

Name:

Date:

Period:

Elemental Identities

Chemical Identity Mini-Project

Just as people have unique characteristics and identities; matter does too! The Periodic Table organizes all of the Earth's elements into categories based on specific properties.

Essential Question:

How do we define and identify matter?

How are elements similar to humans?

What kind of properties and characteristics do elements on the Periodic Table have?



Step I: What is my identity?

Complete the writing task below

What is identity? How would you describe yourself?

Some options to think about:

1. Physical characteristics: short, tall, small, big
2. Personality: chill and mellow, cool calm and collected, crazy, loud, outgoing, short-tempered, shy, etc.
3. Internal Identity: the one that you don't show the outside world.
4. Contrasting Identities: between your private, internal identity at home and the identity you show everyone else in public
5. Conflicting Identities: how you are socialized (how you behave now) versus how you WANT to behave
6. Proud: What aspect of your identity/personality are you particularly proud of

Write a short description of yourself (1-2 paragraphs) for each of the six prompts above. You will turn in your short description hand written or typed with at least two symbols or pictures that help in identifying you (you can brainstorm with bullet notes below):

Step II: What Periodic Table family represents me?

Go to my (Caroline's) DP → click on class resources → find "Which Element are You?" – a Chemical Identity Mini-Project
→ click on Periodic Table Families Resource Sheet 1 and Periodic Table Families Resource Sheet 2

Complete the table below using what you found in your Periodic Table Families Webquest and from what you see online.

The purpose of this step is to start researching the families on the periodic table that you may identify with your characteristics and the family's characteristics.

First, fill in the column to left with characteristics about yourself. Then, find families that match up with your personality traits and give reasons to explain why you picked those families.

Table 1

What is a trait/identity/personality characteristic that describes <u>you</u> ?	What <u>family</u> on the periodic table does this characteristic trait resemble?	Why? (use the <u>family characteristic(s)*</u> to help explain your answer)
1.		
2.		
3.		
4.		
5.		

Step III: Which element represents me?

Go to my (Caroline's) DP → click on class resources → find "Which Element are You?" – a Chemical Identity Mini-Project → click on Elements Resource Sheet 1 and Elements Resource Sheet 2

Complete the table below. The purpose is to start researching as many elements as possible that you may identify with based on one of your characteristics and one of the element's characteristics.

TABLE 2

What is a trait/identity/personality characteristic that describes you?	What element on the periodic table does this characteristic trait resemble? (name and symbol)	Why? (use the element characteristic(s)* to help explain your answer)
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

*Sample element characteristics:

Toxic, flammable, physical appearance (shiny, lustrous, soft, etc), how it is found in nature, atomic size, real world uses, etc.

Step IV: Pick an element

Narrow your options:

Does one element appear more than once? If so, list the elements that appear more frequently in the table below. If all the elements are different, maybe focus on the ones that you would like to be represented as.

Table 3

Element Name	Element Family	Why?

When you have an idea of which element you want to pick, talk to Caroline and get it approved. Then type up the following information in a paragraph.

Which element do you identify with the most?

The element I identify with the most is _____ because (give 5 reasons why you decided to pick this element) and type your answer in paragraph form.

Step V: Create your CD Square

You now will be able to create your CD square to describe and give information about the specific element you have chosen. Follow the steps below...

Part A: CD Cover

On your CD Cover, make sure you include the following things:

- ___ Name of your element
- ___ Your name
- ___ A picture to represent your element
- ___ Your cd cover should be colorful, original and professional-looking

Part B: General Facts

- ___ Element name
- ___ symbol
- ___ group and period number
- ___ metal, non-metal or metalloid?
- ___ family the element belongs to
- ___ atomic number
- ___ atomic mass
- ___ number of protons
- ___ number of neutrons
- ___ number of electrons
- ___ most common state of matter (solid, liquid or gas)
- ___ who discovered the element
- ___ when and where was it discovered
- ___ size of atomic radius
- ___ ionization energy
- ___ electronegativity

Part C: About Me

- ___ A description of the element including real world examples (at least 3) of where the element is found in nature (must be in paragraph form)
- ___ Include a picture for each example

Part D: Isotopes

Each element has an isotope. Pick an isotope of your element and ...

