

Element Project

In this project we will mix a little chemistry, English, geometry, and art as we write a short paper and build a 20-sided polygon that contains key information about each of the elements on the periodic table. This project has three parts, and is worth 150 points.



- Elemental Ball 60 points
- Paper 60 points
- Presentation 30 points

Paper Requirements

See Rubric for Grade Detail

Your paper should be a between 700-900 words, 12pt font, double spaced with standard 1” margins. The paper should summarize the key information about your element. You must have at least 3 separate resources. Be sure to provide a list of your resources with your paper.

Your paper should be in the following format

- Introduction, explaining what elements are, how do we organize them, and which element will you be focusing on
- 1st body paragraph-Discovery: Who, what, when, where did they find it? Is it found in nature or is it synthetic.
- 2nd body paragraph-Atomic information, electron configuration, state of matter, physical properties, etc.
- 3rd body paragraph-Uses for your element, health or safety concerns, other information
- Conclusion, summarize why your element is important, what is special about it, etc

Model Requirements

See Rubric for Grade Detail

The same information you put into your paper will also be on your element ball. Each of your sides of your polygon will contain one of the following piece(s) of information.

1. Your name and class hour
2. Element Name
3. Chemical Symbol
4. Atomic Number
5. Atomic Mass
6. Number of protons, neutrons, and electrons in a neutral atom
7. Ion Symbol, (element symbol with charge)
8. Date of discovery and by whom
9. Group and Period number
10. Group name (halogen, alkali metal, transition metal, lanthanide, etc)
11. Boiling point and Melting point
12. State of matter at room temperature
13. Is the element a metal, nonmetal, or metalloid
14. Electron configuration
15. What is your element used for?
16. Health or Safety concerns
17. -20 Pictures of your element, either hand drawn or printed, your choice.

Construction of your model:

- Add one of the required items to each of **20** separate faces. Color and decorate as you please. Pictures or clip art may be suitable for some items. (*All information must be placed inside the triangle-shaped space!*)
- Cut out each of the 20 circles you designed for your element. Fold the circles into triangles, as shown on pattern. (All triangles must be exactly alike!) The folds will end up **INSIDE** the icosahedron.

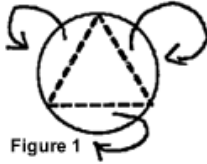


Figure 1

The folded parts of the circle should go **inside** the element ball.

- Select 5 (five) triangles and glue, tape or staple them together in a pie shape pentagon to make the top of the element ball.



Figure 2

- Repeat with another 5 (five) triangles to make the bottom of the element ball.
- Take the remaining 10 triangles and glue, tape or staple them together in a strip.

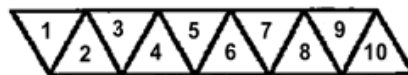


Figure 3

- Glue, tape or staple the ends of the strip together to form a ring. This will form the equator of the element ball.
- Secure one of the pentagons to the top of the ring. Turn the model over and secure the other pentagon to form the complete element ball. (*This step requires AT LEAST three hands, so you will have to ask someone to help.*)
- Secure a piece of string to your model, this will be used to hang the project.

Presentation Requirements

See Rubric for Grade Detail

You will present your model to the class in a 1-2 minute presentation. Within your presentation you should tell us the important key information about your element.

You may want to use your model to help you in your presentation. You should practice your “speech” before you present so it flows. Everyone is nervous at presentation, if you practice what you are going to say it will be easier.

Model Rubric

	20pts max	15pts 11pts	10pts-6pts	5pts -0pts
Finished Product	The project demonstrates careful construction! All sides fit together neatly. NO structural faults are visible	The project demonstrates adequate construction! Most of the sides fit together neatly. Some structural faults are present	The project demonstrates minimal construction effort! Some of sides fit together neatly. Many structural faults are visible	The project is not constructed properly. Major structural faults exist.
Correct Information	All sides contain correct information about the element.	At least 15 of the 20 sides contain the correct information about the element	At least 10 of the 20 sides contain the correct information about the element	Less than 10 sides contain correct information about the element
Creativity and Uniqueness	Design is unique and creative. Shows great detail and style. Colorized and neatly drawn/designed.	Design shows some detail and style. Colorized and neatly drawn/designed	Design shows limited detail, style, and/or color	Little creativity and effort are shown. Model is sloppy and/or poorly designed.

Presentation Rubric

	15pts max	10pts – 6pts	5pts - 2pts	1pt -0pts
Content	Presenter expresses in depth understanding of content knowledge for their particular element.	Presenter demonstrates acceptable content knowledge for their particular element.	Presenter demonstrates acceptable content knowledge for their particular element.	Presenter demonstrates limited content knowledge for their particular element.
Delivery	Presentation is well practiced and rehearsed.	Presentation shows some preparation and practice	Presentation shows limited preparation and practice	Presentation shows little or no practice or preparation.

Paper Rubric

	20pts max	15-10 pts	5pts -0pts
Content	Paper contains all key information for the topic. Additional supporting details are present. Paper has limited grammatical errors.	Paper contains adequate information about the topic. Lacks supporting details and information. Paper has some grammatical errors.	Paper contains minimal information the topic. Grammatical errors are prevalent. Little effort shown for writing.
Format	Paper is typed, with correct font, spacing, etc		Paper not properly formatted, not proper length, not typed, etc.
Bibliography	3 or more sources listed		Less than 3 sources listed.