

# FOOD SCIENCE

## Curriculum Content Frameworks

**Please note: All assessment questions will be taken from the knowledge portion of these frameworks.**

**ATTENTION:** This course requires special training and purchase of additional equipment. For more information concerning the approval to teach this course, contact Suellen Ward at 501/682-1115 or by email at [suellen.ward@arkansas.gov](mailto:suellen.ward@arkansas.gov)

*Prepared by*

Angie Anderson, Springdale HAR-BER High School  
Peggy Bray, Genoa Central High School  
Avil Snow, Heber Springs High School  
Tammy Sparks, Bentonville High School

*Facilitated by*

Karen Chisholm, Program Manager  
Office of Assessment and Curriculum  
Arkansas Department of Workforce Education

*Edited by*

Suellen Ward, Program Manager, Family and Consumer Sciences  
Suzanne Jones, Public School Program Advisor, Family and Consumer Sciences  
Susan Prater, Public School Program Advisor, Family and Consumers Sciences  
Marna Farris, Public School Program Advisor, Family and Consumer Sciences  
Office of Family and Consumer Sciences  
Arkansas Department of Workforce Education

*Disseminated by*

Career and Technical Education  
Office of Assessment and Curriculum  
Arkansas Department of Workforce Education

# Curriculum Content Frameworks

## FOOD SCIENCE

Grade Levels: 10, 11, 12  
Course Code: 493130

Prerequisite: Food and Nutrition

Course Description: Food Science focuses on the scientific method to study the various relationships between food science, nutrition, and food preparation. Laboratory skills in measuring, recording, and analyzing data are used to explore these relationships. Experimental methods are employed to analyze food mixtures, food microbiology, food preservations, and complex food systems. Students are given insight into career possibilities as well as up to date information regarding technological advances and future trends in food preparation, preservation, evaluation, and utilization of food.

### Table of Contents

	Page
Unit 1: Orientation to Food Science	3
Unit 2: Fundamentals of Ionization	5
Unit 3: Science of Nutrition	7
Unit 4: Chemistry of Food	10
Unit 5: Science of Food Processing	12
Glossary	15

# Unit 1: Orientation to Food Science

## Hours: 10

Terminology: Biotechnology, Calibrate, Food science, Sensory evaluation, Taste blind, Variable, Volatile

<b>CAREER and TECHNICAL SKILLS</b>		<b>ACADEMIC and WORKPLACE SKILLS</b>			
What the Student Should be Able to Do		What the Instruction Should Reinforce			
Knowledge	Application	Skill Group	Skill	Description	
1.1 Define terms related to food science and food industry	1.1.1 Demonstrate knowledge of food science terms using correct context	Foundation	Reading	Applies/Understands technical words that pertain to Orientation to Food Science [1.3.6]	
			Writing	Applies/Uses technical words and concepts [1.6.4]	
1.2 Identify usage and care of scientific laboratory equipment	1.2.1 Demonstrate usage and care of equipment	Foundation	Listening	Listens to follow directions [1.2.6]	
			Reading	Comprehends written information and applies it to a task [1.3.8]	
			Science	Describes/Explains scientific principles related to Food science [1.4.14]  Follows safety guidelines [1.4.15]	
1.3 Explain procedures for labs	1.3.1 Demonstrate correct use of personal protection equipment and safety	Foundation	Listening	Listens to follow directions [1.2.6]	
			Reading	Identifies relevant details, facts and specifications [1.3.16]  Uses appropriate materials and techniques as specified [1.3.20]	
	1.3.2 Demonstrate first aid procedures for emergencies		Science	Describes/Explains scientific principles related to food science [1.4.13]  Follows safety guidelines [1.4.15]	