- ___ describe what the isotope is used for
- ___ describe how the isotope is different from the more popular form of the element on the Periodic Table
- ___ include the atomic number
- ___ include the atomic mass
- ___ number of protons, neutrons and electrons
- ___ Include a picture of the isotope

Part E: Friends

Most elements are found bonded to other elements. In this section, pick at least 4 elements that you would be friends with (or bond well with) and

- ___ picture of friend #1
- ___ explanation for why your element would be attracted to friend #1
- ___ picture of friend #2
- ___ explanation for why your element would be attracted to friend #2
- ___ picture of friend #3
- ___ explanation for why your element would be attracted to friend #3
- ___ picture of friend #4
- ___ explanation for why your element would be attracted to friend #4

Part F: What I Share With My Element

Include and describe traits you personally have in common with your elements (3 from your original list of 5 at the bottom of Step IV).

- ___ list trait #1
- ___ description of why you share trait #1 with your element

- ___ list trait #2
- ___ description of why you share trait #2 with your element

- ___ list trait #3
- ___ description of why you share trait #3 with your element

Part G: Pictures

You must include the following pictures of your element:

- ___ the Bohr model of your element
- ___ a picture of what your element looks like in nature
- ___ a picture of YOU

Step VI: Presentation

In class, you will present on the element you have chosen with a PowerPoint presentation. In your presentation you will include...

- ___ 5 general facts you learned about your element
- ___ 2 uses for your element (i.e. Part C)
- ___ 3 traits or characteristics that you share with your element
- ___ an example of an isotope
- ___ the Bohr model (and # of protons, neutrons and electrons)
- ___ pictures of your element

You will also show the class the CD you have made. Make sure that you are prepared to present before you actually go and that your presentation is professional and informative.

EXTRA CREDIT

You may receive up to 10 points of extra credit on your project for doing some of the following things:

- Writing a poem about your element and recording it on a CD
- Writing a rap or song about your element and recording it on a CD
- Making a commercial – either a video or radio ad - to “sell” your element and recording it on a CD or DVD
- Making a music video about your element and recording it on CD or DVD
- Any other idea that you have, as long as it gets approved by Caroline

You must provide your own CD or DVD for this extra credit project.

In order to receive the full 10 points, your extra credit project should be refined, professional and you must put forth your full effort. You also must play your CD or DVD for the class during our presentation time.

RESOURCES

Check out these links for more information about your element...

1. www.webelements.com – technical information
2. <http://www.uky.edu/Projects/Chemcomics/> - on the lighter side
3. http://www.chemsoc.org/viselements/pages/pertable_fla.htm – visual representations
4. <http://www.chemicalelements.com/>

Elemental Identities Peer Critique Form

My name is _____ and my element is _____

Name of the person peer critiquing this project is _____

Part A: Does this project contain.....

Part A: CD Cover

____ Name of your element
____ Your name
____ A picture to represent your element
____ Your cd cover should be colorful, original and professional-looking

Part B: General Facts

____ Element name
____ symbol
____ group and period number
____ metal, non-metal or metalloid?
____ family the element belongs to
____ atomic number
____ atomic mass
____ number of protons
____ number of neutrons
____ number of electrons
____ most common state of matter (solid, liquid or gas)
____ who discovered the element
____ when and where was it discovered
____ size of atomic radius
____ ionization energy
____ electronegativity

Part C: About Me

____ A description of the element including real world examples (at least 3) of where the element is found in nature (must be in paragraph form)
____ Include a picture for each example

Part D: Isotopes

____ describe what the isotope is used for
____ describe how the isotope is different from the more popular form of the element on the Periodic Table
____ include the atomic number
____ include the atomic mass
____ number of protons, neutrons and electrons
____ Include a picture of the isotope

Part E: Friends

____ picture of friend #1
____ explanation for why your element would be attracted to friend #1
____ picture of friend #2
____ explanation for why your element would be attracted to friend #2

____ picture of friend #3
____ explanation for why your element would be attracted to friend #3
____ picture of friend #4
____ explanation for why your element would be attracted to friend #4

Part F: What I Share With My Element

____ list trait #1
____ description of why you share trait #1 with your element
____ list trait #2
____ description of why you share trait #2 with your element
____ list trait #3
____ description of why you share trait #3 with your element

Part G: Pictures

____ the Bohr model of your element
____ a picture of what your element looks like in nature
____ a picture of YOU

Part B: Comments & Suggestions

1.) Positive comments I have for this project are.... (write 3)

2.) Suggestions I have for improving this project are... (write 3) and if you are specific, you will be helpful.

