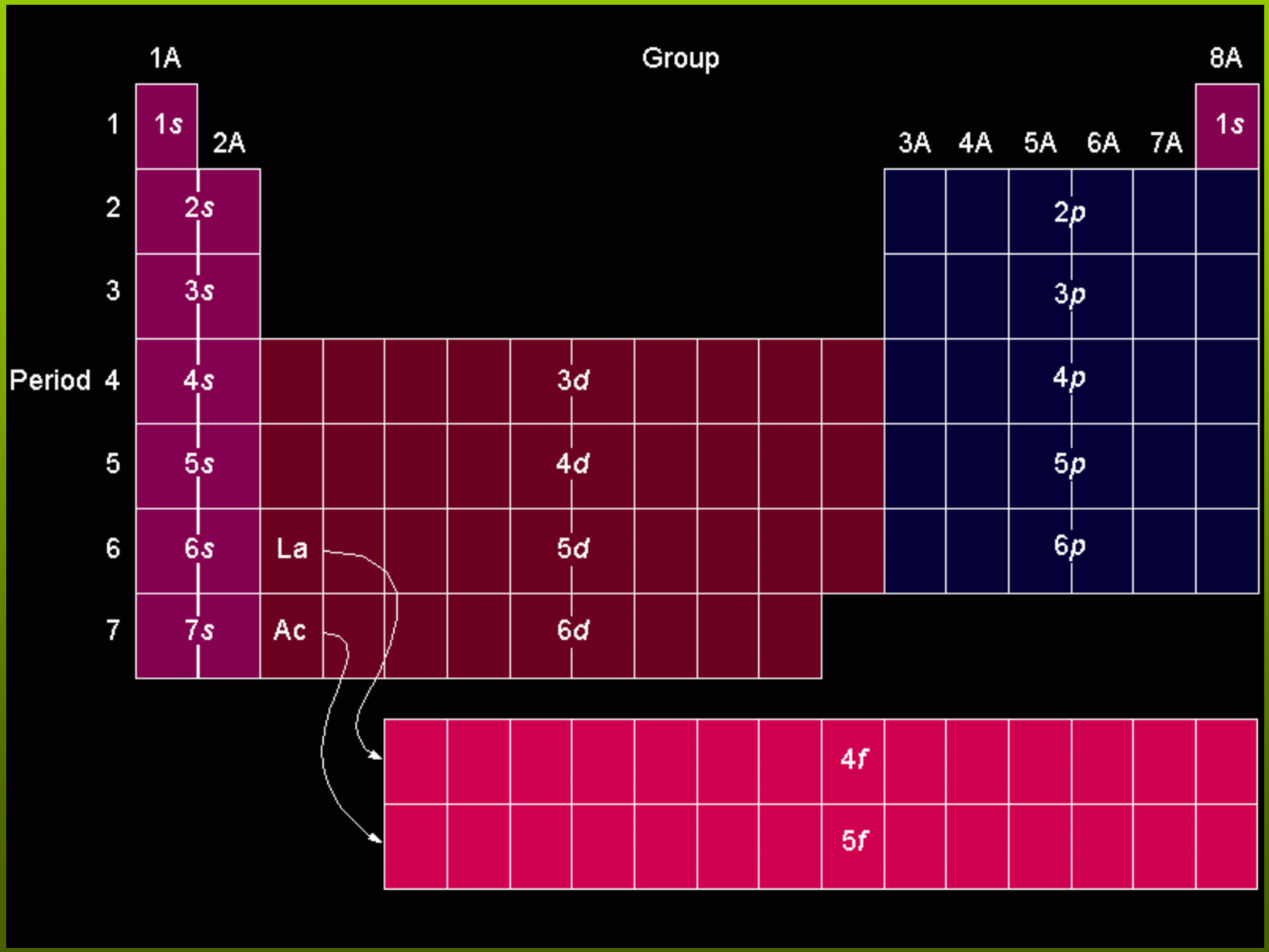
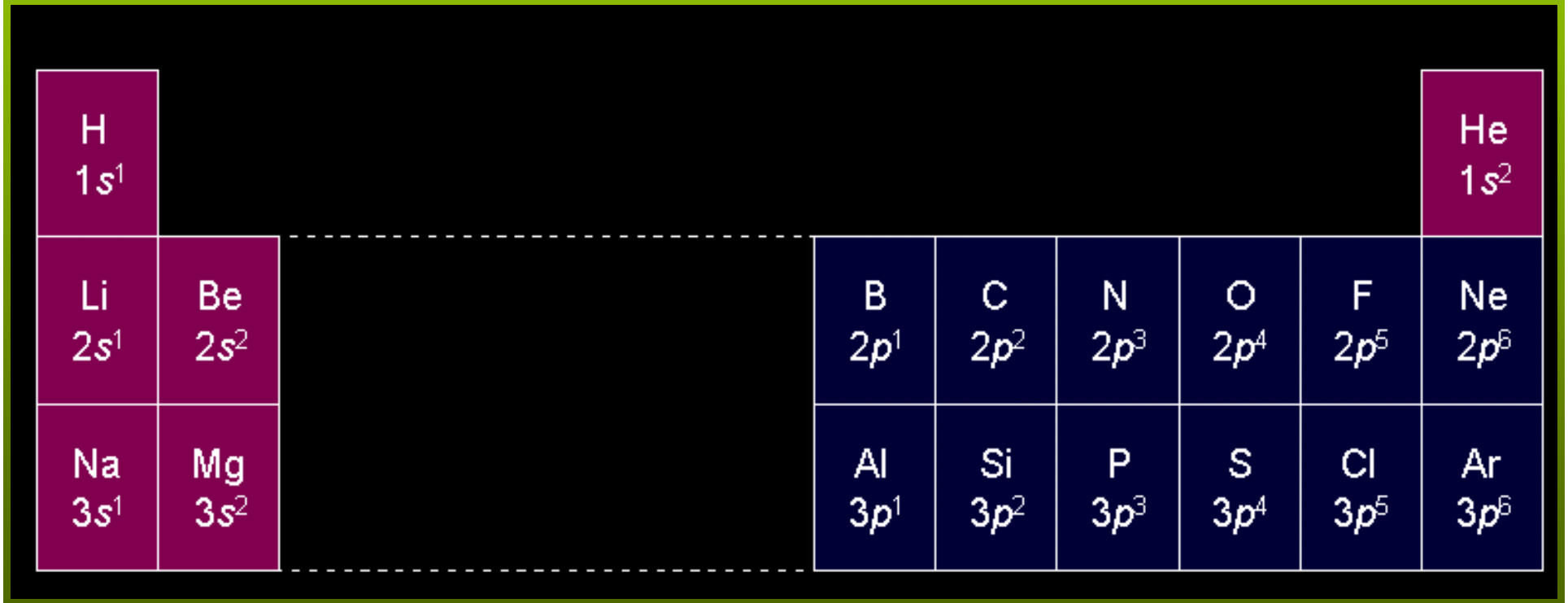
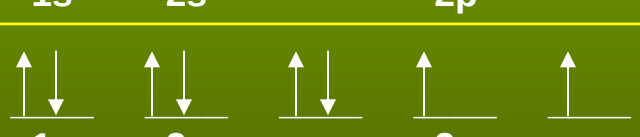
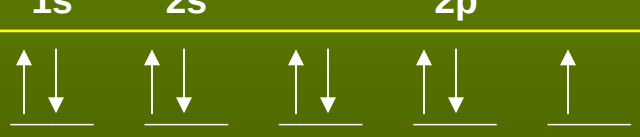
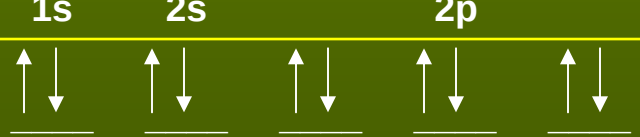
Orbital filling table



