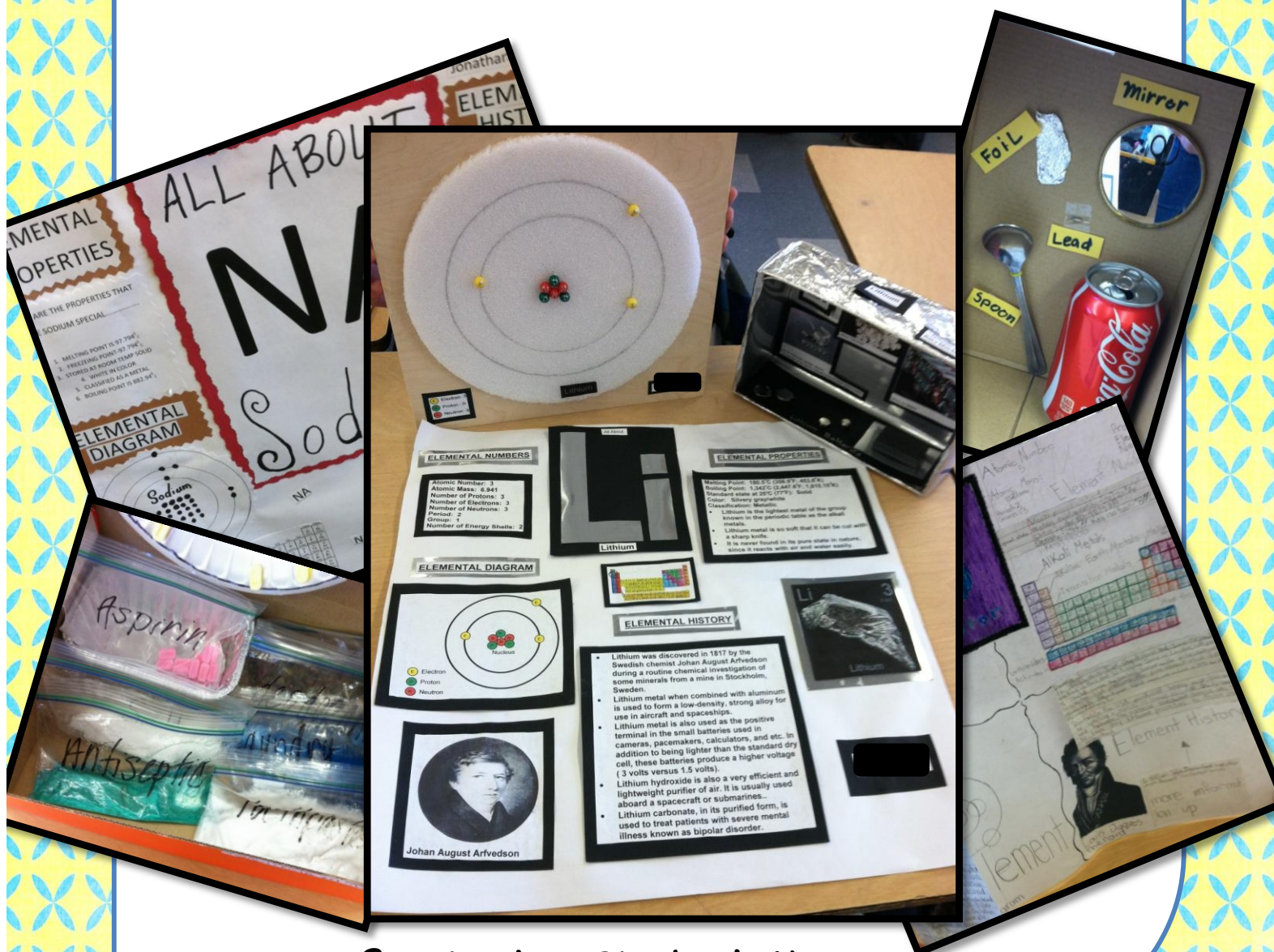


# All About the Elements

*An Independent Student Project  
Introducing the Periodic Table  
and World of Elements*



Created by: Stephanie Moorman  
<http://teachinginroom6.blogspot.com>



Thank you so much for purchasing this All About the Elements Project Resource. I have been using it in my classroom, with great success, and I am hopeful that you will have the same results.

