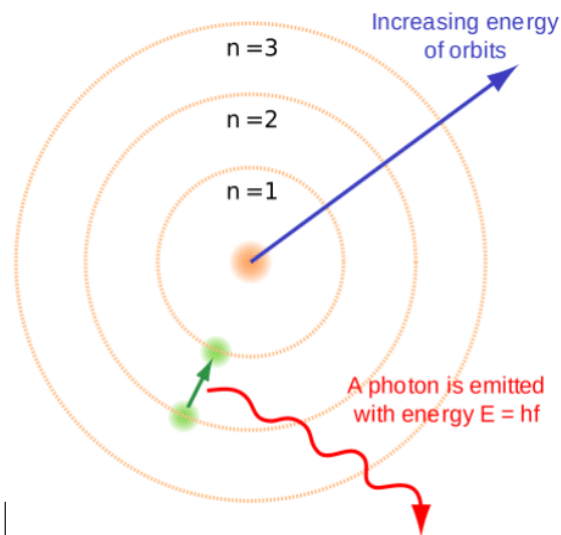


Bohr Model of the Atom

Neils Bohr proposed a model of the atom that adequately explained line spectra. Bohr argued that electrons must behave in particular ways:

- do not fall into the nucleus
- follow fixed orbits around the nucleus
- electrons can jump from orbit to orbit (like stairs)
- energy must be added to an electron to get it to jump to an orbit that is further from the nucleus (heat, electricity, or light energy) - *outwards transition*
- electrons prefer to be close to the nucleus as possible (lowest energy, called the ground state)
- when an electron (that has been excited) falls back to the nucleus it must give of the energy - *inwards transition*
- when an electron release the energy back it must be in the form of light



- the colour of light will depend on the energy difference between orbits (see note on types of Electromagnetic Radiation for more detail)
- Bohr further concluded that the number of electrons allowed in an orbit follows specific patterns (see note on Bohr Rutherford Diagrams)