<b>CAREER and TECHNICAL SKILLS</b> What the Student Should be Able to Do		<b>ACADEMIC and WORKPLACE SKILLS</b> What the Instruction Should Reinforce		
<b>Knowledge</b>	<b>Application</b>	<b>Skill Group</b>	<b>Skill</b>	<b>Description</b>
	1.3.3 Submit a correct lab report		Writing	Records data [1.6.16]
	1.3.4 Apply the steps of the scientific method			
1.4 Identify qualities that make up the sensory characteristics of food	1.4.1 Take part in sensory evaluation 1.4.2 Create a sensory evaluation	Foundation	Reading  Science  Writing	Applies information and concepts derived from printed materials [1.3.3]  Comprehends written information and applies it to a task [1.3.8]  Applies scientific principles related to food science [1.4.5]  Communicates thoughts, ideas, or facts in written form in a clear, concise manner [1.6.6]  Presents answers/conclusions in a clear and understandable form [1.6.13]
1.5 Examine entry-level and higher-level jobs in the food industry	1.5.1 Using Internet technology to research careers available in the food industry  1.5.2 Discuss the role of food scientist or food technologist in producing a safe and nutritious food supply	Foundation  Personal Management	Reading  Writing  Career Awareness, Development, and Mobility	Applies information and concepts derived from printed materials [1.3.3]  Summarizes written information [1.6.17]  Develops skills to locate, evaluate, and interpret career information [3.1.4]  Explores career opportunities [3.1.6]  Identifies education and training needed to achieve goals [3.1.8]

## Unit 2: Fundamentals of Ionization

**Hours: 10**

Terminology: Acidosis, Alkalosis, Buffer, Concentration, Density, Equivalence point, Heat of fusion, Heat of vaporization, Latent heat, Melting point, pH scale, Polar molecule, Solute, Solution, Solvent, Titration

CAREER and TECHNICAL SKILLS		ACADEMIC and WORKPLACE SKILLS			
What the Student Should be Able to Do		What the Instruction Should Reinforce			
Knowledge	Application	Skill Group	Skill	Description	
2.1 Define terms related to ionization of food substances	2.1.1 Demonstrate knowledge of ionization terms using correct context	Foundation	Reading	Applies/Understands technical words that pertain to Fundamentals of Ionization [1.3.6]	
			Writing	Communicates thoughts, ideas, or facts in written form in a clear, concise manner [1.6.6]	
2.2 Explain the properties of water	2.2.1 Illustrate water as a polar molecule  2.2.2 Examine the following properties of water: freezing, melting, boiling, condensing, sublimation, and surface tension	Foundation	Reading	Applies/Understands technical words that pertain to Food Science [1.3.6]	
			Science	Interprets drawings to obtain factual information [1.3.17]	
			Writing	Describes/Explains scientific principles related to Food Science [1.4.13]	
2.3 Explain function of water in food preparation	2.3.1 Compare solubility of free and bound water  2.3.2 Compare free and bound water	Foundation	Reading	Summarizes written information [1.6.17]	
			Science	Uses appropriate materials and techniques as specified [1.3.20]	
2.4 Describe the process of ionization and how it relates to the formation of acids and bases	2.4.1 Diagram the process of ionization  2.4.2 Explain hydrogen and hydroxide ions	Foundation	Reading	Applies/Uses scientific method [1.4.6]	
			Science	Describes/Explains scientific principles relate to Food Science [1.4.13]	
			Writing	Analyzes and applies what has been read to specific task [1.3.2]	
				Constructs graph of data [1.4.9]	
				Analyzes data, summarizes results, and makes conclusions [1.6.2]	
				Records data [1.6.16]	

<b>CAREER and TECHNICAL SKILLS</b>		<b>ACADEMIC and WORKPLACE SKILLS</b>			
What the Student Should be Able to Do		What the Instruction Should Reinforce			
<b>Knowledge</b>	<b>Application</b>	<b>Skill Group</b>	<b>Skill</b>	<b>Description</b>	
2.5 Explain neutralization	2.5.1 Diagram the process of neutralization	Foundation	Math	Calculates measurements taken from measuring devices [1.1.9]	
	2.5.2 Demonstrate titration		Reading	Uses appropriate materials and techniques as specified [1.3.20]	
			Science	Monitors variables in experiment [1.4.18] Uses equipment and techniques in Food Science [1.4.24]	
			Writing	Analyzes data, summarizes results, and makes conclusions [1.6.2] Records data [1.6.16]	
		Thinking	Problem Skills	Demonstrates logical reasoning in reaching a conclusion [4.4.2]	
2.6 Describe the properties of acids and bases	2.6.1 Identify the pH of common foods	Foundation	Reading	Applies information to job performance [1.3.4] Comprehends written information and applies it to a task [1.3.8]	
	2.6.2 Create a chart of acids and bases using color, taste, and texture		Science	Performs experiment as specified [1.4.19]	
			Writing	Composes and creates documents — letters, manuals, reports, proposals, graphs, flow charts, etc. [1.6.8]	

