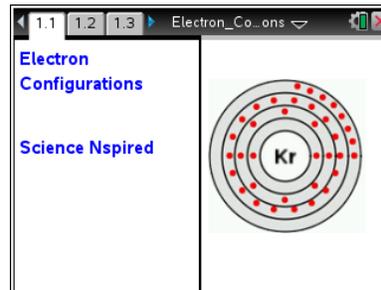




Open the TI-Nspire document *Electron_Configurations.tns*.

Atoms are composed of protons, neutrons, and electrons.

However, the chemical properties of an atom depend almost entirely on the arrangement of the electrons, specifically the electrons in the outer shell. In this activity you will be able to observe the electron configurations of atoms and discover the relationship between the electron configuration and the position of an element in the Periodic Table.

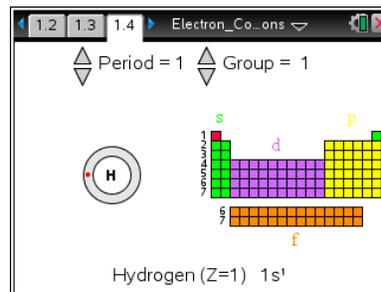


Move to pages 1.2 and 1.3.

Read the introduction on page 1.2 and page 1.3.

Move to page 1.4.

- Adjust the two sliders or the arrow keys to move through the periods and groups in the Periodic Table. Observe the electron configurations. Watch for patterns between the electron configurations at the bottom and the location and number of electrons in the atom. Also try and find patterns between the electron locations in the atom and the location of that element on the periodic table.



Tech Tip: Region *f* on the Periodic Table can be accessed by setting the period to 6 or 7 and then setting the group number to 3.

Move to pages 1.5–1.22. Answer the following questions here or in the .tns file.

- Q1. The 5th element (atomic number 5) in the Periodic Table is in period 2 and group 3. What is this element?
- | | |
|-----------|-----------|
| A. Sodium | C. Carbon |
| B. Boron | D. Oxygen |
- Q2. Carbon has atomic number 6.
Carbon (C) $6 \rightarrow [\text{He}] 2s^2 2p^2$
How many electrons does a neutral carbon atom have?
- | | | | |
|------|------|------|------|
| A. 2 | B. 4 | C. 6 | D. 8 |
|------|------|------|------|
- Q3. The total number of electrons in any neutral atom of any element is the same as the atomic number for that element.
- | | |
|---------|----------|
| A. True | B. False |
|---------|----------|