Elemental Identities Peer Critique Form

My name is _____ and my element is _____

Name of the person peer critiquing this project is _____

Part A: Does this project contain.....

Part A: CD Cover

____ Name of your element
____ Your name
____ A picture to represent your element
____ Your cd cover should be colorful, original and professional-looking

Part B: General Facts

____ Element name
____ symbol
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____ picture of friend #1
____ explanation for why your element would be attracted to friend #1
____ picture of friend #2
____ explanation for why your element would be attracted to friend #2

____ picture of friend #3
____ explanation for why your element would be attracted to friend #3
____ picture of friend #4
____ explanation for why your element would be attracted to friend #4

Part F: What I Share With My Element

____ list trait #1
____ description of why you share trait #1 with your element
____ list trait #2
____ description of why you share trait #2 with your element
____ list trait #3
____ description of why you share trait #3 with your element

Part G: Pictures

____ the Bohr model of your element
____ a picture of what your element looks like in nature
____ a picture of YOU

Part B: Comments & Suggestions

1.) Positive comments I have for this project are.... (write 3)

2.) Suggestions I have for improving this project are... (write 3) and if you are specific, you will be helpful.

Elemental Identities Rubric

Categories will be evaluated based on the following scale:

- 5: Demonstrates mastery, exceeds the average, has a unique and inventive approach
- 4: Demonstrates completion of the requirement, but not mastery
- 3: Demonstrates completion of the requirement, but contains significant distracting errors
- 2: Requirement not fully completed, demonstrates partial understanding
- 1: Incomplete, does not demonstrate understanding of the requirement

Step I: What is my identity? [10%]

Each paragraph must be detailed and must thoroughly describe who you are as a person.

- ____ 1. Physical characteristics
- ____ 2. Personality
- ____ 3. Internal identity
- ____ 4. Contrasting identities
- ____ 5. Conflicting identities
- ____ 6. Proud of

____/30 points * 10% * 50 points= _____

Step II: What Periodic Table family represents me? [10%]

Each box on the table is worth 1 point. You earn points on this step for having complete, detailed answers that are logical and reasonable.

____/15 points * 10% * 50 points = _____

Step III: Which element represents me? [10%]

Each box on the table is worth 1 point. You earn points on this step for having complete, detailed answers that are logical and reasonable.

____/30 points * 10% * 50 points = _____

Step IV: Pick an element [10%]

In this section, you must give 5 reasons for why you picked your element. Your reasons must be detailed, complete and logical and must fully explain why you picked the element that you did.

- ____ reason #1
- ____ reason #2
- ____ reason #3
- ____ reason #4
- ____ reason #5

____/25 points * 10% * 50 points= _____

Step V: Create your CD Square [60%]

Each category of the CD square will be graded based on the appearance (colorful, creative, original and professional-looking) and the content (whether you sufficiently included all the required information). Each category will be weighed equally.

- ___ Part A: CD Cover
- ___ Part B: General Facts
- ___ Part C: About Me
- ___ Part D: Isotopes
- ___ Part E: Friends
- ___ Part F: What I Share With My Element
- ___ Part G: Pictures

___/35 points * 60% * 50 points = _____points

Step VI: Presentation [20%]

Your presentation includes...

- ___ 5 general facts you learned about your element
- ___ 2 uses for your element (i.e. Part C)
- ___ 3 traits or characteristics that you share with your element
- ___ an example of an isotope
- ___ the Bohr model (and # of protons, neutrons and electrons)
- ___ pictures of your element
- ___ is professional and polished (you practiced ahead of time)

___/35 points * 20% * 50 points= _____points

TOTAL POINTS:

- Step 1= _____
- Step 2 = _____
- Step 3 = _____
- Step 4= _____
- Step 5 = _____
- Step 6 = _____

___/50 points (<---- goes into the gradebook)

Extra Credit

___/10 points

NEW GRADE: _____/50 points