## Unit 3: Science of Nutrition

### Hours: 15

Terminology: Amine group, Coagulation, Foams, Gelatinization, Glucose, Paste, Rancid, Retrogradation, Solidification point, Syneresis, Triglycerides, Viscosity

<b>CAREER and TECHNICAL SKILLS</b>		<b>ACADEMIC and WORKPLACE SKILLS</b>		
What the Student Should be Able to Do		What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
3.1 Define terms related to the science of nutrition	3.1.1 Demonstrate knowledge of nutrition terms using correct context	Foundation	Reading	Applies/Understands technical words that pertain to Chemistry of Food [1.3.6]
			Writing	Applies/Uses technical words and concepts [1.6.4]
3.2 Describe monosaccharides and disaccharides	3.2.1 Display samples of monosaccharides and disaccharides	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3]
			Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]
			Science	Describes/Explains scientific principles related to food science [1.4.13]
3.3 Describe the properties of sugar	3.3.1 Experiment with the following properties of sugar: sweetness, caramelization, solubility, and crystallization	Foundation	Reading	Comprehends written information and applies it to a task [1.3.8]
			Writing	Draws conclusions from what is read [1.3.12] Analyzes data, summarizes results, and makes conclusions [1.6.2] Summarizes written information [1.6.17] Organizes information into an appropriate format [1.6.10]
3.4 Compare structures of amylose and amylopectin	3.4.1 Explain the different effects of these two types of molecules on cooking	Foundation	Reading	Comprehends written information and applies it to a task [1.3.8]
	3.4.2 Compare the efforts of thickening agents in food products		Science	Draws conclusions from what is read [1.3.12] Constructs graph of data [1.4.9] Monitors variables in experiment [1.4.17]

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
			Writing	Organizes information into an appropriate format [1.6.10]  Summarizes written information [1.6.17]
3.5 Examine the structure of triglycerides	3.5.1 Explain the importance of a carboxyl group to the structure of triglycerides  3.5.2 Compare and contrast properties of saturated and unsaturated fats	Foundation	Reading  Science  Writing	Uses appropriate materials and techniques as specified [1.3.20]  Applies knowledge to complete a practical task [1.4.3]  Constructs model to depict basic concepts of food science [1.4.11]  Communicates thoughts, ideas, or facts in written form in a clear, concise manner [1.6.6]
3.6 Describe the oxidation of fat in foods	3.6.1 Analyze ways lipid oxidation can be controlled in food	Foundation	Reading  Science  Writing	Analyzes and applies what has been read to specific task [1.3.2]  Comprehends written information for main ideas [1.3.7]  Applies knowledge to complete a practical task [1.4.3]  Applies a scientific principle to solve a problem [1.4.7]  Analyzes data, summarizes results, and makes conclusions [1.6.2]  Communicates thoughts, ideas, of facts in written form in a clear concise manner [1.6.6]

<b>CAREER and TECHNICAL SKILLS</b> What the Student Should be Able to Do			<b>ACADEMIC and WORKPLACE SKILLS</b> What the Instruction Should Reinforce		
<b>Knowledge</b>	<b>Application</b>		<b>Skill Group</b>	<b>Skill</b>	<b>Description</b>
3.7 Describe the chemical structure of protein	3.7.1	Explain what happens during the denaturation of protein	Foundation	Reading	Comprehends written information and applies it to a task [1.3.8]
	3.7.2	Demonstrate factors that affect the stability of egg foam		Science	Applies knowledge to complete a practical task [1.4.3]
Speaking				Constructs model to depict basic concept of food science [1.4.11] Communicates a thought, idea or fact in spoken form [1.5.7]	
Writing	Organizes ideas and communicates oral messages to listeners [1.5.7] Analyzes data, summarizes results, and makes conclusions [1.6.2]				
3.8 Describe ways in which protein is used in food preparation	3.8.1	Analyze the affect of acid on protein	Foundation	Reading	Analyzes and applies what has been read to specific task [1.3.2]
	3.8.2	Examine the use of proteins in emulsions, foams, gels, and gluten		Science	Monitors variables in experiment [1.4.17]
				Writing	Communicates thoughts, ideas, or facts in written form in a clear, concise manner [1.6.6]

