Science 10 Mr. Harwood
Number #

**Intro to the Atomic Theory**

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| Slide 2 - Matter* What is matter?
* What is matter made up of?
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| Slide 3 – Atoms* What are atoms made up of?
* What are subatomic particles?
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| Slide 4 – Subatomic Particles* What are the 3 types of subatomic particles?
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| Slide 5 - Protons* Represented as:
* Have a +1 electrical charge
	+ Positive Protons
* Have a relative mass of ~
* Located in the atom’s
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| Slide 6 – Neutrons* Represented as:
* Has no electrical charge
	+ No charge neutrons
* Have a relative mass of ~
* Located in the atom’s
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| Slide 7 - Electrons* Represented as:
* Have a -1 electrical charge
	+ Negative electrons
* Have a relative mass of ~
* Located in the atom’s
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| Slide 8 – Comparing the 3 Subatomic Particles

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|  | Symbol | Electrical Charge | Relative Mass | Location in the Atom | What it accounts for |
| Protons |  |  |  |  |  |
| Neutrons |  |  |  |  |  |
| Electrons |  |  |  |  |  |

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| Slide 9 – Anatomy of an Atom* Nucleus =
* Electrons =
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| Slide 10 – Atomic Number and Mass* Atomic Number
* Atomic Mass

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| Slide 11 – Neutral Atoms* There are the same number of p+ in an atom as e-
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* Together, these two charges cancel each other out, making the atom neutrally charged
* **Example:** Potassium (K) has an atomic number of 19. That means there are 19 protons in the nucleus. That means there are also 19 electrons in the atom.
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| Slide 12 – Practice* For Boron:
	+ What is the atomic number?
	+ What is the atomic mass?
	+ How many protons are in the atom?
	+ How many neutrons are in the atom?
	+ How many electrons are in the atom?

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| Slide 13 – Practice* For Silicon:
	+ What is the atomic number?
	+ What is the atomic mass?
	+ How many protons are in the atom?
	+ How many neutrons are in the atom?
	+ How many electrons are in the atom?

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| Slide 13 – Nuclear Charge* Nuclear Charge =
* Since the protons are the only subatomic particle in the nucleus with a charge, **the nuclear charge = the number of protons**
* Atomic # =
* The atomic number for Carbon is 6. That means there are 6 protons in the nucleus. That also mean that the nuclear charge is +6.
	+ What are the nuclear charges on the rest of these elements?

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| Slide 14 – Review* What are the charges on the subatomic particles?
* What particle(s) account for the atom’s mass?
* What particle(s) account for the atom’s volume?
* What is a neutral atom?

Homework* + Read pg. 170-171
	+ Complete the Atomic Structure WS
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**Atomic Structure Worksheet**

*Fill in the blanks for the elements in this chart.*

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| **Element** | **Element Symbol** | **Number of Protons** | **Number of Neutrons** | **Number of Electrons** | **Atomic Mass** | **Atomic Number** | **Nuclear Charge** |
| lithium |  |  |  |  |  |  |  |
|  |  | 6 |  |  |  |  |  |
|  |  |  |  | 17 |  |  |  |
|  | Ag |  |  |  |  |  |  |
|  |  |  |  |  |  |  | 82 |
|  |  |  |  |  | 40.1 |  |  |
| tantalum |  |  |  |  |  |  |  |
|  |  |  |  |  |  | 88 |  |