This packet is organized into two sections. First you have the teacher's notes. These are all designed to show you how to use this resource as well as how you can implement it in your classroom. Secondly, there are the student pages. Each of the student pages are surrounded by a bubble border. These are all intended to be copied and given to the students.

The student pages are written in kid friendly language and are rather self-explanatory. Each page sets up the three parts of this project (Poster, Diorama, and Atom Model) and shows pictures of possible final projects. The students may use these as models so that they can complete this project independently. There is also a grading scale for each of the three parts of the project.

If you enjoy these activities, and find them useful to your students and your classroom, please come back and leave feedback. I would love to hear from you!

If you would like to make a suggestion, have a comment, or a concern, PLEASE feel free to contact me at [TeachinginRoom6@yahoo.com](mailto:TeachinginRoom6@yahoo.com) before leaving feedback. I will be able to make any corrections or help you that way.

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Thank you again! I really appreciate your patronage.

Stephanie Moorman

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# Notes for the Teacher

When I assign this project, it is usually at the beginning of our Element and Periodic Table Unit. The students are unfamiliar with both, and this project serves as an introduction to the material they will be learning. This project would also be appropriate as a culminating activity for the students.

The set up for this project is quite simple. Cut 18" x 18" squares of white construction paper for each student. Also, make copies of each of the student pages. Finally, the students need to choose an element to study. In my classroom, I wanted them to focus on specific elements that were in my state standards. Because of this, I pre-choose one element for each member of my class. After this "Notes for the Teacher" page, I have included a page of suggested elements. Cut the elements out into strips, place in a hat, and have the students pick one. There are blank slips as well so that you may add any other elements you would like. Alternatively, you may have your students choose their own elements off the Periodic Table itself. That is completely up to you and your class.

Once the elements and materials are distributed, the students should be expected to complete the project at home. 3 weeks is the suggested amount of time, though it could be done in as little as 2 weeks and as long as 4 weeks.

The students should be given a grading scale. It is on a 4 point rubric system, with 4 being above grade level. In order to receive enough points to get a 4, the students **MUST** complete the extra information sections. If they just do what is required, they will receive a 3. You can easily change this part by whiting out the numbers and writing in the letter grades (if your school system goes by grades)

On the day the projects were due in class, I had the students first share with small groups, then to the class as a whole. This serves several purposes, but the main one is for the students to become familiar with more than just their own element.

As for the extra credit, it is just that...extra. You may or may not assign this portion of the project. The students may or may not choose to do it. You may also make it mandatory instead of extra credit. That is up to you as the teacher.

# Elements to Study

**Notes for the Teacher:** Cut each of the elements out, place in a hat, and allow the students to pick one. Then have the students record which element they are responsible for on their "All About the Elements" cover page.

Hydrogen	Helium	Lithium
Boron	Carbon	Nitrogen
Oxygen	Fluorine	Neon
Sodium	Magnesium	Aluminum
Silicon	Phosphorus	Sulfur
Chlorine	Argon	Potassium
Calcium	Titanium	Iron
Cobalt	Nickel	Copper
Zinc	Arsenic	Silver
Gold	Tin	Iodine
Barium	Platinum	Mercury
Lead	Radium	Uranium

Name #:

Date:

# All About the Elements

## *A Periodic Table Project*

Over the next few weeks, you will be creating a display project about one element on the periodic table. There are two parts to this project: a poster and a diorama.

