Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_

* ![MCj03114520000[1]]()![MCj03039750000[1]]()Atoms are so small that the number of them in a baseball is roughly equal to the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ balls that could fit inside a hollow sphere as big as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.![MCj02410910000[1]]()
* Because atoms are so small, it is difficult to create \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of what atoms actually look like.
* Instead, scientists create \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that are used to explain the ways atoms interact.
* One useful conceptual model of the atom is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ atomic model.
* ![MCj03344660000[1]]()This model consists of a central \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ surrounded by electrons traveling in certain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, much like the planets circling the sun.
* There are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ different energy levels, each represented by a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (horizontal row) on the periodic table.
* In the Bohr model, each \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ can only hold a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ certain number of electrons, just like each period can only hold a certain number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Fill in the requested information below:

|  |  |  |  |
| --- | --- | --- | --- |
| Period | Number of Elements | Energy Level | Maximum Number of Electrons |
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Draw Bohr models for the following atoms:

1. lithium 2. boron 3. nitrogen

4. neon 5. sodium 6. carbon

* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the electrons significantly affect chemical properties.
* Specifically, it is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (outermost) electrons that affect how an atom will interact with other atoms.
* Atoms are most stable when they have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ valance shells.
* The elements that naturally have full valence shells are the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Other elements will gain, lose, or share electrons during chemical reactions in order to get this

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* Notice, elements in the same \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (vertical column) on the periodic table will have the same number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* The group the element is found in on the periodic table can also help us to predict how many electrons the element will gain, lose, or share during a chemical \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| Group | Valence Electrons | Add \_\_ Electrons | Lose \_\_ Electrons |
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* The valence electrons are the only electrons that affect the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.of an atom.
* A more simple model, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_., includes only these electrons.

Draw Lewis Dot Structures for the following atoms:

1. lithium 2. boron 3. nitrogen

4. neon 5. sodium 6. carbon