Unit 2 The Food Science Lab

Content Area: **21st Century Life and Careers**
Course(s): **Food Science**
Time Period: **NovDec**
Length: **school year**
Status: **Published**

Title Section

Department of Curriculum and Instruction

Belleville Public Schools

Curriculum Guide

Food Science

Grades 10-12

Belleville Board of Education

102 Passaic Avenue

Belleville, NJ 07109

Prepared by: Judy Porter

Dr. Richard Tomko, Superintendent of Schools

Mr. Thomas D'Elia, Director of Curriculum and Instruction

Ms. Diana Kelleher, District Supervisor of ELA/Social Studies

Mr. George Droste, District Supervisor of Math/Science

Board Approved: Revised September 19, 2016

Unit Overview

This Unit 2 food science lab will focus on proper food safety ,sanitaion, sensory perception and the scientiific method.

- Academic and career skills and behaviors that relate positively to successful achievement.
- Communication skills for problem solving, decision making, and efficiently working with others.
- Basic first aid for emergencies.
- Accident prevention for the kitchen.
- Prevention of food borne pathogens
- Sanitation procedures , food safety & cross contamination
- The safe care and operation of kitchen tools and equipments.
- Safety procedures for the kitchen both in the home and the classroom.
- Sanitation procedures for the kitchen both in the home and the classroom
- The scientific method
- Sensory evaluation of food
- Problem Solving and Criticial thinking Skills
- Management Skills

NJSLS

9.3.12.AG	Agriculture, Food & Natural Resources
9.3.HT.1	Describe the key components of marketing and promoting hospitality and tourism products and services.
9.3.12.AG.3	Examine and summarize the importance of health, safety and environmental management systems in AFNR businesses.
9.3.HT.5	Identify potential, real and perceived hazards and emergency situations and determine the appropriate safety and security measures in the hospitality and tourism workplace.
9.3.12.AG.5	Describe career opportunities and means to achieve those opportunities in each of the Agriculture, Food & Natural Resources Career Pathways.
9.3.HT.6	Describe career opportunities and means to attain those opportunities in each of the Hospitality & Tourism Career Pathways.
9.3.HT-RFB.2	Demonstrate safety and sanitation procedures in food and beverage service facilities.
9.3.HT-RFB.4	Demonstrate leadership qualities and collaboration with others.
CAEP.9.2.8.B.1	Research careers within the 16 Career Clusters ® and determine attributes of career success.

Exit Skills

What are the skills that the students should have obtained by the end of this unit?

By the end of Unit s SWDAT identify and evaluate:

- Distinguish between safe and unsafe kitchen lab practices
- Examine proper use of a variety of lab equipment and appliances
- Knowledgeably discuss the importance of kitchen cleanlness
- Kitchen safety and kitchen sanitation procedures
- Importance to exercise good personnel hygiene
- Identify taste buds
- Evaluate Sensory perception
- Develop understanding for the scientific method

Enduring Understanding

Enduring Understanding:

1. Food is essential for maintaining the physical and psychological needs of the human body.
2. Technology advances affect food production, new food inventions, and provide convenience in our personnal food selection.
3. The art of cooking requires skill and knowledge
4. The sensory evaluation of food plays an important role with food choice
5. The scientific method is used in all aspects of life

Essential Questions

Essential Question: A question that lies at the heart of a subject or a curriculum and one that promotes inquiry and the discovery of a subject.

- How does food satisfy physical needs, and fulfill psychological needs of the human body?
- What influences our food choices?
- How does taste perception affect individuals likes and dislikes of food?
- Why are regional foods important in our food selection?
- Is the student able to identify the educational food science course goals?
- Does the student exhibit proper classroom procedures that contribute positively to the learning environment?
- Does the student exhibit competence in speaking, listening, and the writing process as skills and tools for learning?
- Is the student able to evaluate academic and career skills related to school and employment?
- Is the student able to select and apply appropriate solutions to solve and prevent dangerous situations and accidents in the kitchen lab?
- Can the student explain and demonstrate proper food handling practices, personal cleanliness, and kitchen sanitary guidelines to avoid and prevent food-borne illness?
- Is the student able to develop a kitchen work plan to efficiently participate in the food lab to prepare a recipe?
- Why is safety an important issue in the kitchen lab??
- Why is sanitation important and how are food borne illness pevented?
- To what extent does the purchase and food effect its quality?
- In what ways do technological advances mpact meal planning, preperation, and purchasing decisions?
- Is the student able to identify the micro organisms related to certain foods and health symptoms?
- Is the student able to identify allergenic sensitive foods?
- Can the student explain and demonstrate proper food handling practices, personal cleanliness, and kitchen sanitary guidelines to avoid and prevent food-borne illness?
- Can the student demonstrate proper food storage procedures

