

# Physical Science- ELEMENT PROJECT

Element Research Project

Name\_\_\_\_\_

Worth-90 pts.

Model Due\_\_\_\_\_

Paper Due\_\_\_\_\_

Assigned Element\_\_\_\_\_

Atomic Number \_\_\_\_\_

Overview:

You will be assigned an element to research and to complete a written report (3 options for format: research paper, persuasive letter, or short story) and 3-dimensional model. You will be afforded the opportunity to conduct your research in the school's library. Some work will need to be completed outside of class. This is a substantial number of points- please do your best.

## 1. **Atomic Model.** Due date is **Tuesday November 27<sup>th</sup>**.

The atomic model should be a three dimensional model using the materials of your choice.

- The dimensions for the entire model should be **around 12" x 12"**. This is just a general guideline, a few inches either way is fine.
- Some ideas may be: Styrofoam balls, beads, tacks, stick pins, pipe cleaners, clay, wire, etc. Please avoid the use of foods such as marshmallows as they draw ants and fall off. Keep in mind that the atomic models will be displayed from the ceiling after they are graded so they need to be sturdy.
- Your model must include the following labels:  
Element name, chemical symbol, atomic number, atomic mass, the correct number of protons, neutrons, and electrons.

USE YOUR CREATIVITY FOR THIS PART OF THE PROJECT!

If you need help gathering some of the supplies- I do have some available from previous years- please contact me, first come- first served.

A scoring worksheet is also attached, this will be used to score the entire project (also must be stapled to your paper). By reading this you know exactly what is expected to get full credit.

- Written Reports:** The written portion of this project needs to include the following information. The written portion needs to be word processed and double spaced. The paper should be written in Times New Roman font and 12 pt.

**Due date -tentatively Tuesday Dec. 4<sup>th</sup>.**

Information that is to be included in your report, short story, or persuasive letter (but not limited to) is the following:

- Element (chemical symbol)
- Atomic number, atomic mass, number of subatomic particles (neutrons, protons, and electrons).
- Physical Properties (melting/boiling point, color, state of matter at 20° C)
- Chemical Properties (reactivity.....)
- History of Element (who discovered it, where)
- Economic uses/Value
- Importance to living organisms, if any.
- Where it is found (i.e. earth's crust, atmosphere, USA, Africa, Atmosphere, period, group, etc.)
- What form(s) it usually takes in nature (State of Matter, Compounds, Minerals, etc.) How do we find it?
- Anything else you can find out. See research for further guidance.

**Works cited.** Three sources must be used ( 1 website, 1 book/encyclopedia, 1 choice- but you may chose to use more) Citing of sources is necessary. NO WIKIPEDIA!! You are able to follow the guidelines used in your creative writing class, if you have not learned this yet there is a sample bibliography attached to this handout (I will help you if you need it). Refer to your bibliography handout on how to properly reference sources of information. **The last page of your report must be your works cited page.**

Attached is a research worksheet to help organize your search for information, this must be stapled to the back of your paper when you turn it in (with all your research included).

**How to use this packet-It is a big packet with lots of information, but everything should be here that you need to succeed with this project- I am here for help if needed.**

Page 3- scoring rubric for atomic model

Page 4- scoring rubric for atomic paper

Page 5/6- research guide (needs to be filled out and turned in with paper- fill in details while researching- including sources for further reference.

Page 7-sample of persuasive letter format (must also have a works cited page)

Page 8- how to format your paragraphs (general information following Southland's English department guidelines) for the research paper option- **will have more paragraphs for the body of paper**

Page 9/10/11- examples of how to cite your references within the paper (if needed) and for the works cited page (last page of written paper)

Page 12- example of how the works cited page should look

ATOMIC MODEL (40 POINTS)

**Completeness**

-Name and period 1 \_\_\_\_\_

-Labeled correctly (index card)

Element name 1 \_\_\_\_\_

Chemical symbol 1 \_\_\_\_\_

Atomic number 1 \_\_\_\_\_

Atomic mass 1 \_\_\_\_\_

-Model is an accurate representation of the assigned element:

Protons (must show at least 10, if have more than 10 and label the rest):

Correct location 2 \_\_\_\_\_

Correct number 2 \_\_\_\_\_

Size compared to other particles 2 \_\_\_\_\_

Neutrons (must show at least 10, if have more than 10, and label the rest):

