

Chemistry ... What a Pizza!!!



A grade 9-10 chemistry module on
chemical reactions and reaction rate

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Abstract

Pizza is a food very popular among teenagers and, together with pasta, is a typical food in Italian gastronomy. The aim of this work is to start from a known food to analyze, from a scientific point of view, the chemical transformations that take place during its preparation. Students are also encouraged to reflect on the parameters that can affect the final product. Furthermore, this activity promotes observation and reflection skills of students who are encouraged to deal with a practical problem (how to cook a good pizza) using an inquiry scientific methodology and an experimental approach. We also want to attract young people to the study of chemistry through everyday life phenomena, overcoming the hostility that often makes difficult the learning of complex concepts. We are sure that there can be no learning without the motivation.

Activity

What chemical reaction takes place during the leavening?

What are the reagents and products of this reaction? Is it possible to identify them?

What is the role of the leaven?

By changing the amount of reagent, which results could be achieved?

Changing working conditions (time, temperature ...), which results could be achieved?

Through the answers to these questions, found by discussion/debate, web searches, interviews with experts and experimental activity, students will learn to isolate a chemical reaction in a complex phenomenon in order to correctly identify the reagents and the products and to understand the influence of some parameters on the reaction rate.

Overall Objectives/Competencies

Competencies

- To use the inquiry scientific method to study a phenomenon;
- To encourage learning motivation through teamwork;
- "Learn to learn" for a meaningful learning;
- To argue in public about various topics.

Objectives

- To learn the concept of chemical transformation;
- To identify the transformation in a complex phenomenon;
- To identify the parameters that influence the transformation;
- To carry out simple qualitative and quantitative laboratory tests.

Curriculum content

Chemical reactions and reaction rate

Methodology

Web searches, class discussion, concept maps, cooperative learning, experimental activity

Anticipated time

7-8 lessons

Prior Learning

Concept of chemical transformation

Sections included		
1.	Student activities (for students)	Describes the scenario in more detail and the tasks the students should perform
2.	Teaching guide	Suggests a teaching approach
3.	Assessment	Gives suggested formative assessment strategies