## Unit 4: Chemistry of Food

### Hours: 15

Terminology: Activation energy, Active site, Continuous phase, Dispersed phase, Enzymatic browning, Fermentation, Saturated solution, Unsaturated solution

CAREER and TECHNICAL SKILLS			ACADEMIC and WORKPLACE SKILLS		
What the Student Should be Able to Do			What the Instruction Should Reinforce		
Knowledge	Application		Skill Group	Skill	Description
4.1 Define terms related to chemistry of food	4.1.1 Demonstrate knowledge of terms using correct context		Foundation	Reading	Applies/Understands technical words that pertain to Chemistry of Food [1.3.6]
				Science	Records data related to food science [1.4.21]
				Writing	Applies/Uses technical words and concepts [1.6.4]
4.2 Describe how enzyme reactions affect preparation of foods	4.2.1 Explain the functions of enzymes as catalysts in chemical reactions		Foundation	Reading	Applies/Understands technical words that pertain to food science [1.3.6]  Comprehends written information and applies it to a task [1.3.8]
				Writing	Applies/Uses technical words and concepts [1.6.4]  Analyzes data, summarizes results, and makes conclusions [1.6.2]
	4.2.2 Demonstrate enzymatic browning in fruit		Science	Records data related to Chemistry of Food [1.4.21]  Uses equipment and techniques for Food Science [1.4.23]	
	4.2.3 Explain the following conditions that affect enzyme activity: temperature, pH, and water			Speaking	Communicates a thought, idea, or fact in spoken form [1.5.5]
4.3 Describe the properties of saturation and solubility in a solution	4.3.1 Observe the effect of temperature on solubility of sugar and salt solutions		Foundation	Science	Describes/Explains scientific principles related to Chemistry of Food [1.4.13]
					Applies a scientific principle to solve a problem [1.4.7]

<b>CAREER and TECHNICAL SKILLS</b> What the Student Should be Able to Do		<b>ACADEMIC and WORKPLACE SKILLS</b> What the Instruction Should Reinforce		
<b>Knowledge</b>	<b>Application</b>	<b>Skill Group</b>	<b>Skill</b>	<b>Description</b>
	4.3.2 Calculate the concentration of solution, using mass percent		Writing Math	Presents answers/conclusions in a clear and understandable form [1.6.13] Applies a mathematical formula to solve a problem [1.1.3]
4.4 Identify foams and emulsions	4.4.1 Determine the role of foams and emulsions in foods  4.4.2 List various food in each type of emulsion  4.4.3 Make an emulsion	Foundation	Reading  Science  Writing	Uses computer in mathematical applications — information processing, problem solving [1.3.8]  Comprehends written specifications and applies them to a task [1.3.9]  Describes/Explains scientific principles related to Chemistry of Food [1.4.13]  Solves practical problems using scientific methods and techniques [1.4.22]  Communicates thoughts, ideas, or facts in written form in a clear, concise manner [1.6.6]
4.5 Identify function and properties of leavening agents	4.5.1 Observe production of carbon dioxide using baking powder  4.5.2 Compare different amounts of leavening agents used in cake	Foundation	Reading  Science  Writing	Analyzes and applies what has been read to specific task [1.3.2]  Monitors variables in experiment [1.4.17]  Analyzes data, summarizes results, and makes conclusions [1.6.2]
4.6 Describe mold, yeast and bacterial fermentation	4.6.1 Observe how a variety of environments affect yeast growth  4.6.2 Use guest speaker or have students provide samples to illustrate fermentation	Foundation	Reading  Science  Writing	Uses appropriate materials and techniques as specified [1.3.20]  Monitors variables in experiment [1.4.17]  Analyzes data, summarizes results, and makes conclusions [1.6.2]

## Unit 5: Science of Food Processing

### Hours: 10

Terminology: Delaney Anti Cancer Clause, Flash frozen, Food additive, GRAS List, Irradiation, Radiation

