Quick Review

Chapter 12.1: Atomic Theory

	He thought an atom looked like…
Democritus	
John Dalton	
J.J. Thomson	
Ernest Rutherford	
Niels Bohr	

Chp 12.2 The Atom

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

My Little Book about

THE ATOM

Chapter 12

Draw the current model of the atom! Be sure to label

Name: _____ pd: ____

Parent Signature: _____

Sect 1: Development of the Atomic Theory (pg 304)

Word: Pg found	Book definition, and used in a sentence below the book definition
atom	
theory	
electrons	
nucleus	
Electron cloud	

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

Please use this format for the Teach It Master It (TIMI) assignments.. This should be fun!! If dancing around the table helps to teach a concept, do it! The better **YOU the student** can teach the concept, the better YOU the student will understand the concept. AND you might just have some fun too! To teach the assignment/concept, you may use ANY or ALL of these techniques to help. You may also use the book as a guide. PLEASE HAVE FUN!!

A. Simply explain the concept. No written work is necessary.
B. Explain the concept and use some notebook paper to show real-life examples you created while teaching.
C. Write out the thought process you will use to explain the concept. You may do this in steps or a one-chunk paragraph form.
D. Show real-life examples you used along the way to effectively explain the process.

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 3-5 sentences!

Space for any additional notes from this section:

Atomic Math Review

The Rules:

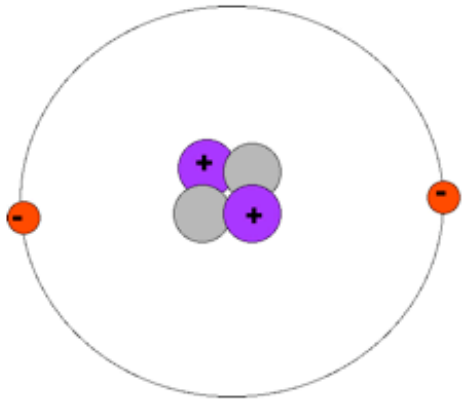
Atomic Number = the number of _____ **or** _____

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 the parts of the atom:



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

1. An atom is the _____
   _____
2. A _____ is a unifying explanation for a broad range of hypotheses and observations that have been supported by testing.
3. Look at figure 1. What did Democritus think?
   _____
   _____
4. Look at the yellow box on pg 305 -Dalton's theory stated these three things:
   - All substances are made of _____. Atoms are small particles that cannot be _____, _____, or _____.
   - Atoms of the same elements are _____, and atoms of different elements are different.
   - Atoms join with other atoms to make _____
5. J. J. Thomson discovered through his Cathode-Ray Experiment that there are identical particles found in every atom. These negatively charged particles are now called _____.
6. Ernest Rutherford decided to test Thomson's theory. Describe the fig 5 diagram
   _____
   _____
   _____
   _____
   _____
7. Copy figure 6 down in the box →

Rutherford's Model

8. Two short years later, Niels Bohr modified Rutherford's theory.
He suggested that: _____
_____

9. True or False (circle one): Bohr proposed that no paths are located between the levels, but electrons can jump from one level to the next.

10. Draw Bohr's model in the second box →

11. Later in the 1900s, two Europeans made additional contributions to the atomic theory. What were they? _____
_____
_____

Additional Section 1 notes: _____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

16 S _____ 32.06	53 _____ Iodine 126.905	25 Mn _____ 54.938
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 = _____
12 Mg _____ 24.305	18 _____ Argon 39.948	19 K _____ 39.098
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 = _____
79 _____ Gold 196.967	1 H _____ 1.008	9 _____ Fluorine 18.998
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 = _____

Section 2: The Atom (311)

Word: Pg found	Book definition	My sentence definition or use a drawing
protons		
Atomic mass unit (amu)		
neutrons		
Atomic number		
isotopes		
Mass number		
Atomic mass		

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 →

4. Find the green heading that says "The Number of Protons Determines the Element": Read the paragraph. The atomic number of an atom is:

5. Give some examples of isotopes:

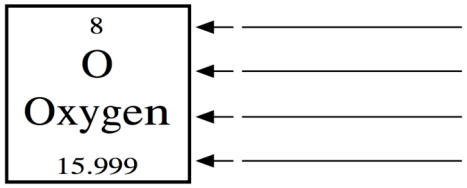
6. True or false (circle one): Most elements have two or more stable isotopes in nature.

7. What is the mass number? _____ + _____

8. How do you calculate the number of neutrons?

_____ - _____

The Atoms Family Atomic Math Challenge

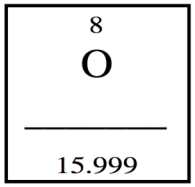


Atomic number equals the number of

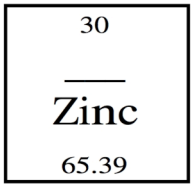
_____ or _____

Atomic mass equals the number of

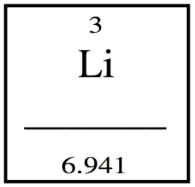
_____ + _____



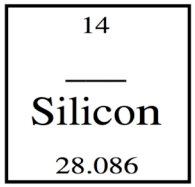
Atomic # = _____
Atomic Mass = _____
# of Protons = _____
# of Neutrons = _____
# of Electrons = _____



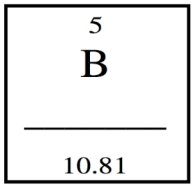
Atomic # = _____
Atomic Mass = _____
# of Protons = _____
# of Neutrons = _____
# of Electrons = _____



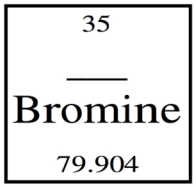
Atomic # = _____
Atomic Mass = _____
# of Protons = _____
# of Neutrons = _____
# of Electrons = _____



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 = _____

Notes:_____
_____
_____
_____
_____
_____

Teach a parent: Today's concept is:
Explain what is an "atomic model"
Show some examples and explain why models are used.
(use your book, Google etc)

Please use this format for the Teach It Master It (TIMI) assignments.. This should be fun!! If dancing around the table helps to teach a concept, do it! The better **YOU the student** can teach the concept, the better YOU the student will understand the concept. AND you might just have some fun too! To teach the assignment/concept, you may use ANY or ALL of these techniques to help.
You may also use the book as a guide. PLEASE HAVE FUN!!

A. Simply explain the concept. No written work is necessary.
B. Explain the concept and use some notebook paper to show real-life examples you created while teaching.
C. Write out the thought process you will use to explain the concept. You may do this in steps or a one-chunk paragraph form.
D. Show real-life examples you used along the way to effectively explain the process.

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 3-5 sentences!

_____
_____
_____
_____
_____
_____
_____

Space for any additional notes from this section:

_____
_____
_____
_____
_____
_____
_____