

Experimental Design Worksheet

5<sup>th</sup> Science  
Chemistry Unit

Name: \_\_\_\_\_

**The Chemistry of Gel Spheres**

Write your research question here.

What materials will you need for your experiment? List everything!

Write all of the steps you will follow in carrying out your experiment. Be sure to give enough information so someone else could carry out the experiment exactly the same way you did.

Make a data table to record all of the important information. Add headings to the rows and create columns. Collect your data and record it in the table.

What is the answer to your research question?

Evaluation rubric for presentation phase of the project.

	Needs Improvement	Adequate	Exceeds Basic Requirements
Knowledge of Experimental Design	<p>Presenters make errors or omissions on three or more of the following bullets.</p> <ul style="list-style-type: none"> <li>• Writing a research question</li> <li>• Writing a hypothesis</li> <li>• Controlling variables</li> <li>• Recording data</li> <li>• Making conclusions</li> <li>• Answering the research question</li> </ul>	<p>Presenter demonstrates partial knowledge of these processes by correctly and thoroughly completing at least four of the following six bullets, with the remaining two being partially met.</p> <ul style="list-style-type: none"> <li>• Writing a research question</li> <li>• Writing a hypothesis</li> <li>• Controlling variables</li> <li>• Recording data</li> <li>• Making conclusions</li> <li>• Answering the research question</li> </ul>	<p>Presenter demonstrates full knowledge of these processes by correctly and thoroughly . . .</p> <ul style="list-style-type: none"> <li>• Writing a research question</li> <li>• Writing a hypothesis</li> <li>• Controlling variables</li> <li>• Recording data</li> <li>• Making conclusions</li> <li>• Answering the research question</li> </ul>
Knowledge of Chemistry Concepts	<p>Presenters do not include any meaningful chemistry terminology.</p>	<p>Presenters include some chemistry terminology, but one or two examples are either misused or used in a manner that does not convey accurate understanding.</p>	<p>Presenters feature important chemistry terms appropriate for their research question.</p> <ul style="list-style-type: none"> <li>• Chemistry terminology is included.</li> <li>• Chemistry terminology is used correctly and in the appropriate context.</li> </ul>
Organization of Presentation	<p>Presentation has an illogical (non-sequential) order and/or is missing proper headings for each slide.</p>	<p>Presentation follows in a somewhat logical sequence which mirrors the order in which the experiment was done. One or two points of confusion are present.</p>	<p>Presentation follows in a logical sequence which mirrors the order in which the experiment was done with appropriate headings throughout.</p>
Graphics/Photographs	<p>No graphics or photographs were used.</p>	<p>Some graphics were used and were related to the text and presentation, but additional labeling or graphics would have enhanced the presentation.</p>	<p>Graphics/photos were used to enhance and reinforce the text and the presentation. Labels were appropriate.</p>
Mechanics/Gr	<p>Presentations has four</p>	<p>Presentations has no</p>	<p>Presentation has no</p>

ammar	or more spelling and/or grammatical errors.	more than two misspellings and/or grammatical errors	misspellings and/or grammatical errors
Eye Contact	Presenter reads entire script or words directly from each slide and makes no eye contact with audience.	Presenter makes eye contact most of the time and occasionally puts thoughts in his/her own words. Most information is read directly from the slides or script.	Presenter seldom uses the script during presentation, putting the information on each slide into his/her own words and embellishing of each slide. Presenter maintains eye contact with all areas of the audience throughout.
Project Collaboration	Partners did not treat each other respectfully nor/or shared tasks equally, including set-up, research notes, clean up, and presentation preparation and delivery	Partners were respectful most of the time and/or shared many, but not all, tasks equally including set up, note taking, clean up and presentation preparation and delivery.	Partners worked respectfully together, sharing all aspects of the project with equal division of labor throughout.
Elocution	Presenter mumbles and speaks too quietly for most students to hear.	Presenter's voice is clear much of the time and most students are able to hear the presentation.	Presenter uses a clear, loud voice and all students are able to hear the entire presentation.