

# Food Science Technology

## Foundations of Agriculture, Food, and Natural Resources

### **1 Demonstrate understanding of food products and processing (e.g., protein sources, food preservation). 0111.1**

- 1 Demonstrate knowledge of safe practices and procedures in food science and technology. 0111.1.1
- 2 Demonstrate knowledge of national food and health and safety guidelines. 0111.1.2
- 3 Demonstrate knowledge of Safe food handling and food borne diseases. 0111.1.3
- 4 Demonstrate knowledge of avenues for food contamination (biological, chemical, and physical). 0111.1.4
- 5 Demonstrate knowledge of food borne illness prevention. 0111.1.5
- 6 Demonstrate knowledge of use of a microscope. 0111.1.6
- 7 Apply the scientific method for the improvement of food processing safety. 0111.1.7
- 8 Identify, sketch, and compare various harmful food borne microorganisms. 0111.1.8
- 9 Identify, sketch, and compare various beneficial food microorganisms. 0111.1.9
- 10 Examine the role and conduct an experiment with food preservatives. 0111.1.10
- 11 Conduct experiments involving harmful food borne microorganisms. 0111.1.11
- 12 Demonstrate how proper food handling, storage, and processing controls microorganisms. 0111.1.12
- 13 Examine the role of pesticides, chemicals, and preservatives on foods. 0111.1.13
- 14 Track the flow of plant and animal products from production source to consumer and determine possible contamination points. 0111.1.14
- 15 Conduct a food safety assessment. 0111.1.15
- 16 Demonstrate proper handwashing procedures. 0111.1.16
- 17 Demonstrate knowledge of basic economics of food science technology. 0111.1.17
- 18 Demonstrate knowledge of American agriculture history. 0111.1.18
- 19 Demonstrate knowledge of value-added food processing. 0111.1.19
- 20 Demonstrate knowledge of food advertising and marketing. 0111.1.20
- 21 Demonstrate knowledge of agriculture commodities futures market. 0111.1.21

- 22 Locate and map the major food producing areas of the world by products. 0111.1.22
- 23 Examine global supply and demand for agricultural products. 0111.1.23
- 24 Research major agriculture innovations throughout history. 0111.1.24
- 25 Chart West Virginia, US and global production figures of agricultural commodities and products. 0111.1.25
- 26 Identify and display raw agricultural commodities and their value-added products. 0111.1.26
- 27 Determine the costs of food product processing to the consumer. 0111.1.27
- 28 Examine present consumer food demands and project future demands. 0111.1.28
- 29 Create and display packaging for an agricultural product. 0111.1.29
- 30 Examine convenience food packaging. 0111.1.30
- 31 Examine and analyze marketing and advertising of agricultural products. 0111.1.31
- 32 Create advertising and marketing items for an agricultural product. 0111.1.32
- 33 Observe and research product displays, labeling and marketing promotion techniques used in retail and wholesale food sales. 0111.1.33
- 34 Demonstrate knowledge of basic food nutrition. 0111.1.34
- 35 Demonstrate knowledge of food processing methods. 0111.1.35
- 36 Demonstrate knowledge of food additives. 0111.1.36
- 37 Demonstrate knowledge of food labeling, packaging, and portioning. 0111.1.37
- 38 Demonstrate knowledge of agricultural industry standards and grading systems. 0111.1.38
- 39 Students will demonstrate knowledge of the use of biotechnology in agriculture and food production. 0111.1.39
- 40 Students will demonstrate knowledge of regulatory food agencies and issues. 0111.1.40
- 41 Analyze and discuss industry standards and grades for agricultural commodity products. 0111.1.41
- 42 Examine & discuss food labels and compare to the food nutrition pyramid. 0111.1.42
- 43 Conduct experiments to determine food contents and nutritional elements. 0111.1.43
- 44 Process butter, ice cream, and cheese. 0111.1.44
- 45 Properly process fruits, vegetables and meats through canning, freezing, dehydrating, aging, blanching, and curing. 0111.1.45
- 46 Produce food products using biotechnology (root beer, yogurt, sauerkraut, pickles, etc.). 0111.1.46
- 47 Package processed agricultural products for sale and distribution. 0111.1.47

- 48 Participate in or explore the FFA Poultry, Meats, Livestock, Dairy Products and Food Science Career Development Events. 0111.1.48
  - 49 Conduct sensory analysis experiments for smell, taste and texture of food and food additives and enhancers. 0111.1.49
  - 50 Analyze food labels and identify food additives and enhancers. 0111.1.50
  - 51 Examine guidelines for the home processing of vegetables and meats. 0111.1.51
  - 52 Conduct food product sampling and consumer evaluation activities. 0111.1.52
  - 53 Debate and discuss food regulatory issues and the use of synthetic foods. 0111.1.53
  - 54 Conduct and present a food and agriculture awareness campaign in your local community. 0111.1.54
  - 55 Examine the World Health Organization, USDA and other governmental agencies involved with the world's food supply. 0111.1.55
  - 56 Demonstrate knowledge of Safe preparation and presentation of foods. 0111.1.56
  - 57 Demonstrate knowledge of cultural and ethnic foods. 0111.1.57
  - 58 Demonstrate knowledge of preparing a menu. 0111.1.58
  - 59 Demonstrate knowledge of organic foods. 0111.1.59
  - 60 Identify community restaurants and categorize types of foods served. 0111.1.60
  - 61 Identify global and national specialty food and ethnic preferences. 0111.1.61
  - 62 Survey students, parents, and grandparents concerning ethnic or cultural food habits. 0111.1.62
  - 63 Prepare traditional, regional American food specialties and discuss the relationship between ethnic preferences and the development of niche markets. 0111.1.63
  - 64 Construct a nutritionally sound menu and prepare a food budget for a meal. 0111.1.64
  - 65 Identify characteristics of organic foods. 0111.1.65
  - 66 Students will demonstrate knowledge of food science technology careers. 0111.1.66
  - 67 Investigate the diversity of careers in the food science, dietetics, and nutrition industries. 0111.1.67
  - 68 Conduct student interest inventories. 0111.1.68
  - 69 Identify advanced training and post-secondary educational opportunities in food science technology. 0111.1.69
  - 70 Examine labor market information. 0111.1.70
  - 71 Request post-secondary information. 0111.1.71
  - 72 Demonstrate leadership skills. 0111.1.72
-

**Foundations of  
Agriculture, Food, and  
Natural Resources**

**2 Demonstrate knowledge of leadership development through FFA. 0111.2**

- 1** Participate in FFA leadership opportunities offered at the local, state, and national level. 0111.2.1
- 2** Participate in FFA intracurricular competitive opportunities at the local, state, and national level. 0111.2.2
- 3** Participate in community service and career awareness activities at the local, state, and national level. 0111.2.3