

Confluence IX

Culinary Reactions: The Chemistry In Your Kitchen

Project Descriptor

In groups of 4 created from your Foundations block, you will create an interactive demonstration/exhibit that explains a chemical reaction that occurs during the preparation of food, in other words, a *culinary reaction*. Your group's demonstration should be similar to what you might see at OMSI or the Science Factory.

Each group will need to prepare 2 versions of your demonstration, one that's kid friendly (4th-8th grade) and one for adults. These demonstrations should be 8-10 minutes in length.

Explore

During the explore phase you will chose and then research a chemical reaction that your demonstration/exhibit will be built around.

Design

When you're designing your demonstration consider multiple options. You'll need to make a materials list of the things you'll need. Write the 1st draft of your script, don't forget you need to consider 2 different audiences. The script should incorporate all of your group members in a meaningful way. Finally, draw up some preliminary designs for an infographic to help your audience see the chemistry.

Create

During the create phase you'll complete all the components of the project: Research, Script, Infographic. You'll also need to make sure your group gets all the materials necessary. Finally, learn your lines and practice.

Refine

After each panel, use the feedback to refine all the elements of your project: research, infographic design, script.

Own

Present your demonstration at Confluence IX.

Potential Confluence Topics

- * Maillard Reaction (cooking meat)
- * Making a quick bread or cake using a leavening agent
- * Baking bread using yeast
- * Making yogurt
- * Making cheese using acid
- * Making cheese using biological agents
- * Making cheese using Rennet
- * Sauerkraut
- * Putting acid on cut apples to keep them from browning
- * Maise
- * Caramelization
- * Spherification
- * Making vinegar from alcohol
- * Chocolate production (fermentation)
- * Cooking proteins with heat (ex: eggs)
- * Ceviche
- * Mayonnaise/Salad dressing
- * Butter
- * Pickles
- * Whipped cream
- * Marshmallows
- * Whipped egg whites (meringues)

Panel #1 Culinary Reactions

Required Portfolio Elements:

- ❑ **Cover Page:** This should go at the front of your portfolio and should include group topic, your group members' names, and your chemical reaction.
- ❑ **Calendar:** The calendar will be the third page. Use the calendar pages provided and add in specific goal dates such as prototype 1 exhibit, chemistry research done, speech written, etc.
- ❑ **Identify Chemical Reaction:** This should be a half page summary of what you will be covering in your presentation. Include what chemical reaction you would like to cover, what type of reaction it is, what types of bonds exist, and a balanced equation for the reaction (if available). Also include where the reaction is used in food, how you plan to demonstrate the reaction, and how you plan on getting the audience involved.
- ❑ **Chemistry Research:** Include any printed sources as well as notes. You should be able to talk about what you have learned from your research so far.
- ❑ **Source List for Research:** Group members should have a typed list of 3-5 sources in MLA format.

Expectations:

- All documents should be typed (calendar can be filled in by hand)
- Your folder should be well organized and neat, no crumpled up papers.
- All group members should dress professionally.

Culinary Reactions

Group Members _____

Chemical Reaction:

Portfolio Components

- Cover Page
- Calendar
- Half Page on Chemical Reaction
- Chemical Reaction Research
- Source List in MLA format

Overall Grade

General Presentation Components

All group members engaged and have a meaningful role.

1 2 3 4

Group has a sense of professionalism.

1 2 3 4

Group has a completed and professional portfolio.

1 2 3 4

Content

Chemical reaction identified, group can discuss and demonstrate a clear understanding of the concept.

1 2 3 4

Group can discuss how their chemical reaction relates to food.

1 2 3 4

Group can share initial exhibit ideas and ideas for audience participation.

1 2 3 4

Comments:

October 2013

September 2013	October 2013	November 2013
S M T W T F S	S M T W T F S	S M T W T F S
1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7 8 9
8 9 10 11 12 13 14	8 9 10 11 12 13 14	10 11 12 13 14 15 16
15 16 17 18 19 20 21	15 16 17 18 19 20 21	17 18 19 20 21 22 23
22 23 24 25 26 27 28	22 23 24 25 26 27 28	24 25 26 27 28 29 30
29 30	29 30 31	

Work Home

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
X					X	X
X	Start Project		PSAT No class		X	X
X					X	X
X				Panel #1	X	X
X						X

November 2013

October 2013	November 2013	December 2013
S M T W T F S	S M T W T F S	S M T W T F S
1 2 3 4 5 6 7	1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9 10 11 12
8 9 10 11 12 13 14	10 11 12 13 14 15 16	13 14 15 16 17 18 19 20 21 22 23
15 16 17 18 19 20 21	17 18 19 20 21 22 23	20 21 22 23 24 25 26 27 28 29 30 31
22 23 24 25 26 27 28	24 25 26 27 28 29 30	
29 30		

Work Home

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
					X	X
X			Panel #2	Student Lead → Confereres	X	X
X	No School				X	X
X				Panel #3	X	X
X	Thanksgiving Break				X	X

December 2013

November 2013	December 2013	January 2014
S M T W T F S	S M T W T F S	S M T W T F S
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Work
Home

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 X	2 No School	3	4	5	6 X	7 X
8 X	9	10 Confluence	11	12	13 X	14 X
15	16	17	18	19	20	21
———— Winter —————						
22	23	24	25	26	27	28
———— Break —————						
29	30	31				
————						