**YEAR 11 CHEMISTRY ATAR 2023**

**Extended Response Research Task:**

**Atomic Structure**

**Task**

Your task is to research the areas discussed in the following section, in order to sit a validation as part of CAP 1. You should use a range of resources to research this material, and it is recommended that you produce notes or a report to aid your revision. This work will not be collected or marked, and you **may not** bring it into the assessment, it is as a study aide only. You will be expected to answer questions on the areas below; the questions will take a variety of formats, including extended response questions.

**Areas to research**

**Atomic Structure – Development of the Atomic Model** *(Program Objectives 9 – 17)*

John Dalton, J.J. Thomson, Ernest Rutherford, Niels Bohr, and James Chadwick, among others, contributed to our understanding of the atom and helped create the current atomic model we use to describe the behaviour of the atom today. Subatomic particles’ properties define the properties of the atoms they make up.

Your research should cover:

* The chronology of the discoveries by the scientists in question – how do they fit together to form a timeline?
* Specific experiments done by the scientists, and how outcomes of these experiments advanced our understanding of the structure of the atom.
* Major discoveries that were made, theories that were developed, and developments to atomic models that were proposed.
* Properties and locations of subatomic particles, and how we use the Periodic Table to establish numbers and arrangements of subatomic particles.
* Isotopes of elements, their similarities and differences in terms of atomic structure and physical and chemical properties.

**Suggested Resources**

These resources are a suggested place to start – it is recommended that you use a range of appropriate resources to complete your research.

* Pearson Chapter 2.1 to 2.3: Atomic theory, describing atoms, isotopes
* Lucarelli Chapter 2: Discovering the atom’s structure
* <http://thehistoryoftheatom.weebly.com/index.html>