

Match up element with subatomic particles activity

Atomic Theory Unit

Lesson Plan - Year 9 Science

Victorian Curriculum Enduring Understandings
Students understand the atom as a system of protons, electrons and neutrons, how the current model has developed over time and that many scientists and theories have contributed to its review. They understand relationships within the periodic table of elements, including periods and groups to the structure and reactivity of atoms. They recognise the signs of a chemical reaction and how to classify them.
Victorian Curriculum Unit Description
Students learn that all matter is made of atoms which are composed of protons, neutrons and electrons. They identify the subatomic particles in the atom and learn how this atomic structure and properties of elements are used to organise them in the periodic table. They use atomic symbols to represent elements and ions. They classify types of chemical reactions based on their reactants and products.

Glossary – Activity Specific

subatomic particles	neutron	chemical symbol
electron	mass number	element
proton	atomic number	valence electrons

Content Descriptors from Victorian Curriculum

Mode/Strand/Sub-strand 2	<p>The atomic structure and properties of elements are used to organise them in the periodic table (VCSSU123)</p> <ul style="list-style-type: none">• describing the structure of atoms in terms of electron shells• explaining how the electronic structure of an atom determines its position in the periodic table and its properties
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Goals:

To be able to calculate the number of protons, neutrons and electrons and of an element and to draw the Bohr model and the electronic configuration.

Success Criteria:

I can calculate the number of protons, neutrons and electrons of an element, the electronic configuration and draw the electronic configuration.

Activity

This is an activity that allows the student to calculate the subatomic particles and electronic configuration and draw the Bohr model and will take about 10-15 mins, although realistically you only want the first 30 elements for the students to do this.

You will need 1 periodic table and 1 element set

1. Get the students into groups of 4 and supply them with a periodic table and element set.
2. Get one student to pick out randomly an element from the set.
3. Get all the students to match the symbol with the name and find its place on the periodic table then get them to write down the atomic number and atomic mass and calculate the number of protons, neutrons and electrons, draw the Bohr model and calculate the electronic configuration.
4. Repeat until you feel students have consolidated knowledge

Student Worksheet

[illegible]