

Consumer & Life Studies Brunswick School Department
Food Science
Sugar

Essential Understandings	<ul style="list-style-type: none"> ▪ The average American eats 100 pounds of sugar per year.
Essential Questions	<ul style="list-style-type: none"> ▪ What are the types and origins of sugars? ▪ What is a sugar substitute? ▪ What are the nutrient contributions of sugars? ▪ What are the chemical reactions and solution changes that occur when a sugar solute is heated to a variety of temperatures?
Essential Knowledge	<ul style="list-style-type: none"> ▪ There are four kinds of sugars used for cooking: granulated sugar, confectioner's sugar, brown sugar, and maple sugar. ▪ There are five kinds of sugar syrups that are used in cooking: molasses, corn syrup, maple syrup, sorghum syrup, and honey. ▪ Sugar substitutes are good for use in small quantities but are currently not used as a direct substitute in cooking. ▪ Sugars are a simple carbohydrate. They provide energy in the form of calories. ▪ A solution is saturated when a given solute has dissolved all of the sugar that it can hold. ▪ The higher the temperature, the more concentrated the saturated solution becomes. ▪ As you heat the solution to a higher and higher saturation point, the results of cooling the solution will change (soft-ball, firm-ball, hard-ball, soft-crack, and hard-crack). ▪ Recipes that add other kinds of sugars, after cooking, interfere with the crystallization process, and minimize the chance that the candy will crystallize too soon.
Vocabulary	<ul style="list-style-type: none"> ▪ <u>Terms:</u> ▪ candy thermometer, cold water candy test, supersaturated sugar solution
Essential Skills	<ul style="list-style-type: none"> ▪ Identify and compare the types of sugars and syrups and discuss the use of each in cooking. ▪ Compare the nutritive value of foods high in sugar with those low in sugar content. ▪ Distinguish the stages of a supersaturated solution and evaluate the cooled product at varying saturation points.
Related Maine Learning Results	<p><u>Health and Physical Education</u></p> <p>A. Health Concepts</p> <p>A1. Healthy Behaviors and Personal Health</p> <p>Students predict how behaviors impact health status.</p> <ol style="list-style-type: none"> Analyze individual responsibility for enhancing health. Predict how healthy behaviors can positively impact health status. Describe barriers to practicing healthy behaviors. Examine personal susceptibility to, and the potential severity of, injury or illness if engaging in unhealthy behaviors.

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<p>Related Maine Learning Results</p>	<p>A3.Diseases/Other Health Problems Students explain causes of common diseases, disorders, and other health problems and propose ways to reduce, prevent, or treat them.</p> <p>A4.Environmental and Personal Health Students determine the interrelationship between the environment and other factors and personal health.</p> <p>a. Analyze how environment and personal health are interrelated.</p> <p>b. Describe how genetics and family history can impact personal health.</p> <p>B. Health Information, Products and Services</p> <p>B1.Validity of Resources Students evaluate the validity and accessibility of health information, products, and services.</p> <p>C. Health Promotion and Risk Reduction</p> <p>C2.Avoiding/Reducing Health Risk Students demonstrate a variety of behaviors to avoid or reduce health risks to self and others.</p> <p>a. Develop ways to recognize, avoid, or change situations that threaten the safety of self and others.</p> <p>b. Develop injury prevention and response strategies including first aid for personal, family, and community health.</p> <p>D. Influences on Health</p> <p>D1.Students analyze and evaluate influences on health and health behaviors.</p> <p>a. Analyze how family, school and community influence the health of individuals.</p> <p>b. Analyze how peers influenced healthy and unhealthy behaviors.</p> <p>c. Evaluate the effect of the media on personal and family health.</p> <p>d. Analyze how the perceptions of norms influence healthy and unhealthy behaviors.</p> <p>e. Analyze how culture and personal values and beliefs influence individual health behaviors.</p>
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<p>Related Maine Learning Results</p>	<p>E. Communication and Advocacy Skills E1. Interpersonal Communications Skills Students utilize skills for communicating effectively with family, peers, and others to enhance health. a. Demonstrate effective communication skills including asking for and offering assistance to enhance the health of self and others. b. Demonstrate refusal, negotiation, and collaboration skills to enhance health and avoid and reduce health risks. c. Demonstrate strategies to prevent, manage, or resolve interpersonal conflicts without harming self or others. E2. Advocacy Skills Students demonstrate ways to influence and support others in making positive health choices. b. Adapt health messages and communication techniques for different audiences. F. Decision-Making and Goal-Setting Skills F1. Decision-Making Students apply a decision-making process to enhance health. a. Compare the value of thoughtful decision-making to quick decision-making in a health-related situation. d. Defend the healthy choice when making a decision. <u>Career and Education Development</u> A. Learning About Self-Knowledge and Interpersonal Relationships A3. Interpersonal Skills Students demonstrate positive interpersonal skills and evaluate successful strategies that improve positive interpersonal skills in ways that lead to success in a variety of school, work, and community settings. a. Getting along with others. b. Respecting diversity. c. Working as a member of a team. d. Managing conflict. e. Accepting/giving/using constructive feedback. f. Accepting responsibility for personal behavior. g. Demonstrating ethical behavior. h. Following established rules/etiquette for observing/listening. i. Demonstrating safe behavior. j. Dealing with peer pressure.</p>
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<p style="text-align: center;">Related Maine Learning Results</p>	<p>B. Learning about and Exploring Education and Career and Life Roles</p> <p>B1.Relationships Among Learning, Work, the Community, and the Global Economy Students evaluate strategies for improving educational achievement, increasing participation as an involved citizen, and increasing work options and earning potential in a 21st century global economy.</p> <p>B2.Skills for Individual/Personal Success in the 21st Century Students evaluate strategies to improve skills that lead to lifelong learning and success in the classroom, and the achievement of schoolwork, work and career, and personal life goals.</p> <ol style="list-style-type: none"> a. Literacy skills b. Numeracy c. Critical thinking skills d. Information and communication technology (ICT) e. Interpersonal skills f. Other academic skills and knowledge <p>B3.Education and Career Information Students use previously acquired knowledge and skills to evaluate and utilize a variety of resources to articulate a plan and make decisions for post-secondary education, training, and career choices.</p> <p>C. Learning to Make Decisions, Plan and Create Opportunities, and Make Meaningful Contributions</p> <p>C1.The Planning Process Students use the planning process to make school-to-school and school-to-work decisions.</p> <ol style="list-style-type: none"> a. Self-knowledge b. Looking for and creating personal career options c. Decision-making skills
<p style="text-align: center;">Sample Lessons And Activities</p>	<ul style="list-style-type: none"> ▪ Lecture notes on sugar and saturating a solution ▪ Cooking in the foods laboratory
<p style="text-align: center;">Sample Classroom Assessment Methods</p>	<ul style="list-style-type: none"> ▪ Food laboratory ▪ Sugar test

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Sample Resources	<ul style="list-style-type: none">▪ <u>Publications:</u><ul style="list-style-type: none">○ <u>Better Homes and Gardens, New Cookbook, 1930-2005, Limited Anniversary Edition</u>, Meridith Books, Pg.175-184
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