Panel #2 Culinary Reactions

Required Portfolio Elements:

- ❑ **First Draft of 2 Scripts:** Your group must prepare **two** 8-10 minutes scripts, one for adults and one for late elementary/early middle school age students. Your script should explain your Chemical Reaction in a way that is simple enough that they can understand, but complex enough that it holds their attention. This will be different for each script.

  Your script must also contain an interactive element. This means your audience is somehow involved in the skit. The interactive portion CAN be the same for both the adult script and the children's script if it is appropriate for both audiences.

- ❑ **Designs for Visual Aid:** You must have at least **two** designs for your visual aid. It should be easy to read and understand as well as useful.

- ❑ **Performance Design:** Each group will have 15 minutes on stage for their presentation. What will the set up be? What props will you need? Where will they be? You need a sketch of what the stage will look like during your performance on the night of confluence.

- ❑ **Refined Chemistry Explanation:** If there was anything in your Chemistry explanation that needed to be fixed after panel 1, you need to present your revisions. We want to hear what you changed and what your original misunderstanding was.

- ❑ **Materials List:** Group members should have the attached Materials List Sheet filled out and ready to turn in.

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 Materials List

Materials	Cost per Item	# Needed	Total Cost

Total _____

Group Names: _____

_____

_____

_____

Panel #2

Culinary Reactions

Group Members_____

Chemical Reaction:

Portfolio Components

Overall Grade

- ❑ Calendar (filled out to Panel 3)
- ❑ Rough Draft of script for adults
- ❑ Rough Draft of script for kids.
- ❑ Two designs for visual aid
- ❑ Sketch of presentation
- ❑ Materials List (Please Collect)

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

Scripts are 8-10 min in length and age appropriate for audience.	1	2	3	4
Scripts contain clear explanation of the chemistry. Chemistry is explained in multiple ways.	1	2	3	4
Script has engaging and relevant interactive component.	1	2	3	4
Visual Aid designs are applicable and aid in understanding of the Chemistry.	1	2	3	4
Sketch of the presentation is clear and detailed.	1	2	3	4

Comments:

Group:_____

PANEL 2

Culinary Reactions	Directions: For each of the 6 areas check the appropriate box that reflects the group's proficiency level for each area.
4 Beyond	☐ All group members are engaged & each has a designed & meaningful role in the presentation; all members have a sense of professionalism & are professional dressed. ☐ Group can articulate a clear & in-depth understanding of the topic & what they are teaching their audience. ☐ Group can articulate a clear & detailed plan on how chemistry will be demonstrated at Confluence. ☐ Visual Aids are relevant and aid in the understanding of the chemical reaction ☐ Scripts are complete; chemistry is clear & engaging; scripts contain a relevant interactive component that enhances ☐ Portfolio is complete; all documents are in order, organized & typed (notes & calendar do not need to be typed); looks professional
3 Proficient	☐ All group members are engaged & each has a designed role in the presentation; all members have a sense of professionalism & are professional dressed. ☐ Group can articulate a clear understanding of the topic & what they are teaching their audience. ☐ Group can articulate a clear plan on how chemistry will demonstrated at Confluence; plan might not be detailed. ☐ Visual Aids are relevant; however they may confuse rather than aid in the understanding of the chemical reaction ☐ Scripts are complete; chemistry is clear; script might lack engagement at times; scripts contain a relevant interactive component ☐ Portfolio is complete; all documents are in order; some documents not typed (notes & calendar do not need to be typed)
2 Approaching	☐ All group members are not engaged; not everyone has a role in the presentation; lack of professionalism and/or professional dress. ☐ Group has a limited understanding of the topic & what they are teaching their audience. ☐ Group has an unclear plan on how chemistry will demonstrated at Confluence; plan shows a lack of understanding of their reaction. ☐ Visual Aids not complete; might have only 1; or may lack relevance; design does not aid in the understanding of chemical reaction. ☐ Scripts not complete; may have only 1 done; or no real differentiation for audiences; no interactive component, or not relevant ☐ Portfolio is incomplete; documents out of order or missing; portfolio does not look professional (not typed)

PANEL 2

Culinary Reactions: The Chemistry in Your Kitchen: Script Descriptor

Purpose

One way that students can show they know about a subject is to write a skit. You can be creative while simultaneously incorporating facts about your topic. Now that you've researched your chemical reaction, it's time to put your research into script (8-10 minutes in length) form so you can teach it to an audience. Your group will need to write 2 scripts 1 for a younger audience and 1 for adults. Within your scripts you need to involve the audience, making it interactive.

