**Chemistry Revision: Structure of an**

Mastery Matrix Points

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| --- |
| Describe the plum pudding model of the atom |
| Describe the current (nuclear) model of the atom giving the relative charge and mass of the subatomic particles |
| Recall the radius of an atom and it’s nucleus |
| Calculate protons, neutrons and electrons for an atom linking to mass and atomic number |
| Draw the electronic structure and work out the electronic configuration for a given atom |
| Define an ‘isotope’ |
| Isotopes to relative atomic mass to explain why this is an average |
| Calculate the relative atomic mass of an element given the percentage abundance of its isotopes |
| Calculate the relative formula mass of a substance |

Key Knowledge

Definitions:

Plum pudding model

Nuclear model

Isotope

Ion

Relative atomic mass

Radius of an atom = nm

 = m

Radius of a nucleus is \_\_\_\_\_\_\_\_\_\_ times smaller than the atomic radius, about \_\_\_\_\_\_\_\_\_\_\_\_m.

What order were the parts of the atom discovered?

Subatomic particles

|  |  |  |
| --- | --- | --- |
| *Name* | *Relative mass* | *Charge* |
| Proton |  |  |
| Neutron |  |  |
| Electron |  |  |

Using the periodic table:

*To find the number of protons…*

*To find the number of electrons…*

*To find the number of neutrons…*

**Atom**

Understanding and Explaining

1. Describe in detail the structure of the atom using the current theory.
2. Describe what the atomic number and mass number on the periodic table tell us.
3. Why might scientists make changes to an existing theory?
4. Describe the alpha scattering experiment, its results and why the results led to a change in the theory of the atom.
5. Explain the role of Niels Bohr in atomic theory.
6. Describe the contribution of James Chadwick to atomic theory.
7. Explain why the relative atomic mass on the periodic table is an average.
8. Calculate the relative atomic mass of neon if the abundances of the atoms are: Ne20 90.92%, Ne21 0.26%, Ne22 8.82%.