

Electron Configuration: Stools Game

Advanced Preparation:

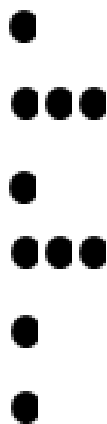
Locate 20 lab stools or chairs

Find a place with enough room to correctly set up the chairs (i.e. hallway)

Procedure:

1. Have students arrange the stools based on the diagram below.

Back



Front

2. Explain the following rules

- Students will line up and maintain the same order throughout the game.
- NO TALKING
 - The teacher will read the Stool Game directions to the students.

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- If a student sits on the wrong stool then the teacher will begin reading the Stool Game directions again.
- All students sitting on a stool must return to the end of the line and the next students in line cannot sit on a stool until the teacher is through reading the directions.

3. Once the students are in a line, the teacher reads the Stool Game directions.

4. Say “GO!” and start the timing process.

5. Pay attention to how students are sitting down on the stools, the second a student sits on the incorrect seat immediately start reading the directions again.

6. Once the students have correctly filled all stools the timer stops.

Background: By following the stool game rules the students are learning how to correctly fill electrons on an orbital filling diagram. The Stool Game Directions include the following rules in Chemistry:

Aufbau’s Rule- electrons enter the lowest available energy level that is not filled

Hund’s Rule- electrons will take empty orbital positions, each spinning in the same direction first, before doubling their occupancy

Pauli Exclusion Principle-two electrons maximum will occupy each orbital and will take on opposite spins when paired

Stool Game Directions

**The name of the game is stools,
Ready? Here are the
rules:**

**The stools are placed in
a pair.**

**Find the seat on the
closest
row and sit down there.**



**If the closest row is filled, you move to the
next row to be seated.**

**If there are 2 or more pairs of stools in a
row, only 1 stool in each pair can be
occupied before the pairs can be completed.**

**All the pairs must be complete before you
take a seat on a new row.**

**Partners on a pair of stools must face
opposite directions, and that's for show.**

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