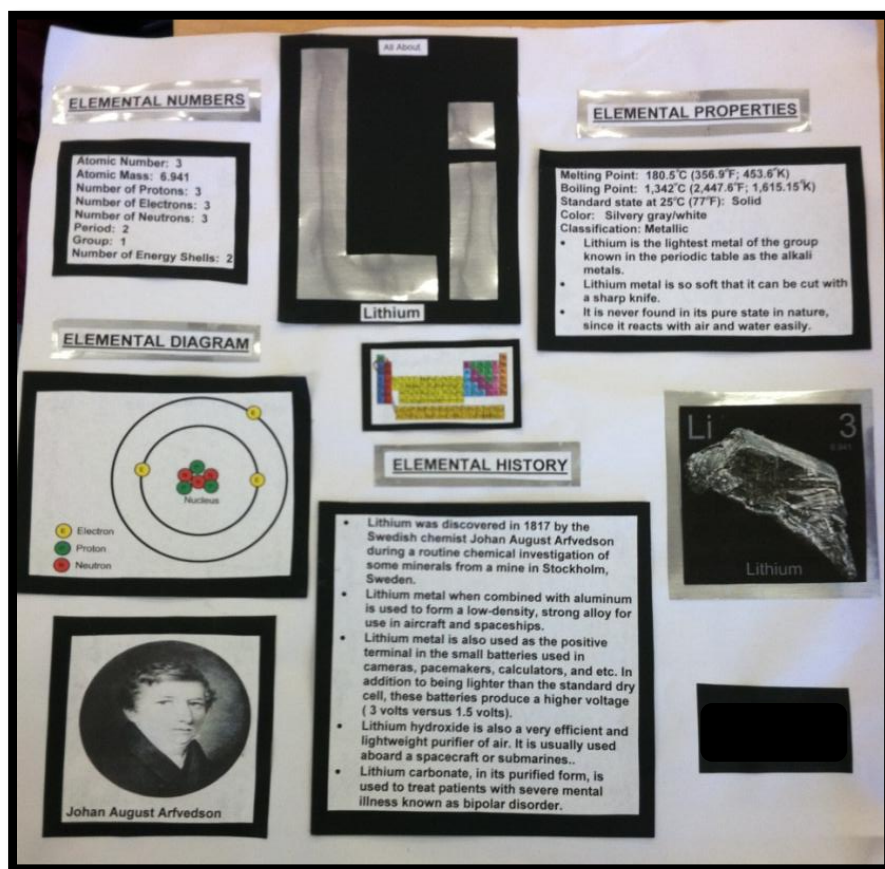
*Element I will research:*

*Project due on:*

## *Part A: Poster*

For this poster you will need an 18" x 18" piece of paper.

On the next page is the list of requirements for each section. You **MUST** include all of the information requested, but may add more information, pictures, diagrams, etc.



## Element Label

Element name as well as the element symbol.



## Element Numbers

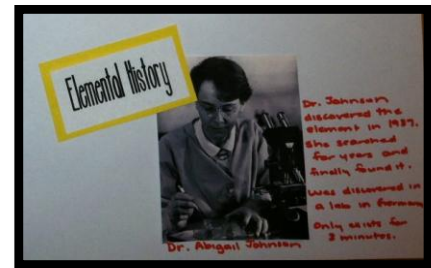
Atomic Number  
Atomic Mass

Number of protons, electrons, and neutrons  
Period and Group on the Periodic Table  
Number of Energy Shells

A poster titled "Elemental Numbers" for Oxygen (O). It lists: Atomic Number = 8, Atomic mass = 15.999, Protons = 8, Electrons = 8, Neutrons = 8, Period = 2, and Group = 16. It also includes a small periodic table with Oxygen highlighted in red. A small image of an Oxygen atom is also present.

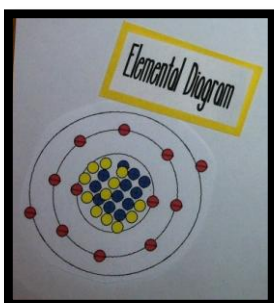
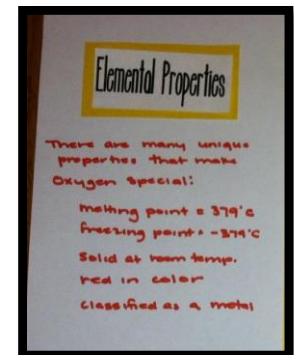
## Element History

When was this element discovered?  
Who discovered the element?  
Where was it discovered?  
How was it discovered?  
What makes this element important?



## Element Properties

Melting Point  
Boiling Point  
Is it a solid, liquid, or a gas?  
What color is it?  
Classification?  
Other things that make this element unique