Electron configuration of the elements of the first three series

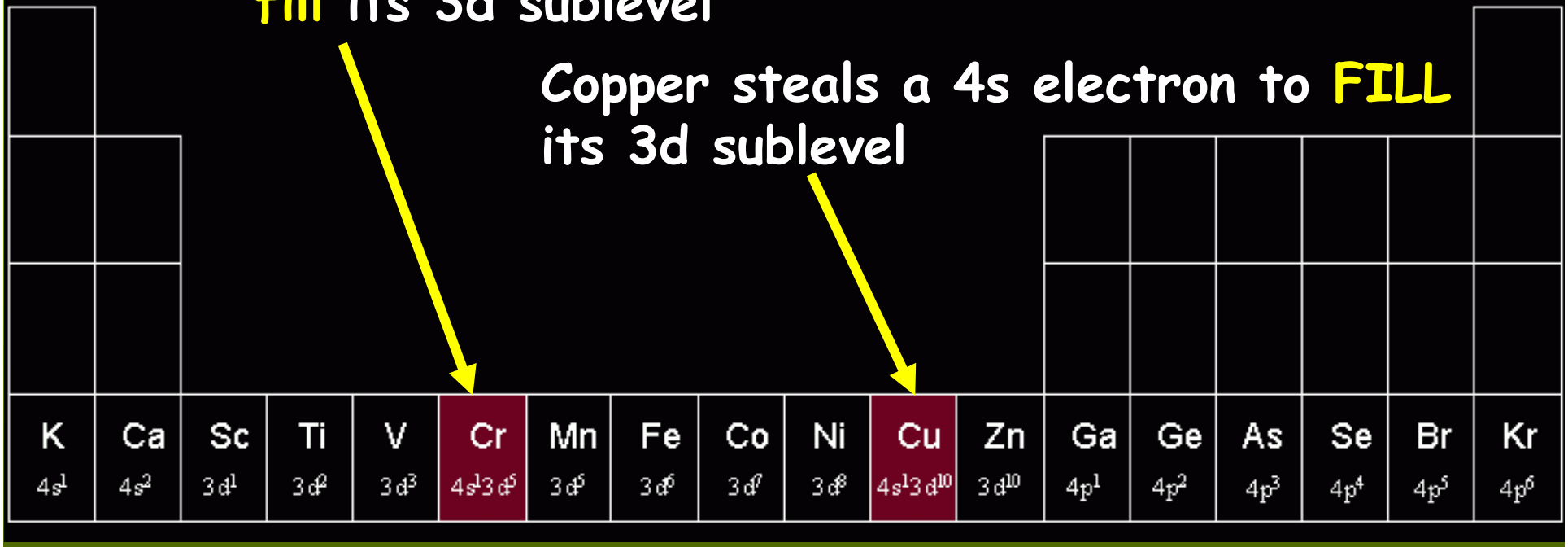


Element	Electron config notation	Orbital diagram notation	Noble gas Shortcut
Lithium	$1s^2 2s^1$		$[He]2s^1$
Beryllium	$1s^2 2s^2$		$[He]2s^2$
Boron	$1s^2 2s^2 p^1$		$[He]2s^2 p^1$
Carbon	$1s^2 2s^2 p^2$		$[He]2s^2 p^2$
Nitrogen	$1s^2 2s^2 p^3$		$[He]2s^2 p^3$
Oxygen	$1s^2 2s^2 p^4$		$[He]2s^2 p^4$
Fluorine	$1s^2 2s^2 p^5$		$[He]2s^2 p^5$
Neon	$1s^2 2s^2 p^6$		$[He]2s^2 p^6$

