

Activity 7 Overview

This activity shows how the electron configuration of each family or group of the periodic table is used to determine the number of valence electrons that each element would have.

Safety Requirements

None

Preparation and Materials Needed

Preparation

Students need the periodic table to complete this assignment.

Materials/Chemicals needed

None

Learning Strategies for Students with Limited English Proficiency

1. Point out new vocabulary words in context and practice using the words as much as possible throughout the activity.

Series	Extreme	Exhibit	Inactivity	Reflect
Disturb	Closest	Simplified	Significant	Farthest
Distinguish	Responsible	Tempted	Attribute	Decompose
Generate	Isolate	Colleague	Puzzled	Extract
Escaped	Rarity	Lack	Circumstances	Abundance
By virtue of	Unmatched	Excess	Deficiency	Readily
Qualify	Magnitude			

2. There is a great deal of new vocabulary in this activity. One way to practice using the vocabulary is for students to work in teams to write meaningful sentences about the content in this activity. Students should strive to write simple sentences using at most five new vocabulary words (given a list). The goal is to use as many of the words as possible (underlining the vocabulary words used), correctly, and using proper English. No two sentences may be nearly identical. For instance, only one of the following sentences would receive credit, since the two are nearly identical:
 - A valence number of eight is responsible for argon's inactivity.
 - A valence number of eight is responsible for neon's inactivity.

However, the following sentence contains different information, although its structure is similar. Therefore, it is acceptable.

- A valence number of seven is responsible for chlorine being a halogen.

The rubric for grading these sentences should include four elements: correct science, correct usage of vocabulary, correct sentence structure and grammar, and quantity of work.

3. Rapid feedback about students' sentences (above) is essential, because the sentences and errors will be fresh in the students' minds. A quick and powerful method for providing this feedback is to prepare a list of examples of incorrect sentences from the work collected. Divide examples into the following categories: incorrect science, incorrect usage of vocabulary, incorrect sentence structure, and incorrect grammar. Choose several examples from the collected work to use in each category and edit the sentences until they contain only one or two obvious errors, or limit the choices to these kinds of sentences. At the beginning of class on the day following the sentence-writing activity, provide each student with a page containing a double-spaced, typed list of the incorrect sentences, with headings for the categories. Allow students 10 minutes to silently make corrections to the sentences. Then, place a copy of the list on the overhead projector and collect students' ideas on how to repair the sentences, guiding them toward correct science and English usage.