Make sure to keep your audience in mind. You are not writing this script to amuse yourselves; instead, you are writing to teach your audience about chemical reactions that occur in the kitchen.

Remember, the chemistry needs to make sense—you also need to be able to teach the chemical reaction in terms that your audience will understand. It needs to be written so that your audience understands the "how" and "why" of the science.

Note: The earlier you get your script written and make any necessary revisions, the sooner you'll be able to get your lines learned for your performance.

Six Steps to Success

Step 1
Review your research and the chemistry concepts you want to teach.

Step 2
Create a list of characters that you want to involve in the skit. Remember, your whole group needs to be involved.

Step 3
Write the basic story line you want to use. Choose the props you need and incorporate them into the story. Make the story enjoyable, entertaining and informative in ways appropriate to the audience. Keep science concepts simpler for younger kids and include more detailed science information for an adult audience. You also need to work in the interactive aspect of your group's presentation. Depending on what your group decides this could be the same for both scripts.

Step 4
Add dialogue to the story to incorporate each science concept you want to teach. Work to maintain a smooth conversational style between skit characters. Read through the script after you add dialogue to ensure it is engaging and conveys the science information you are trying to teach without sounding like a lecture.

Step 5
Provide stage directions to explain character movement, prop use and line delivery.

Step 6
Create a final version of your script and hand out parts. Give your group time to read through the script before you prepare to present the skit. Gather the required props and practice, practice, practice. (Confluence performances should be done from memory.)

[Shiloh puts them in yeast wear]

SA: So our volunteers are going to be like the yeast in our ginger ale and show us the fermentation process.

M: After a while, they get hungry—so they start to eat the sugar.

[Shiloh gives bowl of sugar/candy to volunteers]

SA: Now, the sugar we used is called sucrose—remember it's the $C_{12}H_{22}O_{11}$ part of our chemical equation.(points to chemical reaction on projector)

M: Sucrose is made up of 2 parts: glucose and fructose—during our chemical reaction these sugars go through a series of chemical steps called glycolysis.

SC: Hold on Science girl. What's glycolysis? (wags finger in lighthearted accusation)

M: Glycolysis is the name of the process where sugar gets broken down into pyruvate—the stuff that becomes ethyl alcohol.

K: Hold on---pyru—a what? (bewilderedly)

SA: Pyruvate, in humans turns into lactic acid, but in yeast, it turns into ethyl alcohol.

K: What's lactic acid?

M: Lactic acid is what's produced by the cells in your muscles when you exercise. That's what makes you sore.

SH: So if we were like yeast, instead, of getting sore we'd get drunk. (excited and matter of factly)

SA: Now as our yeast continue to eat they are gaining energy—or ATP which stands for Adenosine Triphosphate. (annunciate as if teaching)

M: As a byproduct of making all this ATP, or energy, the yeast produce small amounts of alcohol and carbon dioxide, aka CO_2.

[Shiloh instructs yeast volunteers to blow bubbles-releasing CO_2 at audience]

SA: In the end, this is what makes our ginger ale carbonated.
(points to volunteers blowing bubbles)

SH: And slightly alcoholic. (pipes up enthusiastically)

SC: So the bubbles that tickle my nose are really just CO_2? (amazed)

M: That's right. Now, to finish our ginger ale, after 2 days of letting the yeast do what yeast will do---we'll move our bottle to the fridge—this will stop the fermentation process.
(puts bottle underneath table where audience can no longer see it)

#K: How does putting the ginger ale in the fridge stop the reaction?

SA: When the yeast gets cold, they get sleepy and don't have the energy to keep eating and digesting the sugars.