Learning Objectives

Tips on Writing Good Learning Objectives

Bloom's Taxonomy

Applying Bloom's Taxonomy to Learning Objectives

Effective learning objectives need to be observable and/or measureable, and using action verbs is a way to achieve this. Verbs such as "identify", "argue," or "construct" are more measureable than vague or passive verbs such as "understand" or "be aware of". As you develop your syllabus focus on articulating clear learning objectives and then use these objectives to guide class assignments, exams and overall course assessment questions.

Sample Learning Objectives for a Lower Division Course

After completing Nutrition 101 *Humans and Food*, students will be able to:

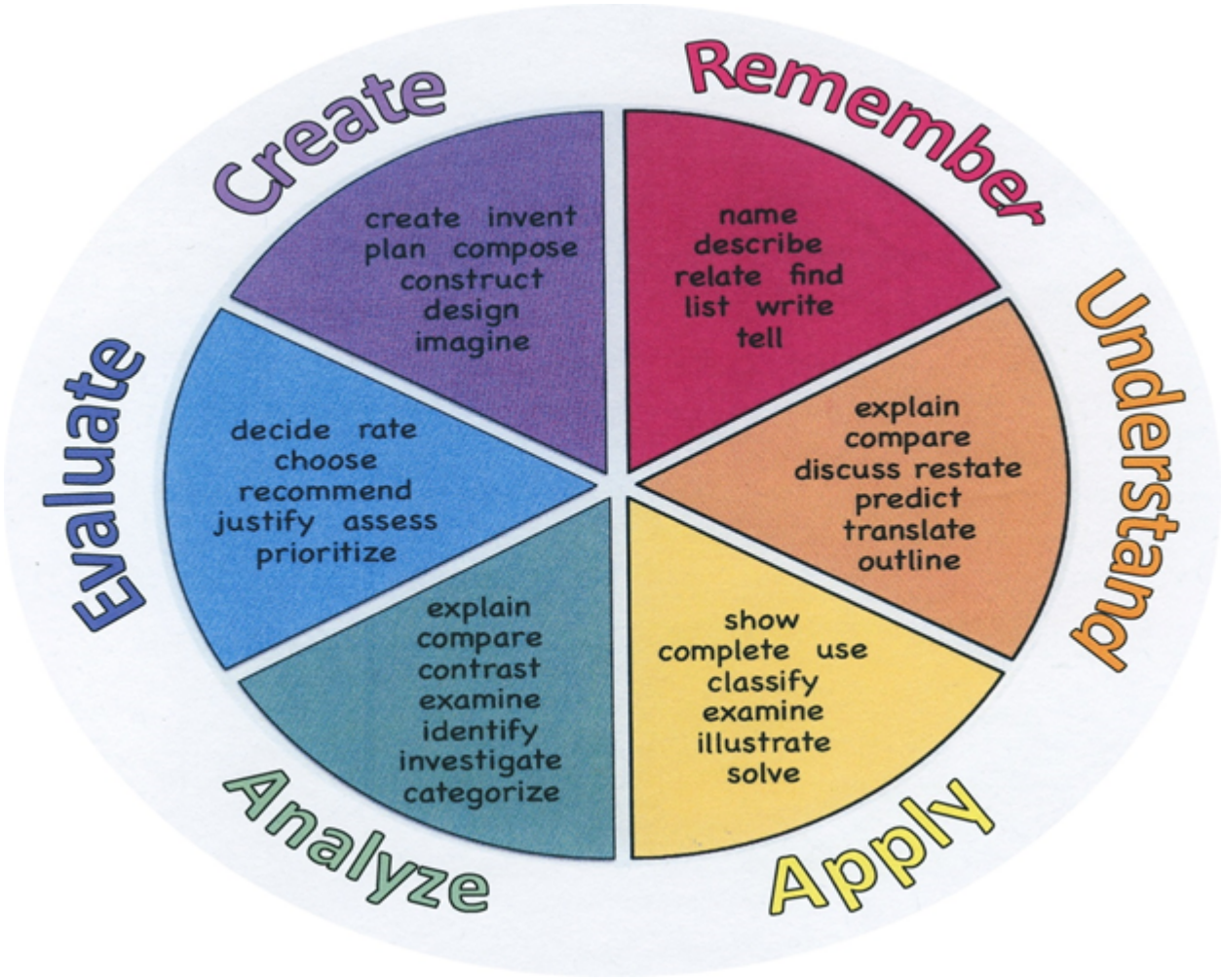
- **Identify** 6 steps of the Scientiific method
- Use computer to create a hypothesis and **summarize** results
- **Locate** hypothesis related question on the Internet and use **evaluative** criteria to **identify** reliability of the information