Correct location 2 \_\_\_\_\_

Correct number 2 \_\_\_\_\_

Size compared to other particles 2 \_\_\_\_\_

Electrons (must show ALL):

Correct location 2 \_\_\_\_\_

Correct number 2 \_\_\_\_\_

Size compared to other particles 2 \_\_\_\_\_

Energy levels 2 \_\_\_\_\_

Correct number of el in outer level 2 \_\_\_\_\_

**Neatness**

Able to hang from ceiling 1 \_\_\_\_\_

Effort 4 2 1 \_\_\_\_\_

Correct dimensions

(approx. 12" x 12") 1 \_\_\_\_\_

On Time 7 5 3 1 \_\_\_\_\_

TOTAL (40 points) \_\_\_\_\_

## WRITTEN PORTION (50 POINTS)

Short story, persuasive letter (see attached example), or research paper (see attached examples of how to format, paragraph form, etc)

### I. Introduction Paragraph

3 points \_\_\_\_\_

-ACT- Attention getter, Connection of attention getter to thesis/main theme of paper, Theme-what is the paper about (Follow ACT format from English class-see separate page for details)

### II. Element information/History

5 points \_\_\_\_\_

-name of element, atomic number, atomic mass, element's symbol  
-elements period/group # and name, if applicable or type of element (ex. Halogen...)  
-who discovered  
-ancient history and contributions  
-other names the element has been known as

### III. Physical Properties

5 points \_\_\_\_\_

-boiling/freezing point  
-state of matter at 20 degrees Celsius  
-number of subatomic particles (P/N/E)  
-isotope? If so, how many know?

### III. Chemical Properties

5 points \_\_\_\_\_

-reactivity (with anything specific?) and why/ why not  
-flammability,  
-chemical compounds?

### IV. Sources

5 points \_\_\_\_\_

-where is the mineral found (earth's crust, atmosphere, specific location in the world)  
-leading producers  
-ore?

### V. Economic uses/ Value if any

10 points \_\_\_\_\_

-Environmental concerns and/or interesting information  
-health hazards or toxin  
-alloy (why- strengthen...)

### VI. Closing Paragraph

2 points \_\_\_\_\_

-TCA- mirror or following the intro paragraph (Follow ACT format from English class-see separate page for details)

### Grammar

15 points \_\_\_\_\_

-Paragraphs (spelling/punctuation, include 3-5 complex sentences, have a topic sentence, and contain like topics in each paragraph)  
-Works Cited page (See handout pages for examples-careful on punctuation)  
- Research guide is attached (Is used)

PROJECT SCORE \_\_\_\_\_

Research Guide (Use as an outline as we continue to collect information and it is to be handed in with final project)

Element (chemical symbol) \_\_\_\_\_

Atomic number \_\_\_\_\_

Atomic mass \_\_\_\_\_

Number of subatomic particles (**Must show how you calculated each**):

electrons \_\_\_\_\_

protons - \_\_\_\_\_

neutrons- \_\_\_\_\_

Physical properties (melting/boiling point, color, state of matter at 20° C):

Chemical properties (reactivity, flammability, etc.):

History of Element (who discovered it, where):

Economic uses/Value:

Importance to living organisms:

Where it is found (i.e. USA, Africa, Atmosphere, earth's crust, etc.):

What form(s) it usually takes in nature (State of Matter, Compounds, Minerals, etc.):

**Health hazards or toxin:**

**-alloy (why- strengthen...):**

Anything else you can find out:

References:

1)

2)

3)

**Sample of Letter format (persuasive letter):**

January 14, 1995

Dr. Benjamin More  
Department of History  
Oregon State University  
Bexell Hall  
Corvallis, OR 97333

Dear Dr. More,

I am writing to request a letter of recommendation. I hope that you remember me. My name is Eliza Doolittle, and I was a student in four of your classes: HIST 314, Spring 1993; HIST 448, Fall 1994; HIST 432, Winter 1994; and HIST 449, Spring 1994.

My final class project for HIST 449, History of Medicine, was a 30 page paper entitled, "Medical History: The Germ Theory Enlightens a Dark Medical Past." My paper received an A from you, and it was published in the college journal, *Prism*, that year. At the time, you suggested that I might consider a career in the writing or publishing fields.

Well, the time has come for me to follow your suggestions. I have applied for an editorial position with the McGraw/Hill Publishing Company in Chicago. The company has asked me to supply them with three letters of recommendation. I would appreciate it if you could write one for me.

