

6.0 Apply scientific skills and principles in food science. Students who demonstrate learning can:

- 6.01 Evaluate the relationship between food markets and consumer trends.
 - COVID completely changed the relationship between food markets and consumer trends. Establishments such as restaurants, school cafeterias, sports venues, and other establishments have continued to increase when it comes to expenditures and customers. In fact, levels today are higher than any time pre-covid.
 - The food price differences between now and pre-covid reflect food safety measures and the impact from global markets. Most fruit and vegetable growers rely on seasonal labor, and labor regulations continue to impact the availability of workers.
 - Food chains like Taco Bell and Chipotle have begun incorporating plant-based foods into their menus. It is estimated that plant-based foods may claim as much as 10% of the market share by 2030.
 - Social media's impact on consumer trends. Trendy diets – cauliflower demand increased very quickly when Keto became a thing. Who ever heard of almond milk 20 years ago?
- 6.02 Examine the impact of consumer demands on food production, processing, and storage.
 - The Government Accountability Office identifies 15 federal agencies that oversee laws relating to food safety. Those agencies include the Food and Drug Administration (Health and Human Services), Food Safety and Inspection Service (Department of Agriculture), and handle most of the government's food safety systems.
 - According to the Centers for Disease Control and Prevention, around 48 million people in the United States get sick, 128,000 are hospitalized, and 3,000 people die each year from foodborne illness, and this health burden is largely preventable.
- 6.03 Evaluate advances in biotechnology that impact agriculture.
 - Biotechnology is an important tool when it comes to sustainability and food security. One advantage is assisting farmers with efficiency. Farmers are able to grow more food while improving the environment. According to the FDA, the following crop have at least one approved GMO variety in the United States:



- Corn
 - Soybean
 - Cotton
 - Potato
 - Summer Squash
 - Canola
 - Alfalfa
 - Apple
 - Sugar Beet
 - Pink Pineapple
- 6.04 Analyze the impact of marketing and labeling of food products on consumer behavior.
 - Food manufacturers provide nutritional labels, as well as other information about the attributes of their products. These labels can include price, taste, and convenience. Some labels can even include where the item was produced.
 - Food labeling is an area of food production that is heavily regulated to give consumers more informed choices. Producers must disclose nutrients, and this allows consumers an opportunity to select food based on what they deem important.
 - Students should know the differences between organic, natural, pasture raised, cage free, free range, grass fed etc.
 - 6.05 Perform safe handling practices in the preparation of food.
 - Food handling is the process of preparing food that is safe for public consumption. Food handling issues cause most foodborne illnesses. According to the World Health Organization, foodborne illnesses can cause long-lasting disability and even death.
 - 6.06 Explore career opportunities in food science.
 - Careers in food science study physical, biological, and chemical processes relating to foods to improve safety, enhance nutritional value, develop new flavors, and increase shelf-life of foods.
 - Other careers in food science focus on health, diet, and other ways food impacts human and animal health.