Action Verbs

Below are examples of action verbs associated with each level of the Revised Bloom's Taxonomy. These are useful in writing learning objectives, assignment objectives and exam questions.

Remember	Understand	Apply	Analyze	Evaluate	Create
Choose	Classify	Choose	Categorize	Appraise	Combine
Describe	Defend	Dramatize	Classify	Judge	Compose
Define	Demonstrate	Explain	Compare	Criticize	Construct
Label	Distinguish	Generalize	Differentiate	Defend	Design
List	Explain	Judge	Distinguish	Compare	Develop
Locate	Express	Organize	Identify	Assess	Formulate
Match	Extend	Paint	Infer	Conclude	Hypothesize
Memorize	Give Examples	Prepare	Point out	Contrast	Invent
Name	Illustrate	Produce	Select	Critique	Make
Omit	Indicate	Select	Subdivide	Determine	Originate
Recite	Interrelate	Show	Survey	Grade	Organize
Select	Interpret	Sketch	Arrange	Justify	Plan
State	Infer	Solve	Breakdown	Measure	Produce
Count	Match	Use	Combine	Rank	Role Play
Draw	Paraphrase	Add	Detect	Rate	Drive
Outline	Represent	Calculate	Diagram	Support	Devise
Point	Restate	Change	Discriminate	Test	Generate
Quote	Rewrite	Classify	Illustrate		Integrate
Recall	Select	Complete	Outline		Prescribe
Recognize	Show	Compute	Point out		Propose
Repeat	Summarize	Discover	Separate		Reconstruct
Reproduce	Tell	Divide			Revise
	Translate	Examine			Rewrite
	Associate	Graph			Transform
	Compute	Interpolate			

	Convert Discuss Estimate Extrapolate Generalize Predict	Manipulate Modify Operate Subtract			



Interdisciplinary Connections

Please list all and any cross-curricular content standards that link to this Unit.

LA.RST.9-10.1	Accurately cite strong and thorough evidence from the text to support analysis of science and technical texts, attending to precise details for explanations or descriptions.
LA.RST.9-10.2	Determine the central ideas, themes, or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.
LA.RST.9-10.3	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.

Alignment to 21st Century Skills & Technology

Key SUBJECTS AND 21st CENTURY THEMES

Mastery of key subjects and 21st century themes is essential for all students in the 21stcentury.

Key subjects include:

- English, reading or language arts
- World languages
- Arts
- Mathematics
- Economics
- Science
- Geography
- History
- Government and Civics

21st Century/Interdisciplinary Themes

- Civic Literacy
- Environmental Literacy
- Financial, Economic, Business and Entrepreneurial Literacy
- Global Awareness
- Health Literacy

21st Century Skills

- Communication and Collaboration
- Creativity and Innovation
- Critical thinking and Problem Solving
- ICT (Information, Communications and Technology) Literacy
- Information Literacy
- Life and Career Skills
- Media Literacy

Technology Infusion

What technology can be used in this unit to enhance learning?



Differentiation

As a Reminder:

The basis of good differentiation in a lesson lies in differentiating by content, process, and/or product.