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce			
Knowledge	Application	Skill Group	Skill	Description	
5.1 Define terms related to the science of food processing	5.1.1 Demonstrate knowledge of terms using correct context	Foundation	Reading	Applies/Understands technical words that pertain to Science of Food Processing [1.3.6]	
			Writing	Applies/Uses technical words and concepts [1.6.4]	
5.2 Identify causes of food spoilage with emphasis on the microorganisms	5.2.1 Analyze the growth rate of microorganisms	Foundation	Reading	Analyzes and applies what has been read to a specific task [1.3.2]	
	5.2.2 Identify foods susceptible to growth and the spread of foodborne illnesses		Science	Performs experiment as specified [1.4.19]	
			Writing	Analyzes data, summarizes results, and makes conclusions [1.6.2]	
5.3 Describe properties of microorganisms that cause foodborne illness and spoilage	5.3.1 Compare bacteria populations in meat	Foundation	Reading	Draws conclusions from what is read [1.3.12]	
				Analyzes and applies what has been read to specific task [1.3.2]	
			Science	Performs experiment as specified [1.4.19]	
			Observes health code/sanitation requirement [1.4.18]		
				Follows safety guidelines [1.4.15]	
	5.3.2 Discuss personal habits during food preparation/handling that prevent foodborne illness		Speaking	Participates in conversation, discussion, and group presentations [1.5.8]	
		Writing	Analyzes data, summarizes results, and makes conclusions [1.6.2]		
				Presents answers/conclusions in a clear and understandable form [1.6.13]	

<b>CAREER and TECHNICAL SKILLS</b>		<b>ACADEMIC and WORKPLACE SKILLS</b>			
What the Student Should be Able to Do		What the Instruction Should Reinforce			
<b>Knowledge</b>	<b>Application</b>	<b>Skill Group</b>	<b>Skill</b>	<b>Description</b>	
5.4 Describe the function of the FDA	5.4.1 Research the FDA on the Internet	Foundation	Reading  Science  Writing	Comprehends written information for main ideas [1.3.7]  Applies/Uses scientific method [1.4.6]  Communicates thoughts, ideas, or facts in written form in a clear, concise manner [1.6.6]	
5.5 Identify how additives are regulated	5.5.1 Describe the differences between the Delaney Clause and GRAS List	Foundation	Reading	Comprehends written information and applies it to a task [1.3.8]	
5.6 Identify advantages and disadvantages of using food additives	5.6.1 Describe the main function of food additives  5.6.2 Explain the differences between natural and artificial additives	Foundation	Reading   Science  Writing	Comprehends written information and applies it to a task [1.3.8]  Determines what information is needed [1.3.10]  Records data related to food processing [1.4.21]  Communicates thoughts, ideas, or facts in written form in a clear, concise manner [1.6.6]	

<b>CAREER and TECHNICAL SKILLS</b>		<b>ACADEMIC and WORKPLACE SKILLS</b>			
What the Student Should be Able to Do		What the Instruction Should Reinforce			
<b>Knowledge</b>	<b>Application</b>	<b>Skill Group</b>	<b>Skill</b>	<b>Description</b>	
5.7 Describe how freezing affects food preservation	5.7.1 Compare methods of freezing food	Foundation	Reading	Analyzes and applies what has been read to specific task [1.3.2]  Applies information and concepts derived from printed materials [1.3.3]  Identifies relevant details, facts and specifications [1.3.16]	
	5.7.2 Identify types of food that can be successfully freeze dried		Science	Describes/Explains scientific principles related to Food Science [1.4.13]	
5.8 Describe how irradiation preserves food	5.8.1 Examine the arguments for and against irradiation of food	Foundation	Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]	
			Reading	Analyzes and applies what has been read to specific task [1.3.2]	
5.9 Examine packaging used to contain foods	5.9.1 Compare modified atmosphere and aseptic packaging	Foundation	Science	Acquires and processes scientific data [1.4.1]  Analyzes data, summarizes results, and makes conclusions [1.6.2]	
			Reading	Analyzes and applies what has been read to specific task [1.3.2]	
			Writing	Solves practical problems using scientific methods and techniques [1.4.22]  Analyzes data, summarizes results, and makes conclusions [1.6.2]	

# **Glossary**

## **Unit 1: Orientation to Food Science**

1. Biotechnology – scientists' use of the tools of modern genetics in the age old process of improving plants, animals, and microorganisms for food production
  
