

Atomic Brother

Topic: Atoms & Elements
(middle/high school chemistry)

by Lodge

Atomic Brother

Of the three main particles that Adam adores
He likes the proton; yea it's got the positive charge
Not the neutral vibe that the neutron gives
Or the far out places where electrons live
With the nucleus at the center or core
Where the protons & neutrons are guarding the door
...Outside is a cloud of negativity
Of electrons as small as they can be

Chorus:

Hey, atomic number
Add the protons in the middle
Hey little atomic brother
Won't ya group up? – got similar reactions
Hey what's your chemical symbol?
2 letters to identify you just a little
Hey, how do you handle your water?
Won't ya group up, and stand up on the table

Well, Adam knows no particular charge
'cause protons and electrons are the same in the yard
Though isotopes, the same elements
Have a different number of neutrons, yea
Mendeleev took the 63 - first elements
And from his knees he yelled
“organize, give me hope
take the average mass of all these isotopes”

Henry Mosley disagreed with Mendeleev
He thought atomic number was the place to be -lalalala
Reorganize this table please - lalalala
Leaving out the dash 14s

So, carbon-14 takes a cold back seat
On the periodic table right next to me
They call me 7, ya'll - I'm nitrogen
All around the earth, yea I'm back again

Student Lyric Guide

Name: _____

Atomic Brother

Of the three main particles that Adam adores

The three particles that make up an atom are

1. _____

2. _____

3. _____

He likes the proton; yea it's got the positive charge

What is the charge of a proton? _____

Not the neutral vibe that the neutron gives

What is the charge of a neutron? _____

Or the far out places where electrons live

What is the charge of an electron? _____

With the nucleus at the center or core

What is the nucleus of an atom? _____

Where the protons & neutrons are guarding the door

What two particles compose the nucleus? What is the charge of each particle?

1. _____

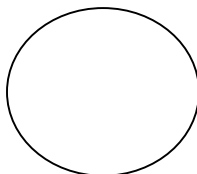
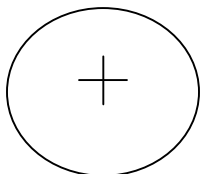
2. _____

...Outside is a cloud of negativity

In what part of an atom are electrons located? _____

Why is the region surrounding the nucleus called the electron cloud? _____

Of electrons as small as they can be



It takes nearly _____ electrons to equal the mass of _____ proton!

_____ (AMU) are used to measure the mass of protons, neutrons and electrons.

1 proton has a mass of _____ amu

1 neutron has a mass of _____ amu

1 electron has a mass of _____ amu

Hey, atomic number

Add the protons in the middle

What is the atomic number of an element? _____

How is an element identified on the periodic table? _____

What is the atomic number of oxygen? _____

How many protons does one atom of oxygen contain? _____

Hey little atomic brother

Won't ya group up? – got similar reactions

A column on the periodic table is called a _____.

What do elements in the same group have in common? _____

A row on the periodic table is called a _____.

**Hey what's your chemical symbol?
2 letters to identify you just a little**

What is the chemical symbol of an element? _____

What is the chemical symbol for carbon? _____ iron _____ nitrogen _____

**Hey, how do you handle your water?
Won't ya group up, and stand up on the table**

How do elements in the following groups react with water?

Group 1: _____

Group 2: _____

Group 18: _____

**Well, Adam knows no particular charge
'cause protons and electrons are the same in the yard**

Number of _____ = number of _____ in an atom!!

How many protons are in one atom of Chlorine? _____

How many electrons are in one atom of Chlorine? _____

Does one atom of a chlorine have a charge? Explain _____

**Though isotopes, the same elements
Have a different number of neutrons, yea**

Define isotope: _____

Mendeleev took the 63 - first elements

Who created the first periodic table? _____

How many elements were included on the first periodic table? _____

**And from his knees he yelled
“organize, give me hope
take the average mass of all these isotopes”**

How did Mendeleev organize the first periodic table? _____

**Henry Mosley disagreed with Mendeleev
He thought atomic number was the place to be -lalalala
Reorganize this table please - lalalala**

Leaving out the dash 14s

There are many different isotopes of carbon, including

1. _____

2. _____

3. _____

There are ____ protons and _____ neutrons in carbon-12.

There are ____ protons and _____ neutrons in carbon-13.

There are ____ protons and _____ neutrons in carbon-14.

MASS NUMBER



****Hint: Mass number = protons + neutrons*

**So, carbon-14 takes a cold back seat
On the periodic table right next to me**

In what group is Carbon located on the periodic table? _____

They call me 7, ya'll - I'm nitrogen

What is the atomic number of nitrogen? _____

In what group is Nitrogen located on the periodic table? _____

All around the earth, yea I'm back again

What % of the atmosphere is composed of nitrogen? _____

Label the following on the correct line: **chemical symbol, atomic number, atomic mass, element name**

1	←	_____
H	←	_____
HYDROGEN	←	_____
1.0080	←	_____

How many protons are in one atom of hydrogen? _____

How many electrons are in one atom of hydrogen? _____

What is the atomic mass of one atom of hydrogen? _____

Teacher Key

Name: _____ KEY _____

Atomic Brother

Of the three main particles that Adam adores

The three particles that make up an atom are

1. proton

2. neutron

3. electron

He likes the proton; yea it's got the positive charge

What is the charge of a proton? positive

Not the neutral vibe that the neutron gives

What is the charge of a neutron? No charge 'neutral'

Or the far out places where electrons live

What is the charge of an electron? electron

With the nucleus at the center or core

What is the nucleus of an atom? Very small center core of an atom

Where the protons & neutrons are guarding the door

What two particles compose the nucleus? What is the charge of each particle?

