusters
<b>Entrepreneurship I</b> 13011101 (1 credit)	<b>Prerequisites:</b> None <b>Corequisites:</b> None	

Level 3

Course	Prerequisites   Corequisites	Career Clusters
<b>Floral Design</b> 13001800 (1 credit)	<b>Prerequisites:</b> None <b>Corequisites:</b> None	
<b>Horticultural Science</b> 13002000 (1 credit)	<b>Prerequisites:</b> at least one credit in a course from the Agriculture, Food, and Natural Resources Career Cluster <b>Corequisites:</b> None	

Level 4

Course	Prerequisites   Corequisites	Career Clusters
<b>Advanced Plant and Soil Science</b> 13002100 (1 credit)	<b>Prerequisites:</b> None <b>Corequisites:</b> None	
<b>Scientific Research and Design</b> 13037200 (1 credit)	<b>Prerequisites:</b> Biology, Chemistry, Integrated Physics, Chemistry (IPC), or Physics <b>Corequisites:</b> None	

\* Indicates course is included in more than one program of study.

For additional information on the **Agriculture, Food, and Natural Resources Career Cluster**, contact [cte@tea.texas.gov](mailto:cte@tea.texas.gov) or visit <https://tea.texas.gov/cte>

San Benito CISD does not discriminate on the basis of race, color, national origin, sex, or disability in its programs or activities and provides equal access to the Boy Scouts and other designated youth groups. The following person has been designated to handle inquiries regarding the nondiscrimination policies: Title IX Coordinator: Erika Echarte, Executive Director of Administrative Services, at [eechartea@sbcisd.net](mailto:eechartea@sbcisd.net) or 956-361-6100 or ADA/Section 504 Coordinator, Janette Bristow, Health Services Coordinator, at [jmbristow@sbcisd.net](mailto:jmbristow@sbcisd.net) or 956-361-6100; Title IX Coordinator: Nancy Casas, College, Career, Military Readiness Director, at [ncasas@sbcisd.net](mailto:ncasas@sbcisd.net) or 956-361-6100; or ADA/Section 504 Coordinator: Ernesto Manriquez, Director of Special Services, at [emanriquez@sbcisd.net](mailto:emanriquez@sbcisd.net) or 956-361-6100, San Benito CISD, 240 N. Crockett St., San Benito, TX 78586.