

SUBJECT: Chemistry

STANDARD: #1 (Indiana)

C.1.26: Describe physical changes and properties of matter through sketches and descriptions of the involved materials.

C.1.33: Use an element's location in the Periodic Table to determine its number of valence electrons, and predict what stable ion or ions an element is likely to form in reacting with other specified elements.

KEY CONCEPTS: The structure of matter

GENERALIZATION: Describe the possible subatomic particles within an atom or ion.

BACKGROUND: Students have discussed Dalton's Atomic Theory, including its correct and incorrect points. The location and properties of the three subatomic particles has been discussed.

TIERED IN: Process

TIERED ACCORDING TO: Learning style

Ask students the following question: Are you an Actor, Artist, or Author?

Disperse into groups in separate areas of the room according to their response to the question.

TIER 1: ARTISTS

Students are given the following instruction: Using objects in the room construct, or draw on paper a model of an oxygen atom. Your masterpiece must include location and properties of the three main subatomic particles. Be prepared to have a spokesperson describe your work of art.

TIER 2 : ACTORS

Students are given the following instruction: Using yourselves as the subatomic particles, depict what a boron atom would look like if we could see its particles. Your skit must include location and properties of the three main subatomic particles. Be prepared to have a spokesperson describe your animation.

TIER 3 : AUTHORS

Students are given the following instruction: Write a short description of the structure of a sodium atom. Be sure to include location and properties of all subatomic particles. Be prepared to have a spokesperson share your description with the class.

ASSESSMENT: Each group will be assessed on the accuracy of their spokesperson's summary of the following points:

- 1. Correct location of protons, electrons, and neutrons. (In nucleus or moving around nucleus).**
- 2. Relative masses of protons, electrons, and neutrons.**
- 3. Charge of protons, electrons, and neutron.**