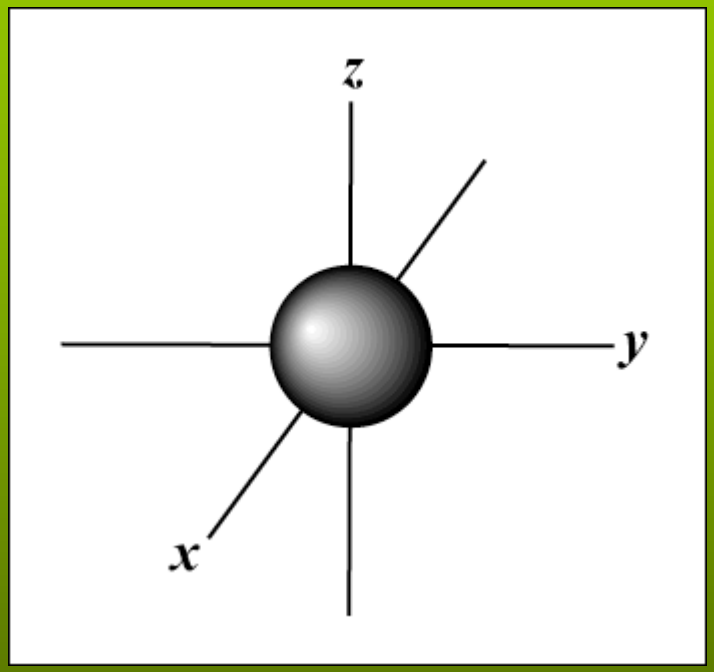
Irregular confirmations of Cr and Cu

Chromium steals a 4s electron to **half** fill its 3d sublevel

Copper steals a 4s electron to **FILL** its 3d sublevel



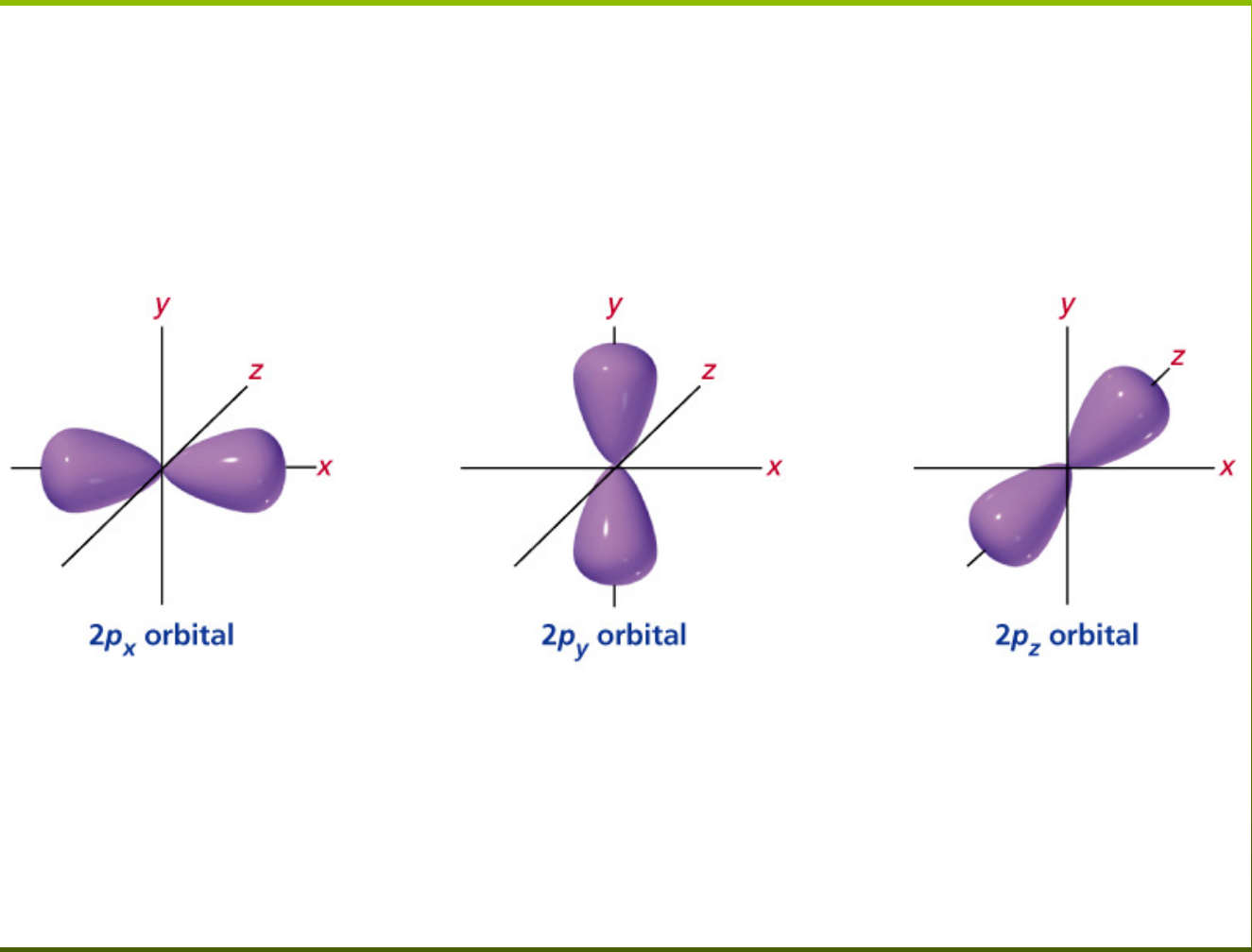
The *s* orbital has a spherical shape centered around the origin of the three axes in space.