2. Calibrate – to check, adjust, or standardize the marks on a measuring instrument
  
3. Food Science – the study of producing, processing, preparing, preserving, evaluating, and using food
  
4. Sensory Evaluation – scientifically testing food, using the human senses of sight, smell, taste, touch, and hearing
  
5. Taste Blind – the inability to distinguish between the flavors of some foods
  
6. Variable – a factor that can change in an experiment
  
7. Volatile – the process of changing into a vapor; unstable

## Unit 2: Fundamentals of Ionization

1. Acidosis – an imbalance of a blood pH of 7.2 or lower
2. Alkalosis – an imbalance of a blood pH of 7.6 or higher
3. Buffers – substance that helps maintain the balance of hydrogen and hydroxide ions in a solution; A system of buffers holds blood pH steady at a slightly basic 7.4.
4. Concentration – the measure of the amount of a substance in a given unit of volume
5. Density – a substance mass per unit of volume
6. Equivalence Point – the point at which neutralization occurs when an acid and a base neutralize each other; also called End Point
7. Heat of Fusion – the amount of heat needed to change 1.0g of a substance from solid to liquid phase
8. Heat of Vaporization – the amount of heat needed to change 1.0g of a substance from liquid phase to the gas phase
9. Latent Heat – the heat required to create a phase change without a change in temperature
10. Melting Point – the temperature at which a substance changes from a solid to a liquid
11. pH Scale – a mathematical scale in which the concentration of hydrogen ions in a solution is expressed as a number from 0 to 14 to indicate acidity
12. Polar molecule – a molecule with a clear division of opposite electrical charges
13. Solute – the substance that is dissolved in a solution
14. Solution – a homogeneous mixture in which one substance is dissolved in another
15. Solvent – the substance that dissolves another substance in a solution
16. Titration – a common method used in a laboratory to determine the concentration of an acid or base

## Unit 3: Science of Nutrition

1. Amine group – a group composed of two atoms of hydrogen and one atom of nitrogen and written NH<sub>2</sub>; contained in amino acids
2. Coagulation – to change a liquid into a soft semisolid or solid mass
3. Foams – air bubbles incorporated and trapped in a protein film by whipping, as in meringue
4. Gelatinization – an irreversible thickening process; hydrogen bonds form between starch and water molecules, causing starch granules to absorb water and swell
5. Glucose – the basic sugar molecule from which all other carbohydrates are built
6. Paste – a thickened starch mixture
7. Rancid – describes the unpleasant flavors that develop as fats oxidize in food
8. Retrogradation – The amylose molecules shift and orient themselves in crystalline regions, forming a somewhat gritty texture in the mixture.
9. Solidification point – the temperature at which a melted fat regains its original firmness
10. Syneresis – water that leaks from a gel as it ages, as in pudding
11. Triglycerides – the largest class of lipids, including nearly all of the fats and oils people typically eat
12. Viscosity – the resistance to flow

## Unit 4: Chemistry of Food

1. Activation Energy – the energy required to start a chemical or biological reaction
2. Active Site – the part of an enzyme molecule that attaches to the substrate; the enzyme surface where the chemical reaction takes place
3. Continuous phase – a liquid in which droplets of an immiscible liquid are dispersed in an emulsion
4. Dispersed phase – the substance existing in a droplet form in an emulsion
5. Enzymatic browning – the discoloration of fruits and vegetables when peeled caused by enzymes
6. Fermentation – a chemical reaction that splits complex organic compounds into relatively simpler substances
7. Saturated solution – a solution that contains all the solute it can possibly hold at a specific temperature
8. Unsaturated solution – a solution that contains less solute than it can possibly hold at a given temperature

## Unit 5: Science of Food Processing

1. Delaney Anti Cancer Clause – A clause in the Food Additive Amendment to the United States Food, Drug, and Cosmetic Act that says that a substance shown to cause cancer in humans or animals may not be added to food in any amount.
2. Flash frozen – a method used in the food industry to freeze foods very quickly
3. Food additive – a substance added to food products that cause desired changes in the products
4. GRAS List (Generally Recognized as Safe) – a prepared list by the US Food and Drug Administration of about 700 substances that have proved to be safe for use in food processing
5. Irradiation – a commercial food preservation method that exposes food to gamma rays to increase shelf life and kill harmful microorganisms
6. Radiation – the transfer of energy in the form of infrared rays