

Bohr Me with Chocolate

Introduction

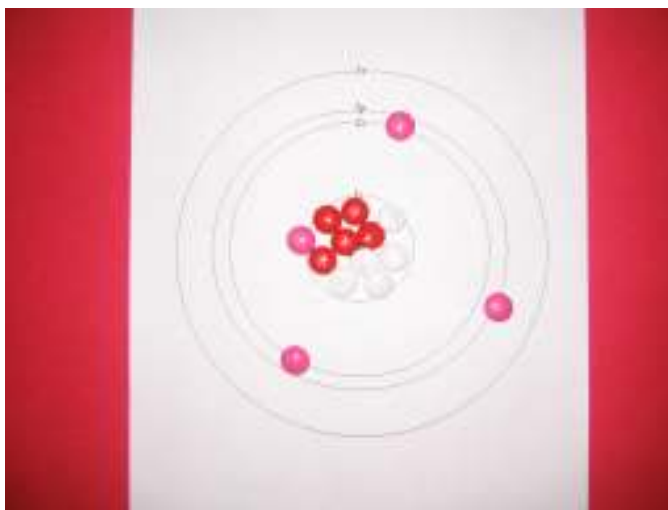
Elements are organized in the periodic table by their chemical properties. The atomic number of an element represents how many protons are in the nucleus, which in turn determines how many electrons are in the neutral atom. The number of electrons in an atom determines how the atom reacts chemically. The atom can easily be modeled with Reese's Pieces.

Material

Paper

Markers

Reese's Pieces



Assembly

Draw 2 concentric circles on a piece of paper to represent the nucleus and electron orbital of an atom. Use brown Reese's Pieces to represent neutrons, orange to represent protons and yellow to represent electrons.

To Do and Notice

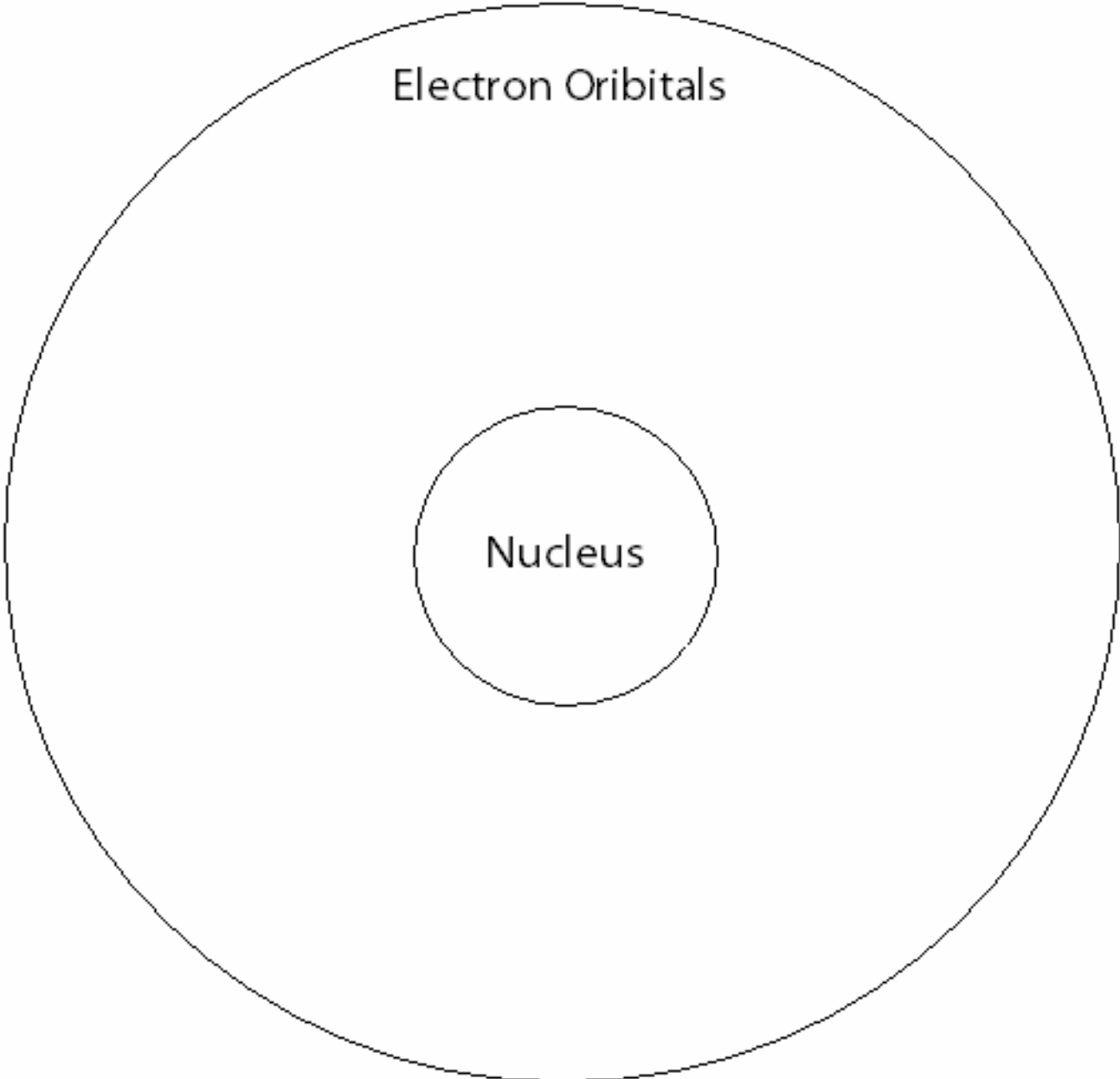
Build Reese's Pieces models of a selection of elements in the periodic table. Notice that from left to right, each element in the periodic table has one more proton in the nucleus than the preceding one.

All of the Reese's Pieces in the nucleus and the orbits added together make up the mass of the atom. Notice how the atoms become more massive as the atomic number increases.

Using the model, determine the number of protons, neutron and electrons in the following isotopes ^{12}C , ^{13}C , ^{14}C , and ^{14}N .

Electron Orbitals

Nucleus

A diagram illustrating the basic structure of an atom. It consists of two concentric circles. The inner circle is smaller and is labeled "Nucleus" in the center. The outer circle is significantly larger and is labeled "Electron Orbitals" at the top. The space between the two circles represents the electron cloud or orbitals.

