|  |  |  |
| --- | --- | --- |
| **Mass Number** | **Atomic Number** | **Average Atomic Mass** |
| Not found on the periodic table | The whole number in every box on the periodic table | The decimal number in every box on the periodic table |
| Equal to the approximate mass of an atom, in amu | Equals the number of protons | The weighted average of the masses of all the isotopes of a given element |
| number of neutrons + number of protons | Defines an element | Takes into account that some isotopes are more abundant than other isotopes |
| Each isotope of a given element has its own distinct number of this | 1 – 118 are possible values for this number | The average mass of all atoms in a sample of an element, no matter where the sample is found |
| Represented by A | Represented by Z |  |
|  |  |  |
| Carbon - 14 | Image result for image, periodic table square | Image result for image, periodic table square |

|  |  |  |
| --- | --- | --- |
| **proton** | **neutron** | **electrons** |
| Discovered by Thompson  *(or proposed by)* | Discovered after the other 2 subatomic particles | Discovered by Thompson |
| Found in the nucleus | Found in the nucleus | Found outside the nucleus |
| Weighs about 1 amu | Weighs about 1 amu | Weighs about 0.0005 amu (almost nothing!) |
| Positively charged | No charge | Negatively charged |
| Equals the atomic number (Z) | Equals the mass number (A) – atomic number (Z) | Equals the number of protons in a neutral atom |
| Defines the element |  | Doesn’t really contribute to the weight of the atom |
|  |  | Found in the “empty space” of the atom |