McGraw/Hill wishes to know the conditions under which you knew me, your understanding of my aptitude for writing, my qualifications to edit the work of others, my leadership abilities, and anything else you feel pertinent. I have enclosed a copy of my resume to help you write the letter.

McGraw/Hill would like the letter by the end of the month as I have an interview scheduled for the first week of February. If you would, please send it to the following person and address:

Betty Butler  
Human Resources Department  
McGraw/Hill Publishing Company  
One Research Park West  
Chicago, IL 55555

Thank you very much for your attention to this matter, and I sincerely appreciate your efforts on my behalf.

Sincerely,

Eliza Doolittle  
Enc: Resume

# Successful Essay Formula

## Memorize It! You will be tested!

Mrs. Jakubek's Language Arts

### Introduction (1<sup>st</sup> paragraph):

**A. Attention Getter** (anecdote, personal story, statistic, fact, or quote)

**C. Connection** (This connects the attention getter to the thesis, which is the main point of the paper. It's important that the students' attention getter ties to the story, and that it is not some random fact which does not tie to the story)

**T. Thesis** (The main point of the paper. This should be arguable and something that can be backed up. *"Southland is the greatest high school in Minnesota because of the academics, athletics, and fine arts."* I could back this up with facts/opinions, and people could easily argue with me on the other side.

### Body Paragraphs (2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, paragraphs):

**T2. Topic Sentence with Transition** (The first reason, second reason, third etc. *"The first reason Southland is the greatest high school is that it has a wonderful academic program."*)

**E2. Evidence and Examples** (This means that the student has proof, or evidence to back them up in their statements. *"The reason why Southland is the greatest high school is because the Star Tribune states, "Southland has the highest academic ranking in the state of Minnesota" (11).*)

### Conclusion: (5<sup>th</sup> paragraph):

**T. Thesis** (Restate the main points over to wrap up the story/paper/essay)

**C. Connection** (reconnect the main idea to the final attention getter)

**A. Attention Getter** (Use a new attention getter to wrap up the paper... ask a question, leave with an open opinion, restate a new statistic)



# *MLA Documentation*

## **Single author named in parentheses**

The tendency to come to terms with difficult experiences is referred to as a "purification process" whereby "threatening or painful dissonances are warded off to preserve intact a clear and articulated image of oneself and one's place in the world" (**Sennett 11**).

## **Single author named in a signal phrase**

Social historian Richard **Sennett** names the tendency to come to terms with difficult experiences a "purification process" whereby "threatening or painful dissonances are warded off to preserve intact a clear and articulated image of oneself and one's place in the world" (**11**).

## **Two or more authors**

Certain literacy theorists have gone so far as to declare that "the most significant elements of human culture are undoubtedly channeled through words, and reside in the particular range of meanings and attitudes which members of any society attach to their verbal symbols" (**Goody and Watt 323**).

## **Corporate author (organization, association, etc.)**

The federal government has funded research concerning consumer protection and consumer transactions with online pharmacies (**Food and Drug Administration 125**).

## **Works with no author**

Several critics of the concept of the transparent society ask if a large society would be able to handle the complete loss of privacy ("**Surveillance Society**" **115**).

## **Two or more works by the same author**

In his investigation of social identity, *The Uses of Disorder*, Sennett defines adulthood as a stage where people "learn to tolerate painful ambiguity and uncertainty" (**108**).

In a surprising move, Richard Sennett combines the idea of power with that of virtue, "the idea of strength is complex in ordinary life because of what might be called the element of its integrity" (**Authority 19**).

## **Secondary source of a quotation (someone quoted within the text of another author)**

As Erickson reminds us, the early psychoanalysts focused on a single objective, "introspective honesty in the service of self enlightenment" (**qtd. in Weiland 42**).

## **Web page:**

Abraham Lincoln's birthplace was designated as a National Historical Site in 1959 (**National Park Service**).

**Book:**

**In-Text Citation:** (Fleming 32).

**Citation:** Author. *Title*. Place of publication: publisher, year of publication. Medium.

Fleming, Thomas. *Liberty! The American Revolution*. New York: Viking, 1997. Print.

**Two or More Books by Same Author (3 hyphens = author's name in second citation):**

**In-Text Citation:** (Tolkien 45).

Tolkien, J.R.R. *The Fellowship of the Ring*. New York: Ballentine Books, 1965. Print.

- - - *The Two Towers*. New York: Ballentine Books, 1965. Print.

