**Bohr Diagrams**

The Bohr-model which is shown in Bohr diagrams shows an atom as a central \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that orbit around it.

Niels Bohr used \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when designing his model. This model can be used as an approximation for the structure of lighter elements, but it runs into a few problems when we try to apply it to larger elements.

To get a better model we have to use the principles of quantum mechanics. We will use the Bohr model as an approximation for the first **twenty** elements.

**What Information is in a Bohr Diagram?**

A Bohr Diagram includes a specific set of information:

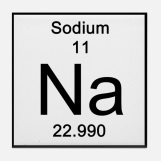
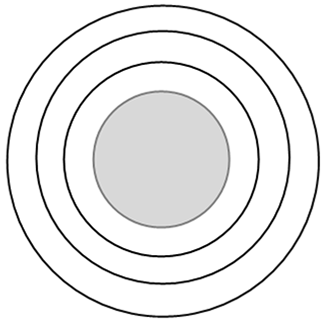
* The number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* The number of ­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* The number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Which \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are in

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ will be entered into the **lowest** (or **first**) energy level before moving onto later levels. The capacity of energy levels for \_\_\_\_\_\_\_\_\_\_\_\_\_\_ follows a sequence where:

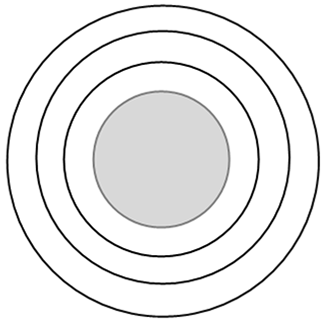
* The first level can hold up to \_\_\_ electrons
* The second level can hold up to \_\_\_ electrons
* The third level can hold up to \_\_\_ electrons
* The fourth level will hold any extras for the elements we may try

**How to draw a Bohr Diagram**

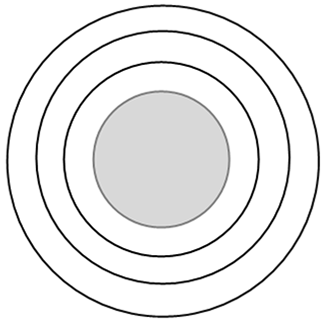
Sodium

1. The atomic \_\_\_\_\_\_\_\_\_\_\_\_ is the number of \_\_\_\_\_\_\_\_\_\_\_
2. The atomic \_\_\_\_\_\_\_\_\_\_ subtracted by the number of \_\_\_\_\_\_\_\_\_ will give the number of \_\_\_\_\_\_\_\_\_\_
3. An element has the same number of electrons as it has protons
4. Remember the order 2/8/8/…
5. Find out how many \_\_\_\_\_\_\_\_\_\_\_ are in the element
6. Find out how many \_\_\_\_\_\_\_\_\_\_\_ are in the element
7. Label the protons and neutrons in the nucleus
8. Find out how many \_\_\_\_\_\_\_\_\_\_\_\_ are in the element
9. Fill in the energy levels until you have the correct number of electrons.

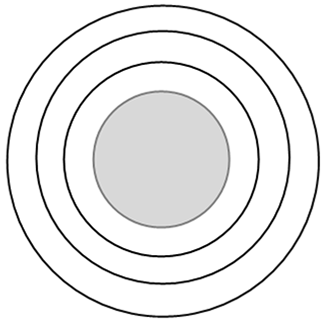
**Examples:**



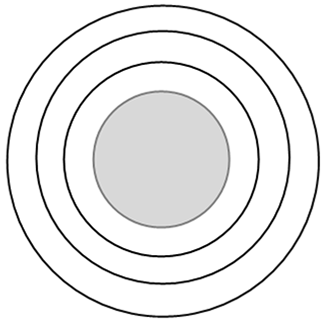
Element:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



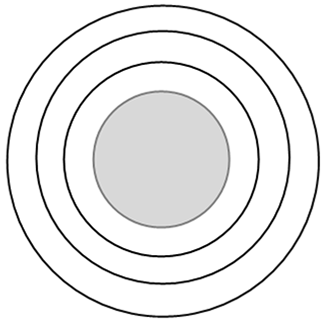
Element:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



Element:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



Element:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



Element:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_