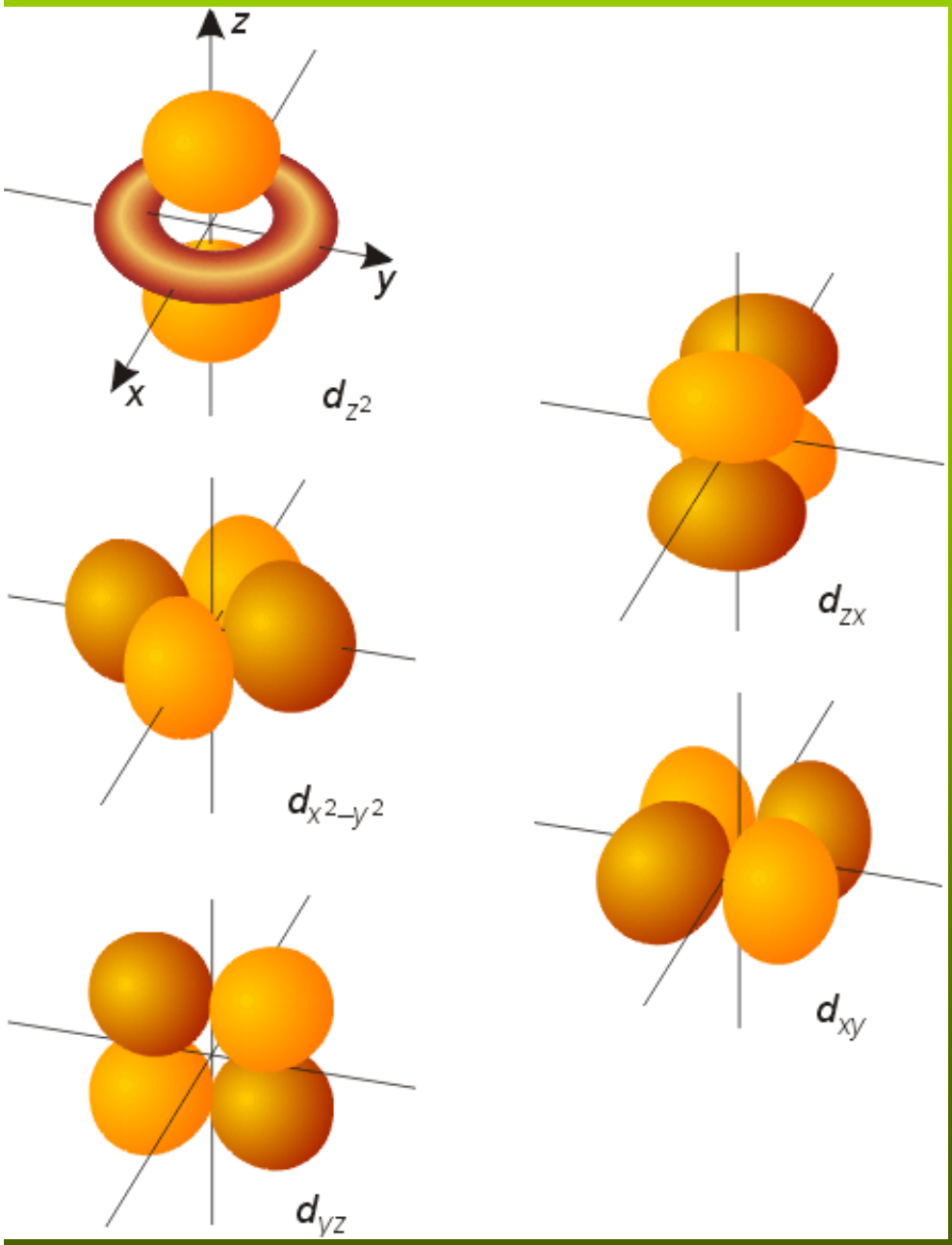


s orbital shape

P orbital shape

There are three dumbbell-shaped *p* orbitals in each energy level above n = 1, each assigned to its own axis (x, y and z) in space.





Things get a bit more complicated with the five *d* orbitals that are found in the *d* sublevels beginning with n = 3. To remember the shapes, think of:

"double dumbells"

...and a "dumbell with a donut"!

***d* orbital shapes**

Shape of f orbitals