1. protons

2. neutrons

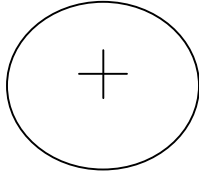
...Outside is a cloud of negativity

In what part of an atom are electrons located? Electron cloud

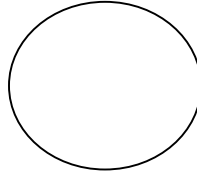
Why is the region surrounding the nucleus called the electron cloud? _____

Electrons move rapidly around the nucleus but technology is not advanced enough to determine the exact location of an electron at any specific point...so electrons are said to be somewhere in the 'cloud' surrounding the nucleus

Of electrons as small as they can be



Proton



neutron



electron

It takes nearly 2000 electrons to equal the mass of 1 proton!

Atomic mass units (AMU) are used to measure the mass of protons, neutrons and electrons.

1 proton has a mass of 1amu

1 neutron has a mass of 1 amu

1 electron has a mass of 1/2000 amu

Hey, atomic number

Add the protons in the middle

What is the atomic number of an element? _____

_____ Number of protons in one atom of the element

How is an element identified on the periodic table? _____

_____ Identified by the atomic number of the element or # of protons

What is the atomic number of oxygen? 6

How many protons does one atom of oxygen contain? 6

Hey little atomic brother

Won't ya group up? – got similar reactions

A column on the periodic table is called a group.

What do elements in the same group have in common? _____

_____ Similar reactivity with other elements in the group.

A row on the periodic table is called a period.

**Hey what's your chemical symbol?
2 letters to identify you just a little**

What is the chemical symbol of an element? _____
_____ 1, 2, or 3 letters to identify the element; when two or more letters are present,
only the first letter is capitalized

What is the chemical symbol for carbon? C iron Fe nitrogen N

**Hey, how do you handle your water?
Won't ya group up, and stand up on the table**

How do elements in the following groups react with water?
Group 1: Very violently
Group 2: Very slowly or not at all
Group 18: Not at all; rarely react with ANY substance

**Well, Adam knows no particular charge
'cause protons and electrons are the same in the yard**

Number of protons = number of electrons in an atom!!

How many protons are in one atom of Chlorine? 17
How many electrons are in one atom of Chlorine? 17

Does one atom of a chlorine have a charge? Explain No, because the number of
positive charges equals the number of negative charges, so there is no electrical charge
on one atom of chlorine

**Though isotopes, the same elements
Have a different number of neutrons, yea**

Define isotope: atoms of the same element that have the same number of protons
but different numbers of neutrons.

Mendeleev took the 63 - first elements

Who created the first periodic table? Mendeleev

How many elements were included on the first periodic table? 63

**And from his knees he yelled
“organize, give me hope
take the average mass of all these isotopes”**

How did Mendeleev organize the first periodic table? By atomic mass of each element

**Henry Mosley disagreed with Mendeleev
He thought atomic number was the place to be –lalalala
Reorganize this table please - lalalala**

How did Henry Mosley reorganize the periodic table? According to ascending atomic number

Leaving out the dash 14s

There are many different isotopes of carbon, including

1. carbon - 12
2. carbon - 13
3. carbon - 14

There are 6 protons and 6 neutrons in carbon-12.

There are 6 protons and 7 neutrons in carbon-13.

There are 6 protons and 8 neutrons in carbon-14.

MASS NUMBER



****Hint: Mass number = protons + neutrons*

**So, carbon-14 takes a cold back seat
On the periodic table right next to me**

In what group is Carbon located on the periodic table? 14

They call me 7, ya'll - I'm nitrogen

What is the atomic number of nitrogen? 7

In what group is Nitrogen located on the periodic table? 15

All around the earth, yea I'm back again

What % of the atmosphere is composed of nitrogen? 80%

Label the following on the correct line: *chemical symbol, atomic number, atomic mass, element name*

1	←	<i>ATOMIC NUMBER</i>
H	←	<i>CHEMICAL SYMBOL</i>
HYDROGEN	←	<i>ELEMENT NAME</i>
1.0080	←	<i>ATOMIC MASS</i>

How many protons are in one atom of hydrogen? 1

How many electrons are in one atom of hydrogen? 1

What is the atomic mass of one atom of hydrogen? 1.0080

Music Video Extension Activity

1. Hand out or project the lyrics and read them out loud and discuss their meaning
2. Play the song for the students, multiple times, encouraging them to sing along
3. Use the student lyric guide in place of, or to supplement class notes
4. Allow students class time, in small groups, to “act” out a portion of the song
5. Film the student groups singing/acting out the song