Chemicals – R – Us

Step 5 Worksheet

Mass Production

(turn this in with your journal)

Due Date: _____

You have now created the "ideal" product. After three trials, the qualities of your product should now be present, and in the best possible amounts. It is now time for mass production.

1. Determine the amount of an individual "serving" of your product. Discuss this with your partner. Determine its mass. How will you package it? Will it dry out? Do you need it in some kind of container? Write a supply order for the packaging material.

2. Design a label for your package. Items that should be on the label include: List of ingredients from greatest % to least %, safety considerations, weight of product (in SI units), and directions for use. **EXTRA CREDIT:** Create the following fictitious items for the label: brand name, logo, product name, address of company, phone number of company, copyright, and price bar. Determine its price (Remember, your company should make a profit). Then make a magazine advertisement for your product.

3. Count the number of students in your class. Multiply by 3 (for those out-of-state experts and for your comparison tests). Determine the amount of raw materials you need. Be sure to take into account your % yield. Write a supply order, making sure to compare suppliers' prices. Order as cheaply as you can. Give your supply order and equipment request to your teacher.

4. You will be making 2 "batches" of your recipe. (This way you can make a larger second batch if you didn't estimate the recipe correctly.)

    a. Divide your raw materials by 2. Create a recipe for this final procedure. Predict the amount of product this should make. Make your first batch. Measure the amount you made. Determine your % yield. Were you right? Adjust your recipe. Test your first batch for those important qualities you want the product to possess. Are they still there? Package your product.

    b. Make your second batch, using your adjusted recipe from step a.. Again, measure the amount you made and determine your percent yield. Test for the qualities your product should possess. Package this batch too.

    c. Give 1/3 of your product to your teacher for export (via UPS) to those out of state product testers. Save 1/3 of your product for your presentation. The last 1/3 will be used for our own class testing.

Name:_____ Period:_____

Name:_____ Date:_____

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Step 5 Supply Order

Number/ Amount	Name of Item	Catalogue/ Page Number	Unit Price	Total Price

Name:_____ Period:_____

Name:_____ Date:_____

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Step 5 Equipment Request

Number/ Amount	Name of Item

Name:_____ Period:_____

Name:_____ Date:_____

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Step 5 Evaluation

Criteria / Value	**Partner: (S/U)**	**Partner: (S/U)**	**Teacher: Score**
Individual "Serving" (10 points)			
Appropriate amount (5 pt)			
Appropriate package (5 pt)			
Label (20 points)			

All ingredients listed (3 pt)			
High % to low % (5 pt)			
Weight of product listed (2 pt)			
Directions for use (5 pt)			
Safety Considerations (5pt)			
Supply Order - Packaging (15 points)			
supply list complete (5 pt)			
catalogue information complete (5pt)			
lowest price available (5 pt)			
Supply Order – Raw Materials (15 points)			
Supply list complete (5 pt)			
Catalogue information complete (5pt)			
Lowest price available (5 pt)			
Equipment Request (5 points)			
List complete (2 pt)			
Appropriate number or amount (3 pt)			
First Batch (20 points)			
Stoichiometry problem (theoretical yield) (5 pt)			
% yield determined (5 pt)			
Analysis of qualities (5 pt)			
Adjustment of recipe/justification (5pt)			
Second Batch (15 pt)			
Stoichiometry problem (theoretical yield) (5 pt)			
% yield determined (5 pt)			
Analysis of qualities (5 pt)			
TOTAL POINTS RECEIVED: (100 possible)			

STATEMENT FROM PARTNERS:

This project has been a joint effort from both of us. Time and effort on each individual section may not be exactly 50/50.

For this section _____'s contribution was _____% and
(name)

_____'s contribution was _____%
(name)

_____ _____

(student signature) (student signature)

STUDENT COMMENTS: