

## 2014 Summer Reading Assignment- Chemistry I Honors

Welcome to chemistry I Honors. I look forward to meeting you and helping you learn chemistry.

It is my hope that the following assignment options will help you realize how chemistry impacts your world and has helped shape history.

Choose one of the two following options:

### **OPTION 1: BOOK READING**

Go to your library and check out a copy of The Disappearing Spoon: And Other True Tales of Madness, Love, and the History of the Periodic Table of the Elements by Sam Kean. You can also purchase the book on amazon .com. After reading the book, answer the questions below.

The answers to all of the questions need to be in your own handwriting. No emailed or typed answers.

1. Which story about the periodic table or an element interested you the most? In what chapter and page range did you find this information?
2. Dmitri Mendeleev is given credit for “discovering” the periodic table. What does the book say about the other scientists who produced similar tables? Do you feel Mendeleev deserves credit for periodic table? Please justify your answer with text information.
3. Sam Kean details many prizes awarded to scientists. What were the awards presented to members of the Curie family? What was so unusual about the family situation and the extent of awards given?
4. The life story of the Curie family gives some indication of the dangers chemists faced on the job. From the book, find some other examples of dangerous chemicals and the complications they cause. Indicate the pages and chapter for each entry.
5. Aluminum was used to cap the top of the Washington Monument because it was once the most precious metals on earth, even more valuable than gold. Thanks to an American chemist, it is used daily and taken for granted. Summarize the story of the production of aluminum and how it went from being more valuable than gold to the inexpensive product of today.
6. Kean’s book can be opened and read from any chapter. Look through the table of contents and find a title that seems most interesting to you and involves a section of the book not covered the questions 1-5. Read the chapter and describe what you found most interesting.
7. Make a chart of 15 elements mentioned in the book. For each element, describe an interesting fact learned from reading the book. Indicate the chapter and page number for each fact.

## OPTION II CREATIVE RESEARCH

Select any 10 elements from the periodic table. Research each element to discover how the elements are used in daily life. Make a colorful collage that demonstrates how the element is used in everyday life. Each element on the collage must feature the following information:

- The element's name and symbol
- Two pictures that illustrate how that particular element is utilized in everyday products.
- Each picture must have a caption that explains to the reader how it is being used in the product being displayed.
- The poster must be larger than 8.5" by 11".

Research the difference between physical and chemical properties. You will need to list 4 examples of each property for each of your 10 elements. You will find many terms for which you are not familiar. After looking up the definition of the term, if you still do not understand what it means, do not include that characteristic in your chart. Each element has many chemical and physical properties. You will not have difficulty finding characteristics you do understand.

- Include a chart with the following information about each of the 10 elements:
  - 4 chemical properties
  - Definitions of each chemical property
  - 4 physical properties
  - Definitions of each physical property
  - List of uses for the element
- List your sources in APA format. If you need help with this process, the following website will be helpful. If you still need assistance, ask questions. <https://owl.english.purdue.edu/owl/section/2/>

### Grading Rubric for Option II Creative Research

CATEGORY	EXCEEDS EXPECTATIONS	MEETS EXPECTATIONS	APPROACHING EXPECTATIONS	DOES NOT MEET EXPECTATIONS
Content	Includes all required information for more than 4 physical and chemical properties in chart form with 2 everyday uses for each of 10 elements clearly described for each picture.  40-50 points	Includes all required information for 4 chemical and physical properties in chart form with 2 everyday uses for each of 10 elements clearly described for each picture.  35-39 points	Contains pictures for the 10 elements but is missing 1-3 pieces of information in the chart and/or pictures are not clearly identified.  30-34 points	Does not contain 10 elements and/or is missing 4 or more pieces of information in the table or poster.  0-29 points
Appearance/ Creativity	Exceptional product with colorful pictures cut out neatly and arranged in a visually pleasing way.  15 points	Most pictures are colorful, cut out and arranged neatly.  10 points	Contains 10 pictures but collage is disorganized.  7 points	Missing pictures and/or very little effort evident.  0 points
Sources	Five or more sources are correctly cited in APA format.  10 points	Three sources are correctly cited in APA format.  6 points	Two sources are correctly cited in APA format.  4 points	1 source correctly cited in APA format.  2 points