Resources:

- NJDOE: Instructional Supports and Scaffolds for Success in Implementing the Common Core State Standards http://www.state.nj.us/education/modelcurriculum/success/math/k2/

Special Education

- printed copy of board work/notes provided
- additional time for skill mastery
- assistive technology
- behavior management plan
- Center-Based Instruction
- check work frequently for understanding
- computer or electronic device utilizes
- extended time on tests/ quizzes
- have student repeat directions to check for understanding
- highlighted text visual presentation
- modified assignment format
- modified test content
- modified test format
- modified test length
- multi-sensory presentation
- multiple test sessions
- preferential seating
- preview of content, concepts, and vocabulary
- reduced/shortened reading assignments
- Reduced/shortened written assignments
- secure attention before giving instruction/directions
- shortened assignments
- student working with an assigned partner
- teacher initiated weekly assignment sheet
- Use open book, study guides, test prototypes

ELL

- teaching key aspects of a topic. Eliminate nonessential information

- using videos, illustrations, pictures, and drawings to explain or clarif
- allowing products (projects, timelines, demonstrations, models, drawings, dioramas, poster boards, charts, graphs, slide shows, videos, etc.) to demonstrate student's learning;
- allowing students to correct errors (looking for understanding)
- allowing the use of note cards or open-book during testing
- decreasing the amount of workpresented or required
- having peers take notes or providing a copy of the teacher's notes
- modifying tests to reflect selected objectives
- providing study guides
- reducing or omitting lengthy outside reading assignments
- reducing the number of answer choices on a multiple choice test
- tutoring by peers
- using computer word processing spell check and grammar check features
- using true/false, matching, or fill in the blank tests in lieu of essay tests

Intervention Strategies

- allowing students to correct errors (looking for understanding)
- teaching key aspects of a topic. Eliminate nonessential information
- allowing products (projects, timelines, demonstrations, models, drawings, dioramas, poster boards, charts, graphs, slide shows, videos, etc.) to demonstrate student's learning
- allowing students to select from given choices
- allowing the use of note cards or open-book during testing
- collaborating (general education teacher and specialist) to modify vocabulary, omit or modify items to reflect objectives for the student, eliminate sections of the test, and determine how the grade will be determined prior to giving the test.
- decreasing the amount of workpresented or required
- having peers take notes or providing a copy of the teacher's notes
- marking students' correct and acceptable work, not the mistakes
- modifying tests to reflect selected objectives
- providing study guides
- reducing or omitting lengthy outside reading assignments
- reducing the number of answer choices on a multiple choice test
- tutoring by peers
- using authentic assessments with real-life problem-solving
- using true/false, matching, or fill in the blank tests in lieu of essay tests
- using videos, illustrations, pictures, and drawings to explain or clarify

Evidence of Student Learning-CFU's

Please list ways educators may effectively check for understanding in this secion.

- Admit Tickets
- Anticipation Guide
- Common benchmarks
- Compare & Contrast
- Create a Multimedia Poster
- Define
- Describe
- Evaluate
- Evaluation rubrics
- Exit Tickets
- Explaining
- Fist- to-Five or Thumb-Ometer
- Illustration
- Journals
- KWL Chart
- Newspaper Headline
- Outline
- Question Stems
- Quickwrite
- Quizzes
- Red Light, Green Light
- Self- assessments
- Socratic Seminar
- Study Guide
- Teacher Observation Checklist
- Think, Pair, Share
- Think, Write, Pair, Share
- Top 10 List
- Unit tests

Primary Resources

Please list all resources available to you that are located either within the district or that can be obtained by district resources.

- Textbook: *Discovering Food and Nutrition*
- Textbook: *Food, Nutrition & Wellness*
- *Textbook: The Bio-chemistry of Food and Nutrition*
- *Textbook: Teachers Editio*
- *Teacher prepared packets*
- Power Point Presentation

- Lab/Experiments
- Guest speakers
- Research Assignments
- Smart Board
- Internet
- Online Resources Glencoe.com
- Demonstrations
- Unit Project
- Group work
- Chapter worksheets/questions
- student notebook
- Unit test

Ancillary Resources

Please list ALL other resources available to strengthen your lesson.

Do Now: What taste buds are on the tongue?

- Life experience
- Guest Speaker
- Feld Trip
- Current Events
- Media Center
- Food Magazines
- Scientific journals
- Medical Journal
- Youtube training video

Sample Lesson

One Lesson per Curriculum must bein this lesson plan template. I.e. one lesson in one unit

Unit Name:
NJSLS:

Interdisciplinary Connection:

Statement of Objective:

Anticipatory Set/Do Now:

Learning Activity:

Student Assessment/CFU's:

Materials:

21st Century Themes and Skills:

Differentiation/Modifications:

Integration of Technology: