

Pd: _____ Science Number: _____



**For Chp 12:
Draw the current model of the atom! Be sure to label
(we will draw this in class)**

Name: _____ **pd:** _____

Parent Signature: _____

Use Sections 1 & 2 to match the Definition. Write the LETTER!

word	Letter it matches	Match the definition to the correct word
1. atom	Letter: _____	a. the negatively charged particles found in all atoms
2. theory	Letter: _____	b. a representation of an object or system
3. electrons	Letter: _____	c. the smallest particle into which an element can be divided and still be the same substance
4. model	Letter: _____	d. the positively charged particles in the nucleus
5. nucleus	Letter: _____	e. a unifying explanation for a broad range of hypotheses and observations that have been supported by testing
6. electron clouds	Letter: _____	f. the SI unit used to measure the masses of particles in atoms
7. atomic mass unit (amu)	Letter: _____	g. the tiny, extremely dense, positively charged region in the center of the atom
8. protons	Letter: _____	h. the particles of the nucleus that have no charge
9. neutrons	Letter: _____	i. the number of protons in the nucleus of an atom
10. atomic number	Letter: _____	j. regions inside an atom where electrons are likely to be found

Section 1: Development of the Atomic Theory (p 304-310)

1. Look at figure 1. What did Democritus think of an atom?

2. pg305 Dalton thought an atom looked like...**Draw & Describe in the box**

3. **J. J. Thomson** discovered through his Cathode-Ray Experiment that there are identical particles found in every atom. ...**Draw & Describe his model**

4. Copy figure 6 down in the box below: **Rutherford's Model**

5. Draw **Bohr's model** in the box below:

Section 2: The Atom

1. How small is an atom? _____

2. Look at the small tables on pages 312 and 313. Fill in the boxes below

	Charge	Mass (amu)	Location
Proton			
Neutron			
Electron			

3. Copy figure 13, a helium atom, in the box →

1: use these terms: electron, nucleus, electron orbit, proton, neutron, atom. (you may use some terms twice): An atom is composed of a _____, containing _____ & _____, surrounded by _____. Each _____ has a unique structure, with a different number of _____, _____, & _____.

2. Proton: _____ charge, in nucleus, 1 amu

3. Neutron: _____ charge, in nucleus, 1 amu

4. Electron: _____ charge, outside nucleus, 0 amu

5. Atomic # = # of _____

6. Isotopes = same number of protons, different number of _____

7. Mass # = # of _____ + # of _____

8. Atomic _____ = weighted average of the masses of all an element's naturally occurring

Atoms & Elements Quiz: Circle the correct answer after you watch the video
 (this link is on the web page: <http://mrsgillumscience.com>)
http://www.bbc.co.uk/bitesize/ks3/science/chemical_material_behaviour/atoms_elements/activity/

1. Which of these is the smallest particle? an atom a molecule a speck of dust
2. Which of these is the correct symbol for magnesium? MG mg Mg
3. Which statement about elements is correct?
 most elements are metals most elements are non-metals
 there are about the same number of metals and non-metals
4. Where are the metals found in the periodic table?
 on the left on the right scattered all over
5. Which of the following is not a general property of metals?
 shiny good conductor of heat poor conductor of electricity
6. Which of the following is not a general property of non-metals?
 brittle strong poor conductor of heat
7. An element sinks in water & makes ringing sound when hit is most likely:
 a metal a non-metal an alloy

Teach a parent: Today's concept is:

**Explain what the structure of an atom. Be sure to use ALL the terms:
 proton, neutron, electron and the locations they are found**

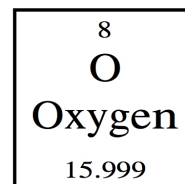
Parent Response

1. _____ I'm not sure my child really understands, therefore, I don't either.
 Please work with him/her and let's try again.
2. _____ The concept was explained thoroughly with effective examples he/she created.
 "By golly, I think they've got it!"
3. _____ WOW! My child did an exceptional job! It was logically explained, therefore I caught on immediately and feel confident about teaching it to others. The self-created examples were a perfect fit. My child even asked me a question at the end to make sure I understood.
 I believe my child could effectively teach this concept to others.

Parent Signature: _____ Date: _____

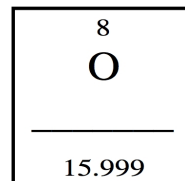
Mom or Dad Comments: Please explain how your student taught you this concept and what you learned in 1-2 sentences!

The Atoms Family Atomic Math Challenge

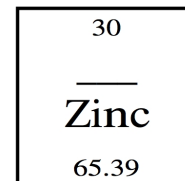


← _____
 ← _____
 ← _____
 ← _____

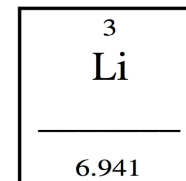
Atomic number equals the number of _____ or _____
 Atomic mass equals the number of _____ + _____



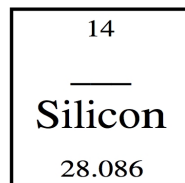
Atomic # = _____
 Atomic Mass = _____
 # of Protons = _____
 # of Neutrons = _____
 # of Electrons = _____



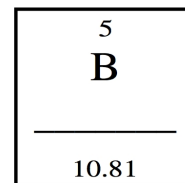
Atomic # = _____
 Atomic Mass = _____
 # of Protons = _____
 # of Neutrons = _____
 # of Electrons = _____



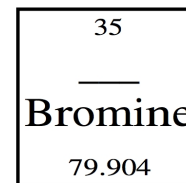
Atomic # = _____
 Atomic Mass = _____
 # of Protons = _____
 # of Neutrons = _____
 # of Electrons = _____



Atomic # = _____
 Atomic Mass = _____
 # of Protons = _____
 # of Neutrons = _____
 # of Electrons = _____



Atomic # = _____
 Atomic Mass = _____
 # of Protons = _____
 # of Neutrons = _____
 # of Electrons = _____



Atomic # = _____
 Atomic Mass = _____
 # of Protons = _____
 # of Neutrons = _____
 # of Electrons = _____

Additional room for Notes, if you want to add some!

16
S

32.06

Atomic # = _____
 Atomic Mass = _____
 # of Protons = _____
 # of Neutrons = _____
 # of Electrons = _____

53

Iodine

126.905

Atomic # = _____
 Atomic Mass = _____
 # of Protons = _____
 # of Neutrons = _____
 # of Electrons = _____

25
Mn

54.938

Atomic # = _____
 Atomic Mass = _____
 # of Protons = _____
 # of Neutrons = _____
 # of Electrons = _____

12
Mg

24.305

Atomic # = _____
 Atomic Mass = _____
 # of Protons = _____
 # of Neutrons = _____
 # of Electrons = _____

18

Argon

39.948

Atomic # = _____
 Atomic Mass = _____
 # of Protons = _____
 # of Neutrons = _____
 # of Electrons = _____

19
K

39.098

Atomic # = _____
 Atomic Mass = _____
 # of Protons = _____
 # of Neutrons = _____
 # of Electrons = _____

79

Gold

196.967

Atomic # = _____
 Atomic Mass = _____
 # of Protons = _____
 # of Neutrons = _____
 # of Electrons = _____

1
H

1.008

Atomic # = _____
 Atomic Mass = _____
 # of Protons = _____
 # of Neutrons = _____
 # of Electrons = _____

9

Fluorine

18.998

Atomic # = _____
 Atomic Mass = _____
 # of Protons = _____
 # of Neutrons = _____
 # of Electrons = _____

Additional room for Notes, if you want to add some!

Atomic Math Review

The Rules:

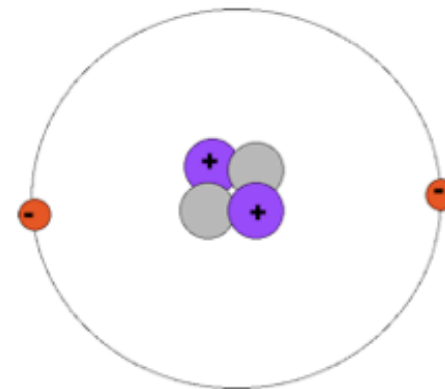
Atomic Number = the number of _____ or _____

Atomic Mass = the number of _____ + _____

Number of _____ = atomic mass - number of protons

Element	Atomic #	Atomic Mass	Protons	Neutrons	Electrons
Hydrogen			1		
	9				
		23			11
Chlorine					
		56	26		
					47
		195			
Radon					
	90				

Label ALL of the part of the atom ---->

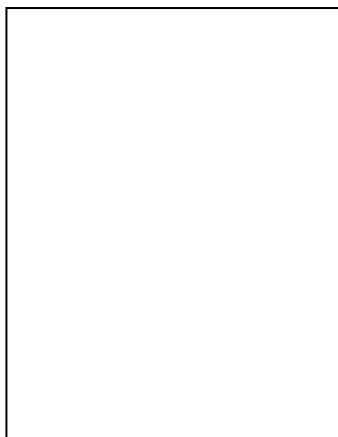


My Chapter 13 Little Book on:

The Periodic Table

My Chapter 13 Little Book

Draw and label an example of an element's Periodic Table Square
Use pg 328 as a guide & as an example



Definitions: From the Book / or YOUR definition

Word: Pg found	Sect 1: Arranging the Elements Pg 324-333 Match the word with the correct definition
group: _____	a. A horizontal row of elements in the periodic table is called a _____
alkali : _____	b. A vertical column of elements in the periodic table is called a _____
period : _____	c. Neon and argon are known as _____
noble gases : _____	d. Elements in the same _____ often have similar chemical and physical properties.
group : _____	e. The elements in Group 1 are the _____ metals, which react violently with water.
Sect 2: Grouping the elements on pgs 334-341 MATCH the definitions	
Alkali metals : _____	A. This group (Group 18 or 8) are unreactive (inert) nonmetals. Atoms have a complete set of electrons (8, an octet) in their outer level.
Alkaline Earth Metals: _____	B. This group (Group 1) are the most reactive metals. Atoms of the alkali metals have one electron in their outer level.
Halogens: _____	C. This group (Group 2) are less reactive than the alkali metals. Atoms of these metals have two electrons in their outer level.
Noble gases _____	D. This group (Group 17 OR 7) are very reactive nonmetals. Atoms of the halogens have seven electrons in their outer level.

Additional Notes Space:

Bite Size Lab!!!

Go to: My web page and click on the :Bite Size Lab

http://www.bbc.co.uk/schools/ks3bitesize/science/chemical_material_behaviour/atoms_elements/activity.shtml

Atoms and elements - Test Bite (Don't try to type in the web address!)

- Which of these is the smallest particle?
a) an atom b) a molecule c) a speck of dust
- Which of these is the correct symbol for magnesium? a) MG b) mg c) Mg
- Which statement about elements is correct?
a) most elements are metals
b) most elements are non-metals
c) there are about the same number of metals and non-metals
- Where are the metals found in the periodic table?
a) on the left b) on the right c) scattered all over
- Which of the following is not a general property of metals?
a) shiny b) good conductor of heat c) poor conductor of electricity
- Which of the following is not a general property of non-metals?
a) brittle b) strong c) poor conductor of heat
- An element sinks in water and makes ringing sound when hit.
It is most likely to be: a) a metal b) a non-metal c) an alloy

___ 8. few electrons in the outer energy level

___ 9. have some properties of the other two categories

___ 10. brittle and nonmalleable solids

___ 11. complete or almost-complete set of electrons in the outer energy level

___ 12. conducts heat from a stovetop to your food

___ 13. can prevent a spark from igniting gasoline in your car

___ 14. half-complete shell of electrons in the outer energy level

___ 15. formed into electrical wires

___ 16. flattened into sheets of food wrap without shattering

___ 17. border the zigzag line on the periodic table

**For questions 8-17
Use the choices
below to answer the
questions:**

a. metals

b. nonmetals

c. metalloids

pg 13

Section 2: Chart: Grouping the Elements (p 334-341)

Group #	Name	Valence Electrons (electrons in the outer level)	Reactivity	Important Properties & Facts
1	<i>Alkali Metals</i>	1	<i>Very Reactive</i>	<i>Soft enough to be cut with a knife Low densities React violently with water (usually stored in oil)</i>
2				
3-12				
13				
14				

Pg14

Group #	Name	Valence Electrons electrons in the outer level	Reactivity	Important Properties & Facts
15				
16				
17				
18				
Hydrogen				

Additional Notes: _____

Teach a parent: Today's concept is:

Explain the different Families / Groups on the Periodic Table

This is really important! Open your Periodic Table and explain the different parts of it. What are metals, nonmetals & metalloids, and some information about each of the families. Help your parent become an expert!

Parent Response

1. _____ I'm not sure my child really understands, therefore, I don't either.
2. _____ The concept was explained thoroughly with effective examples he/she created. "By golly, I think they've got it!"
3. _____ WOW! My child did an exceptional job! .

Parent Signature: _____ Date: _____

Mom or Dad Comments: Please explain how your student taught you this concept and what you learned in 1-2 sentences!

WHO ARE THESE GUYS???

A fun activity to do with your folks- Instead of a "Teach a Parent"

Can you guess which element the clues match?? Have Fun!

Directions: Use your knowledge of the Periodic Table to match the elements with each descriptive statement. Write the element next to the clue

- _____ Boron _____ 1. What Mr. President's speeches do. (example: **BORON**) ☺
- _____ 2. What you do when a guy bugs you to get engaged.
- _____ 3. The Lone Ranger's favorite pet.
- _____ 4. Another name for a policeman.
- _____ 5. Coke and Pepsi, but not water.
- _____ 6. What doctors do for an ill person.
- _____ 7. An evening warrior raiding Rome.
- _____ 8. What body builders want to do to their muscles.
- _____ 9. The unsinkable ship that did.
- _____ 10. What a baby says when their bottle is empty.
- _____ 11. What the police do to illegal card games.
- _____ 12. A place to stash your automobiles.
- _____ 13. What the police do to a robber.
- _____ 14. A nice red flower.
- _____ 15. This is an amazing university.
- _____ 16. The only good thing to do to a dead skunk.
- _____ 17. The place to ride a bucking bronco.
- _____ 18. Someone who has no stomach.
- _____ 19. What happens to your boat if it has a hole in it.
- _____ 20. Theory of Relativity

Parent Signature: _____

pg 16