

**Culinary Arts Integrated Lesson**

**Course:** *Chemistry/Culinary Arts (in the chemistry classroom, doing culinary arts standards)*

**Unit Name:** *Integrated fermentation/leavening unit*

**Lesson Name:** *Chemistry day 1 and Culinary Day 2 & 3*

**Time Frame:** *2 days*

**Grade Level:** 9-12

**Standards:** *13.0,13.1, 13.3, 13.4, 13.5  
chemistry: strand 5 concept 4 po2, Strand 5 concept 4 po9*

Objectives	Check for Understanding	Unit Assessment
The student will identify the indicators of a chemical change.	The student will observe a demonstration & written examples and describe what types of chemical changes they observe	Observation / evaluation
The student will predict the products of a chemical reaction using types of reactions	Identification among various chemical reactions, the student will correctly identify the correct type.	Evaluation
The students will observe an assortment of baked goods and guess the leavening possibilities	Discussion/brainstorming	Evaluation  Completion of worksheet
The students will watch the pretzel dough being prepped	Questioning during demonstration	
The students will shape and season the dough into pretzels	Guidance and assistance during preparation	Preparation
The students will bake and sample the pretzels	Maintain correct procedures during lab preparation	Sample and evaluate product
The students will prepare and bake biscuits	Guide throughout cooking lab experience	
The students will complete the leavening worksheet upon completion of chemistry demonstration and baking laboratory	Monitor and assist as students process understanding of reactions	
The students will observe the effect of leavening agents on	Guide discussion and understanding of leavening	

an assortment of baked products	throughout baking process	
The students will prepare and evaluate a yeast dough and product	Monitor product completion	

<b>Personalized Learning</b>		
<b>Interest</b>	<b>Learning Styles</b>	<b>Readiness</b>
Discussion Pictures of baked goods, demo Laboratory experience Pretzel, biscuit production Observation of leavening and fermentation process	Oral learners Visual learners Kinesthetic learners Creative learners Scientific	Set activities Building interest Following demonstration Complete lab planning sheet Desire to test quality product

<b>Learning Structures/Strategies</b>
<p><b>Set for Interest</b> Introduction and picture analysis</p> <p><b>Teaching the Objective</b> Show, discuss, demonstrate, explain, prepare, test and evaluate</p> <p><b>Check for Understanding</b> Discussion/brainstorming Questioning during demonstration Guidance and assistance during preparation Maintain correct procedures during lab preparation Guide throughout cooking lab experience Monitor and assist as students process understanding of reactions Guide discussion and understanding of leavening throughout baking process Monitor product completion</p> <p><b>Acquiring New Knowledge</b> Complete worksheet, prepare and analyze leavening product</p> <p><b>Check for Understanding</b></p> <p>Materials and Resources: Pictures of leavened baked products Product analysis worksheet All ingredients necessary for product production Product evaluation form</p> <p><b>Closure</b> Following chemistry presentation and observation and completion of baked goods, and completion of product evaluation the students will discuss their newfound knowledge of the fermentation and leavening process.</p>