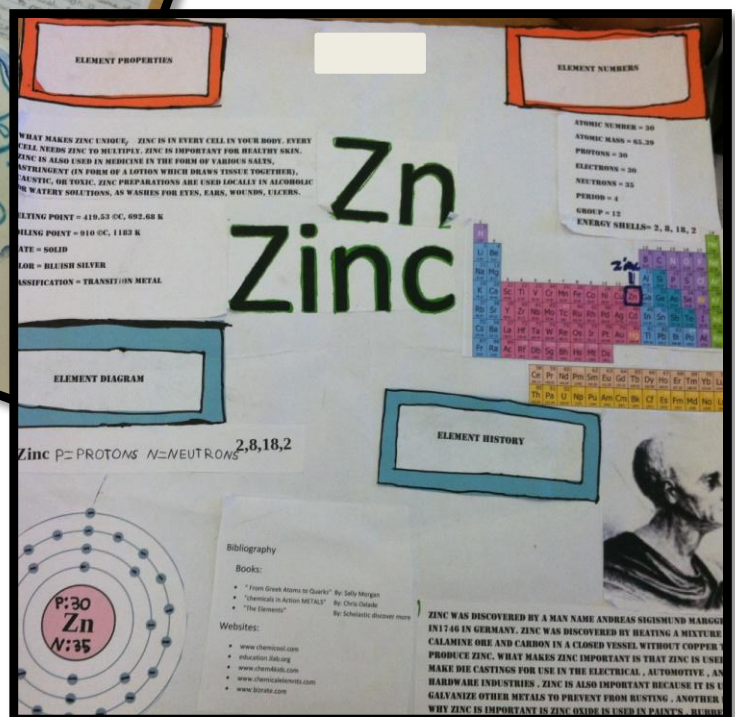


## Element Diagram

Draw a diagram of the energy shells, the protons, electrons, and the neutrons that are found in the element. Be sure it is as accurate as possible.



Be sure that the paper is 18" x 18". Also be sure to label each section clearly. You may type or handwrite your poster.



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

Date: \_\_\_\_\_

## Part B: Diorama

For this diorama, you will need a shoebox or other box. This box will be used to house your display.

Inside the box, you will place a MINIMUM 5 items that are made from your element. You can be as creative with this portion of your product as you would like. However, keep the following things in mind:

# Do

Label all items in your box. You can either label with simple names or include a description.

Draw, take pictures, use the real objects, or any combination of the above.

Use only school safe items.

Include as many artifacts as possible (— the more the better).

Display them neatly and attractively.

Use thought when including the objects.

# Don't

Use perishable food items.

Use real medicines or poisons which may harm other students.

Include less than 5 items.

Make up items to put in your box or include things unless you are sure it is made from the element or parts of the element.

Include the same type of item over and over again. For example, don't put 10 types of fruit containing potassium. That will count as one object.



# Diorama Examples

Here are a few pictures of what you CAN make your diorama look like. You do not have to do what is done here. Use these as idea starters for you to get your mind moving.



In case you are stumped, here are a few examples for you. Don't worry if your element isn't here. This is designed to give you an idea of the types of things you should be looking for.

