Organic Chinese Food

By: Marjorie Langston
Subject: Chemistry/Physical Science

Objective: to understand functional groups of organic molecules in food

Ohio Benchmark:
Physical Sciences
- Grades 6-8
  - Benchmark A: Relate uses, properties, and chemical processes to the behavior and/or arrangement of the small particles that compose matter.
  - Grade Level Indicator, Nature of Matter, #4: Describe that physical and chemical changes occur all around us (e.g. the human body, cooking, and industry)
- Grades 9-10
  - Benchmark A: Describe that matter is made of minute particles called atoms and atoms are comprised of even smaller components. Explain the structure and properties of atoms.
  - Grade Level Indicator, Nature of Matter, #9: Investigate the properties of pure substances.
- Grade 12
  - Benchmark A: Explain how variations in the arrangement and motions of atoms and molecules form the basis of a variety of biological, chemical, and physical phenomena.
  - Grade Level Indicator, Nature of Matter, #2: Explain how atoms join with one another in various combinations in distinct molecules.

Procedure:
Days 1-3: Introduce and practice identification of functional groups of organic molecules according to outlined curriculum.

Days 4-8: Students will
1. Find a recipe
2. Research the ingredients for 7 of the following:
   a. Organic molecules present
   b. Formula
   c. Structure
   d. Chemical Properties
   e. Functional Groups
3. Obtain a picture of the dish.
4. Arrange information nicely on a posterboard, PowerPoint, or Prezi. Share one chemical form their poster.
5. Make 4-6 servings of the dish and bring it in for the class for a food day.

Note: This can easily be taught at lower grade levels by removing the functional group component.

Assessment: See handout
Organic Chinese Food

Introduction: Your objective to observe the presence of organic molecules in food.

Procedure:
1. Research a Chinese recipe.
2. Type the recipe.
3. Research the ingredients for 9 of the following:
   a. Chemical present: name and formula
   b. Chemical Properties
   c. Structure
   d. Functional Groups
   *Note: Some ingredients have more than one chemical in them while others (are or) have only one.
4. Obtain a picture of the dish.
5. Arrange your information (recipe, research, and picture) nicely on a posterboard, PowerPoint, or Prezi.

*Your posterboard/PowerPoint/Prezi is due on ________________________.

6. Make 4-6 servings of the dish and bring it in for the class.

*You are to bring your food on ____________________________.

You will be graded according to the expectations below. Turn this paper in with your Poster/PowerPoint/Prezi.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Chemical: Name and Formula</th>
<th>Structure</th>
<th>Chemical Property</th>
<th>Functional Groups</th>
</tr>
</thead>
<tbody>
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## Organic Chinese Food

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<tr>
<th>Ingredient</th>
<th>Chemical: Name and Formula</th>
<th>Structure</th>
<th>Chemical Property</th>
<th>Functional Groups</th>
<th>Recipe</th>
<th>Picture of Dish</th>
<th>Overall Appearance</th>
<th>Food Brought for Class</th>
<th>Total</th>
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Remember: *Organic* in organic food is different from *organic* in organic chemistry.