Food Science & Technology (19254)

Curriculum Map 2026
Mrs. Jessica DeVries
Semester Course | 18 Weeks
Schedule: 5 days/week, 50 minutes
Career Cluster: Agriculture, Food & Natural Resources

Food Science & Technology explores the science behind food production, safety, preservation, and product development. Students investigate food chemistry, microbiology, processing, packaging, and quality control while exploring careers in food science and the food industry.

Course Units & Learning Overview

Unit	Time	Standards	Focus	Key Skills Developed	Major Assessments
Introduction to Food Science & Careers	1 week	NW 1	Food science careers & industry	Career awareness & industry understanding	Career research & reflection
Food Safety & Sanitation	2 weeks	NW 3.1, 3.2	Foodborne illness & safety practices	Safe handling & contamination prevention	Food safety lab & certification test
Microbiology & Foodborne Pathogens	2 weeks	NW 3.2	Bacteria & contamination control	Microbial growth control & analysis	Pathogen case study
Food Chemistry Basics	2 weeks	NW 2	Composition of food & chemical reactions	Scientific observation & analysis	Food chemistry lab report
Nutrients & Functional Properties	2 weeks	NW 2	Proteins, fats, carbs & functionality	Ingredient function analysis	Ingredient function lab
Food Preservation & Processing	2 weeks	NW 4	Preservation methods & processing	Shelf-life & preservation techniques	Preservation comparison project
Food Packaging & Labeling	1 week	NW 4	Packaging technology & food labels	Label interpretation & packaging evaluation	Label analysis assignment
Quality Control & Sensory Evaluation	2 weeks	NW 5	Food quality & sensory testing	Sensory evaluation & data collection	Sensory evaluation lab
Product Development & Testing	3 weeks	NW 5	Recipe modification & product testing	Experimental design & evaluation	Product development project

Unit	Time	Standards	Focus	Key Skills Developed	Major Assessments
Food Industry & Sustainability	1 week	NW 1, NW 4	Food systems & sustainability	Systems thinking & environmental awareness	Sustainability reflection
Final Food Product Proposal	2 weeks	NW 5	Product design & marketing	Professional presentation & product evaluation	Product pitch & formal presentation

Skills Students Will Develop

- Safe food handling and sanitation practices
- Understanding food chemistry and nutrient functions
- Evaluating food safety risks and prevention methods
- Conducting sensory and quality evaluations
- Designing and testing food products
- Interpreting food labels and packaging
- Applying scientific reasoning in food preparation

Career & Real-World Connections

Students explore careers and industry expectations through:

- FCCLA Food Innovations & Entrepreneurship STAR Event opportunities
- Food product development and testing
- Real-world food safety and quality control practices
- Professional product presentation and evaluation

Standards Alignment

This course aligns with South Dakota Nutrition & Wellness / Food Science standards:

- **NW 1** — Food Science Careers & Industry
- **NW 2** — Food Composition & Nutrient Function
- **NW 3** — Food Safety & Sanitation
- **NW 4** — Food Processing & Preservation
- **NW 5** — Food Product Development & Quality Evaluation

Prior Knowledge Needed

No prior knowledge is required. Prior to each unit, students share what they believe the topic will cover. Instruction is adjusted to ensure all students understand the content regardless of prior experience.

Assessment Framework

Formative

- lab observations & reflections
- worksheets & quizzes
- safety practice evaluations

Summative

- food safety assessment
- preservation project
- sensory evaluation lab
- product development project

Performance-Based

- food safety lab
- sensory evaluation testing
- recipe modification experiment
- final product proposal

Differentiation & Student Support

Support Strategies

- visual demonstrations & modeling
- guided lab procedures
- vocabulary supports
- small group instruction

Enrichment

- advanced recipe modification
- food industry research
- entrepreneurship exploration
- FCCLA STAR Event participation

Classroom Management and Environment

The lab classroom is structured for safety and collaboration. Workstations support hands-on food preparation and testing. Clear procedures and safety expectations ensure a productive and safe learning environment.

Cross-Curricular Connections

- **Science:** Chemistry & Microbiology
- **Math:** measurement & data analysis
- **Health:** nutrition & food safety
- **Career Readiness:** workplace safety & professionalism

Work-Based Learning & CTSO Integration

Recommended by SD DOE:

- FCCLA Food Innovations or Entrepreneurship STAR Event
- Guest speaker from food service or food science field
- Food product testing and evaluation
- Local food production or processing exploration

Resources

Professional Organizations

- Institute of Food Technologists (IFT)
- U.S. Food & Drug Administration (FDA)
- United States Department of Agriculture (USDA)

Career Exploration

- SDMyLife

- U.S. Bureau of Labor Statistics — Food Scientists & Technologists