

## Physical Science - Flame Test “Legal Brief”

As the Assistant District Attorney and Forensic Scientist of Westwood, you have conducted a flame test of the unidentified liquids found in the broken flask and on the floor at the suspicious “basement lab”. Now you need to write up the results of this test, describing the nature of the test and your conclusions.

You’re trying to impress your boss, the District Attorney, so that she’ll let you handle the rest of the case yourself, and thereby get your name in all the papers and further your budding political career. Make your arguments understandable to adults who only vaguely remember their high school science classes. This means you need to explain in simple scientific terms why you can trust the results of your tests. Express your confidence as “beyond a reasonable doubt”, or “a preponderance of evidence”, or just “more likely than not”.

Make sure your brief includes the following:

1. The specific purpose of your test.
2. A detailed description of the test you performed
  - a. The specific procedure you followed
  - b. The results you observed, in detail.
  - c. The scientific basis of the test. Convince the jury why they should trust it using...
    - i. Bohr’s model of the atom
    - ii. Why this model explains how each element produces a distinctive color
  - d. The possible sources of error in the test. Remember that the defense will cross-examine you to cast doubt on your argument.
  - e. Defend the validity of your results! You should refer to your previous experience with this type of testing.
3. A brief summary of your conclusions. This could eventually be used as part of your summary to the jury!

Be sure you use all of the following terms in your report accurately:

atomic spectrum (or spectra)  
electron  
energy level  
photon  
element  
compound

Use your best “Professional English”, and submit your brief typed, double-spaced, and cleanly formatted with your name at the top. Remember that in “Professional English”, you should:

- Use brief, concise paragraphs
- Remove unnecessary words and phrases
- Avoid restating your topic sentence at the end of each paragraph unless it really adds something to your argument
- Cite any and all sources you use; you may list your works cited at the end of your report, but you must explicitly identify any quotes, paraphrases, or ideas used in the body of the text where you use it. For example:

In your text:

... Heme iron is contained in red blood cells [1] and is part of the hemoglobin protein [2]...

At the end of your paper:

1. Court TV Student Handout Lesson 1: Kastle-Meyer Color Test
2. Physical Science "Notes on Kastle-Meyer Test",  
<http://westwood.k12.ma.us/~mholthouse/ps/RBblood.pdf> accessed 3/2/2011.

To submit your report, share it as a Google Document with me, giving me EDIT PERMISSION, and sending an email to notify me. The time of that email will be considered the time of your submission, and I will ignore any changes to the document after that time.