

Independent Research Project

Data Collection

Chemistry I Honors
Mrs. Johannesson

Materials

- When performing your experiment, keep an accurate record of the materials you used. Be specific about the type and quantity of materials used.
- Keep a running list of materials in the front of your data notebook. In your final research report, you will need to submit a detailed list of the materials you used. Keeping track of them as you go will make this task much easier.
- Include EVERYTHING you used to run your experiment, even if it seems obvious.

Poor Materials List

Water
Thermometer
Sphygmomanometer
Test subjects

Good Materials List

25 liters Distilled Water
1 30-cm Thermometer, 0°C to 100°C
1 Mercurial sphygmomanometer
40 Test subjects:
8 Ages 5-10, male and female
8 Ages 11-16, male and female
8 Ages 17-22, male and female
8 Ages 23-28, male and female
8 Ages 29-34, male and female

Photographs

- You are required to take photographs in order to document the data collection phase of your experiment. At least 5 pictures must be included with your final research report. A few of these should also be included in your PowerPoint presentation.
- Include some pictures in which you are visible and others in which you are not. Your face must NOT be visible in any photos that you display at the science fair competition.
- Do not show the faces of human subjects.
- Pictures need to be clear, not blurry. Unless you have a close-up lens, **most cameras cannot focus on subjects that are less than 3 feet away.**
- If using a digital camera, keep the images clear by setting the camera to a high resolution and printing pictures in an appropriate size. Do not over-enlarge a digital picture and keep in mind that digital pictures will usually lose clarity in the printing process.
- Ensure that there is adequate lighting. Use a flash when necessary and avoid backlighting, which can cause your subject to appear as a silhouette.
- Photos should tell the story of your experiment. Take pictures at various stages in your procedure. Photograph your experimental setup to give others a clear impression of how your procedure was carried out.
- Use captions to describe the pictures you include with your report, presentation, or display.

Data Notebook

- Taking accurate notes is an integral part of your experiment. Often the results of an experiment are not clear because descriptive, detailed notes were not kept.
- Use a composition book, spiral notebook, or loose leaf notebook paper for your data notebook. Avoid ripping out or recopying messy pages. This is your work-in-progress, not your final report. However, do try to be as neat as possible.
- Write down everything that you do and observe during your experiment. List materials and quantities used. Record the DATE AND TIME of each observation and write in INK. Make note of any problems that occur and adjustments that were made. (NOTE: Any significant changes to your original procedure need to be approved BEFORE carrying them out.)
- If you are taking several quantitative measurements at one time, create a table so your data will be easy to read and interpret.
- Your observations must be objective. It is okay if your observations are contrary to what you expected. In fact, unexpected results are often more important and more interesting than expected ones.