## Iron

steel wool  
Ball bearings  
Chainmail  
Iron castings

## Aluminum

soda cans  
tin foil  
back of a mirror

## Copper

Pipes  
pennies  
electrical wires

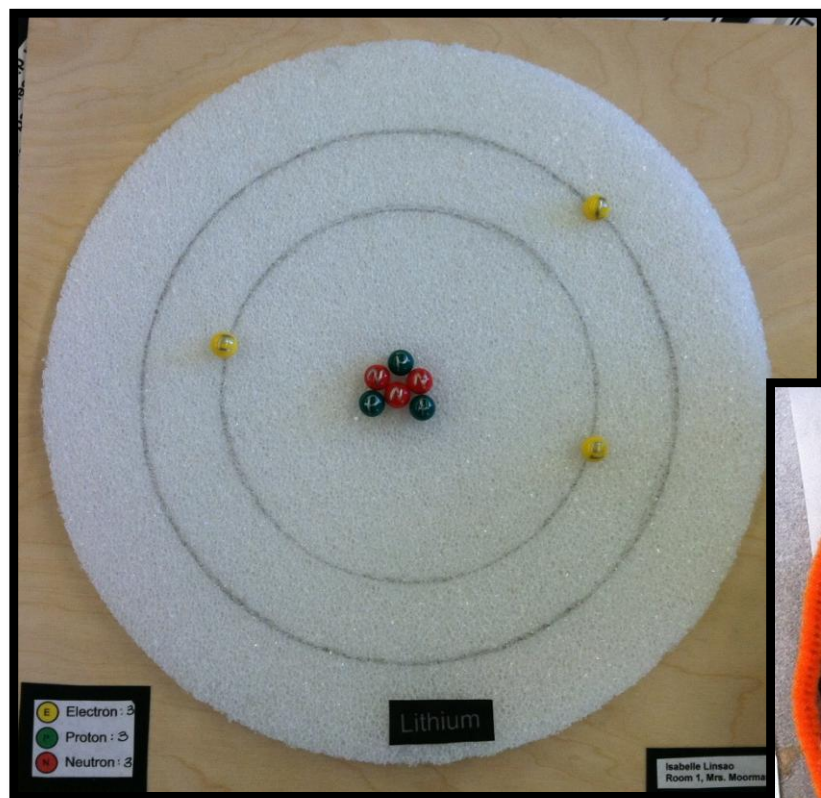
Name #: \_\_\_\_\_

Date: \_\_\_\_\_

## *Extra Credit: Element Atom Model*

- If you wish, you may create a model of your element in its pure form. You may use any materials you would like, such as Styrofoam, paper plates, cereal, pom poms, candy, ping pong balls, hangers, etc. Use whatever you think would make a good atom model. It must include:

The correct number of protons  
The correct number of electrons  
The correct number of neutrons  
The correct number of shells  
A key with all numbers identified  
Subatomic parts must be correctly placed



# Grading Scale for Element Poster

Name of student:

Element:

\_\_\_\_/ 10 points

\_\_\_\_/40 points

\_\_\_\_/ 5 points

Turned in on time

Written in own words/student created

Attractive display

## Elemental Label

\_\_\_\_/ 1 points

\_\_\_\_/ 1 points

Element name

Element symbol

## Elemental Numbers

\_\_\_\_/ 1 points

\_\_\_\_/ 1 points

\_\_\_\_/ 2 points

\_\_\_\_/ 2 points

\_\_\_\_/ 1 points

\_\_\_\_/ 4 points

Atomic Number

Atomic Mass

Number of protons, electrons, and neutrons

Period and Group on the Periodic Table

Number of Energy Shells

Extra information

## Elemental History

\_\_\_\_/ 2 points

\_\_\_\_/ 2 points

\_\_\_\_/ 2 points

\_\_\_\_/ 2 points

\_\_\_\_/ 2 points

\_\_\_\_/ 4 points

When was this element discovered?

Who discovered the element?

Where was it discovered?

How was it discovered?

What makes this element important?

Extra information

## Elemental Properties

\* \_\_\_\_/ 1 points

\_\_\_\_/ 1 points

\_\_\_\_/ 1 points

\_\_\_\_/ 1 points

\_\_\_\_/ 1 points

\_\_\_\_/ 4 points

Melting Point

Boiling Point

Is it a solid, liquid, or a gas?

What color is it?

Classification?

Other things that make this element unique

## Draw a diagram of the:

\_\_\_\_/ 1 points

\_\_\_\_/ 1 points

\_\_\_\_/ 1 points

\_\_\_\_/ 1 points

\_\_\_\_/ 5 points

\_\_\_\_/ 100 points

Energy shells

The protons

Electrons

Neutrons

Parts are correctly placed

## Grading Breakdown

100 – 91 points

4

90 – 70 points

3

69 – 51 points

2

50 – 0 points

1



# Grading Scale for Element Diorama

Name of student:

Element:

\_\_\_\_/ 10 points  
\_\_\_\_/40 points

Turned in on time  
Work done by student

\_\_\_\_/ 15 points  
\_\_\_\_/ 5 points

5 items  
Extra items included

\_\_\_\_/ 5 points  
\_\_\_\_/ 5 points  
\_\_\_\_/ 15 points  
\_\_\_\_/ 5 points

Items labeled  
labels include descriptions  
All items made from element  
Attractively displayed, not just thrown  
in box

\_\_\_\_/ 100 points

## Grading Breakdown

100 – 91 points	4
90 – 70 points	3
69 – 51 points	2
50 – 0 points	1

# Grading Scale for Element Model Extra Credit

Extra Credit Model includes the correct number of:

\_\_\_\_/ 5 points  
\_\_\_\_/ 5 points  
\_\_\_\_/ 5 points  
\_\_\_\_/ 5 points  
\_\_\_\_/ 20 points  
\_\_\_\_/ 10 points

Energy shells  
The protons  
Electrons  
Neutrons  
Subatomic parts are correctly placed  
Key/label for all parts

\_\_\_\_/ 50 points

## Grading Breakdown

50 – 41 points	4
40 – 31 points	3
30 – 21 points	2
20 – 1 points	1

\_\_\_\_/ 0 points

Not Attempted – No extra credit given