**Book with Two or Three Authors:**

**In-Text Citation:** (Jakobson and Snerd 45).

Jakobson, Joe, and Sam Snerd. *The Sound of Crying Seniors*. Rochester, MN: Rochester Publishing House, 2001. Print.

**Book with More than Three Authors:**

**In-Text Citation:** (Snerd et al. 45).

Snerd, Sam, et al. *The Life and Times of Senior Seminar*. Adams, MN: Southland Publishing House, 2002. Print.

**Magazine Article:**

**In-Text Citation:** (Wheat 32)

**Citation:** Author. "Title of Article." *Title of Magazine*. Date of Publication: Pages. Medium.

Wheat, Alynda. "Beyond the Law." *Entertainment Weekly*. 10 March 2006: 32-33. Print

**Newspaper Article:**

**In-Text Citation:** (Peterson 2A)

**Citation:** Author. "Title of Article." *Name of Newspaper*. Date of Publication: Pages. Medium.

Peterson, Karen S. "Turns Out We Are Unusually Conventional." *USA Today*. 7 Oct. 1994: 1. Print

**Encyclopedia or Dictionary Online:**

**In-Text Citation:** (Posner)

**Citation:** Author. "Name of Entry." *Title of Encyclopedia*. Edition. Year. Medium.

Posner, Rebecca. "Romance Languages." *The New Encyclopedia Britannica: Macropedia*. 15<sup>th</sup> ed. 1987. Print.

**Personal Interview:**

**In-Text Citation:** (Snerd interview).

**Citation:** Interviewer's Last name, First name. Personal interview. Date

Snerd, Sam. Personal interview. 15 Jan. 2000.

**Short Story in an Anthology:**

**In-Text Citation:** (King 417-419)

**Citation:** Author. "Title of Entry." *Title of Anthology*. Editor of Book. Place of Publication: publisher, year of publication. Pages. Medium.

King, Robert. "Should English be the Law?" *The Presence of Others*. Ed. Andrea Lunsford and John Ruszkiewicz. New York: Bedord, 2000. 409-421. Print.

**Article from a database:**

**In-Text Citation:** (Jenson 108)

**Citation:** Last name, First name. "Title of article." *Name of periodical*, volume, and issue numbers (Date of publication): Pages used. *Name of database*. Medium. Date of access.

Jenson, Jill. "It's the Information Age, so Where's the Information?" *College Teaching* 52.3 (2004): 107-112. *Academic Search Premier*. Web. 2 Feb. 2005.

**Short work from a Web site:**

**In-Text Citation:** (Jenkins)

**Citation:** Last name, First name. "Title of Short Work." *Title of Web site*. Sponsor of Web site, Date "n.d" if there is no date. Medium. Date of access.

Jenkins, Henry. "Bearings." *MIT Communications Forum*. MIT, 19 Feb. 2002. Web. 16 June 2005.

## Works Cited

- Adams, Scott. *Dilbert and the Way of the Weasel*. New York: Harper, 2002. Print.
- American Management Association and ePolicy Institute. "2005 Electronic Monitoring and Surveillance Survey." *American Management Association*. Amer. Management Assn., 2005. Web. 15 Feb. 2006.
- "Automatically Record Everything They Do Online! Spector Pro 5.0 FAQ's." *Netbus.org*. Netbus.Org, n.d. Web. 17 Feb. 2006.
- Flynn, Nancy. "Internet Policies." *ePolicy Institute*. ePolicy Inst., n.d. Web. 15 Feb. 2006.
- Frauenheim, Ed. "Stop Reading this Headline and Get Back to Work." *CNET News.com*. CNET Networks, 11 July 2005. Web. 17 Feb. 2006.
- Gonsalves, Chris. "Wasting Away on the Web." *eWeek.com*. Ziff Davis Enterprise Holdings, 8 Aug. 2005. Web. 16 Feb. 2006.
- Kesan, Jay P. "Cyber-Working on Cyber-Shirking? A First Principles Examination of Electronic Privacy in the Workplace." *Florida Law Review* 54.2 (2002): 289-332. Print.
- Lane, Frederick S., III. *The Naked Employee: How Technology Is Compromising Workplace Privacy*. New York: Amer. Management Assn., 2003. Print.
- Tam, Pui-Wing. et al. "Snooping E-mail by Software is Now a Workplace Norm." *Wall Street Journal* 9 Mar. 2005: B1+. Print.