Course: *Culinary Arts / Chemistry (integrate chemistry into the culinary arts classroom)*

Unit Name: *Baking / Fermentation*

Time Frame: *1 week*

Essential Questions: *What are the by-products of the fermentation products? How can these be used in baked goods?*

Alignment		
Performance Objectives	**Level of Proficiency**	**Assessments**
Culinary Arts: The students will observe the effect of leavening agents on an assortment of baked products The students will prepare and evaluate a yeast and baking powder dough and product . Chemistry: Strand5 Concept 4 PO2 Identify the indicators of a chemical change. Identify indications of a chemical change.	Learner outcome: Observation Successful leavened product describe the 3 characteristics (evolution of a gas, color change, change in temperature)	Explanation following the demonstration. Complete and evaluate worksheet. Production of pretzels and biscuits. Identify 3 characters in given written and demonstrated situations

Personalized Learning		
Interest	**Processing**	**Readiness**
Baked goods	Discuss baked products and the varieties of leavening processes	Visual (pictures) to spawn discussion

Unwrapping		
Priority Standards, Concepts, Performance Objectives	**Verb Analysis and steps**	**Content to Be Taught**
Chemistry: Strand 5 - Physical Science Concept 4 po9 Investigate relationships between reactants and products in chemical reaction. Predict products formed. Culinary Arts: Standard 13 Demonstrate the chemical processes involved in leavening and fermentation 13.1 Compare and contrast the	The student will describe products, reactants, and the five types of chemical reactions (listed in content to be taught) The students will observe an assortment of baked goods and guess the leavening possibilities	Chemical reactions: reactant and product, 5 types of reactions (synthesis, decomposition, single replacement, double replacement, combustion) Assortment of leavening agents Requirements of different leavening agents

major leavening agents and their properties 13.3 Outline the properties of yeast as a leavening agent 13.4 Demonstrate the difference between quick breads and yeast breads 13.5 Explain the reasons for fermenting foods	The students will watch the pretzel dough being prepped The students will shape and season the dough into pretzels The students will bake and sample the pretzels The students will prepare and bake biscuits The students will complete the leavening worksheet upon completion of chemistry demonstration and baking laboratory	Procedure for yeast bread preparation