**Electron Configuration Analogy**

**Assessment:**

Earlier this chapter, we used the analogy of a hotel to help understand how electrons fill the different energy levels and sublevels in an atom. Using your knowledge of electron configuration, develop your own real-life analogy to help explain why electrons occupy the levels and sublevels in the fashion they do.

Your analogies should explain the following:

1. Why electrons fill energy levels from the lowest to the highest energy (Aufbau Principle).
2. Why electrons spread out and fill each orbital in a sublevel with one electron before any can have two electrons (Hund’s Rule)
3. Why electrons must be unique. In an orbital diagram, you must have an “up” electron and a “down electron, not two “ups” (Pauli Exclusion Principle)
4. Why d’s and f’s fill “out of order”.

**Reflection/ Teaching Tips:**

**Purpose for the assessment:**

This assessment is developed to get students to think creatively about electron configuration. The goal is to gauge students' understanding of the concept of e- configuration. It support peer learning, since students work in groups.

**Possible ways to use the assessment:**

This assessment used during our chapter on electron configuration. It is a group activity with pairs.

**Additional advice for using the assessment:**

Instructor can address the shortcomings with the different groups and helped them explain their analogies better. Instructor needs to make sure the students know how to explain that some sublevels fill out of order. Practice is very important and it really helps students with e- configuration. Creating a rubric for the students will be helpful.

**Student understanding:**

Most students were able to produce serviceable work. However, several students dislike or struggle with being creative, to help counter this, instructor allowed them to work with partners. The biggest struggles for the students were to explain why d's and f's fill out of order and also the Pauli Exclusion Principle.

They understand the difference between energy levels and sublevels. Event seating, airplanes, stores, etc are everyday experiences used to relate to these ideas.

*Possible students’ responses:*The best responses I received used the concept of a mall, and tickets prices for a concert.