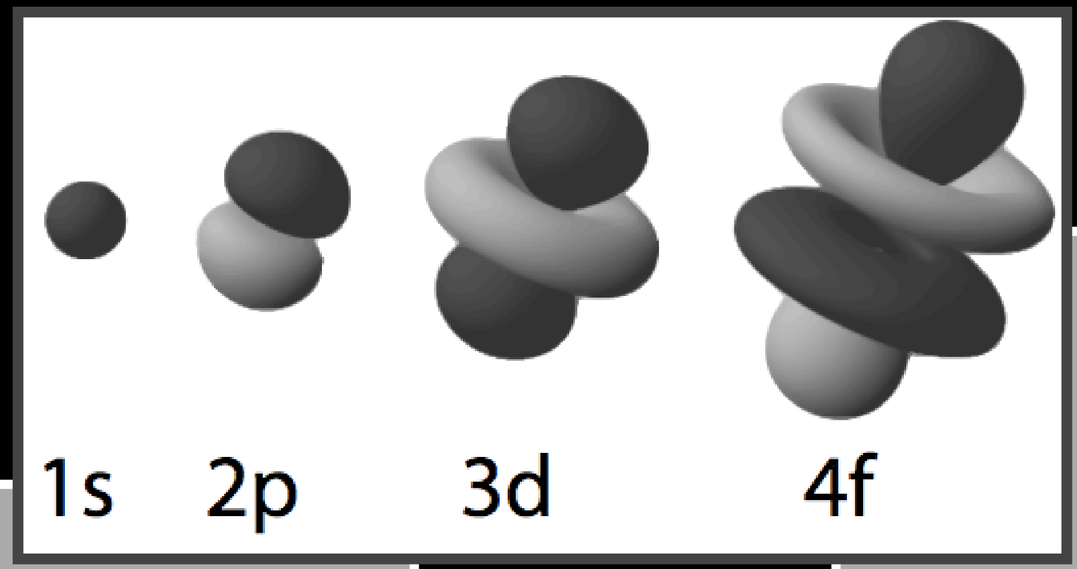
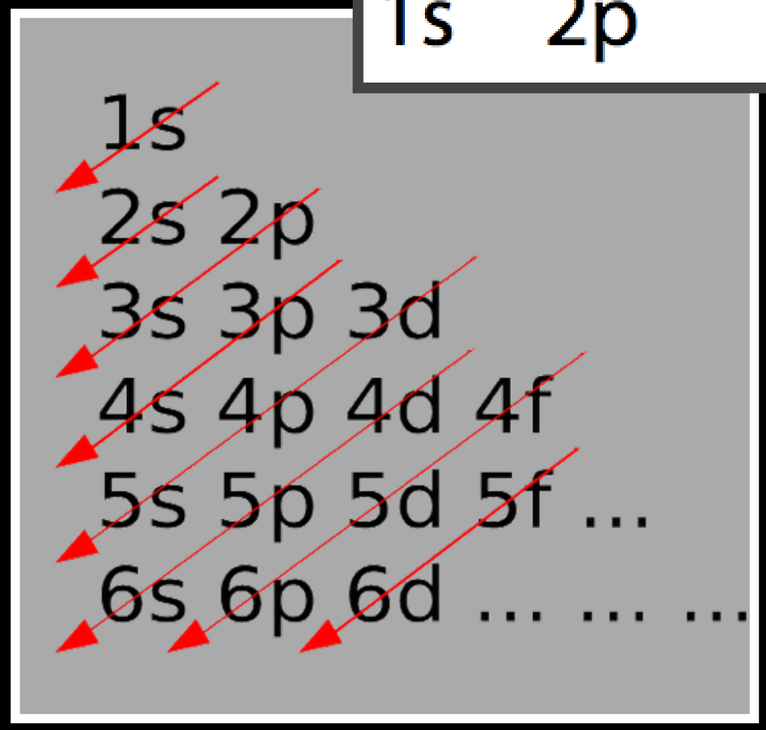
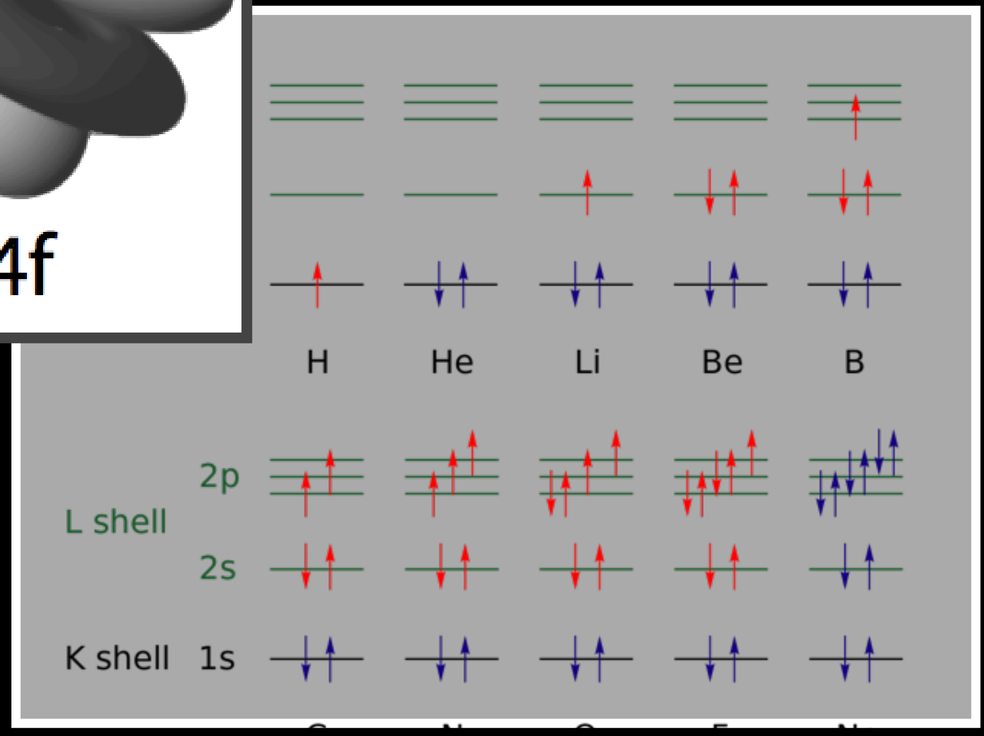
Electron Configuration







Chemistry Essentials - 005

Electron Configuration

distribution

Electrons

different

Atoms or Ions

Ionization Energy

similar

quantified

Coulomb's Law

Multielectron ions or atoms

Shells, Subshells and Orbitals

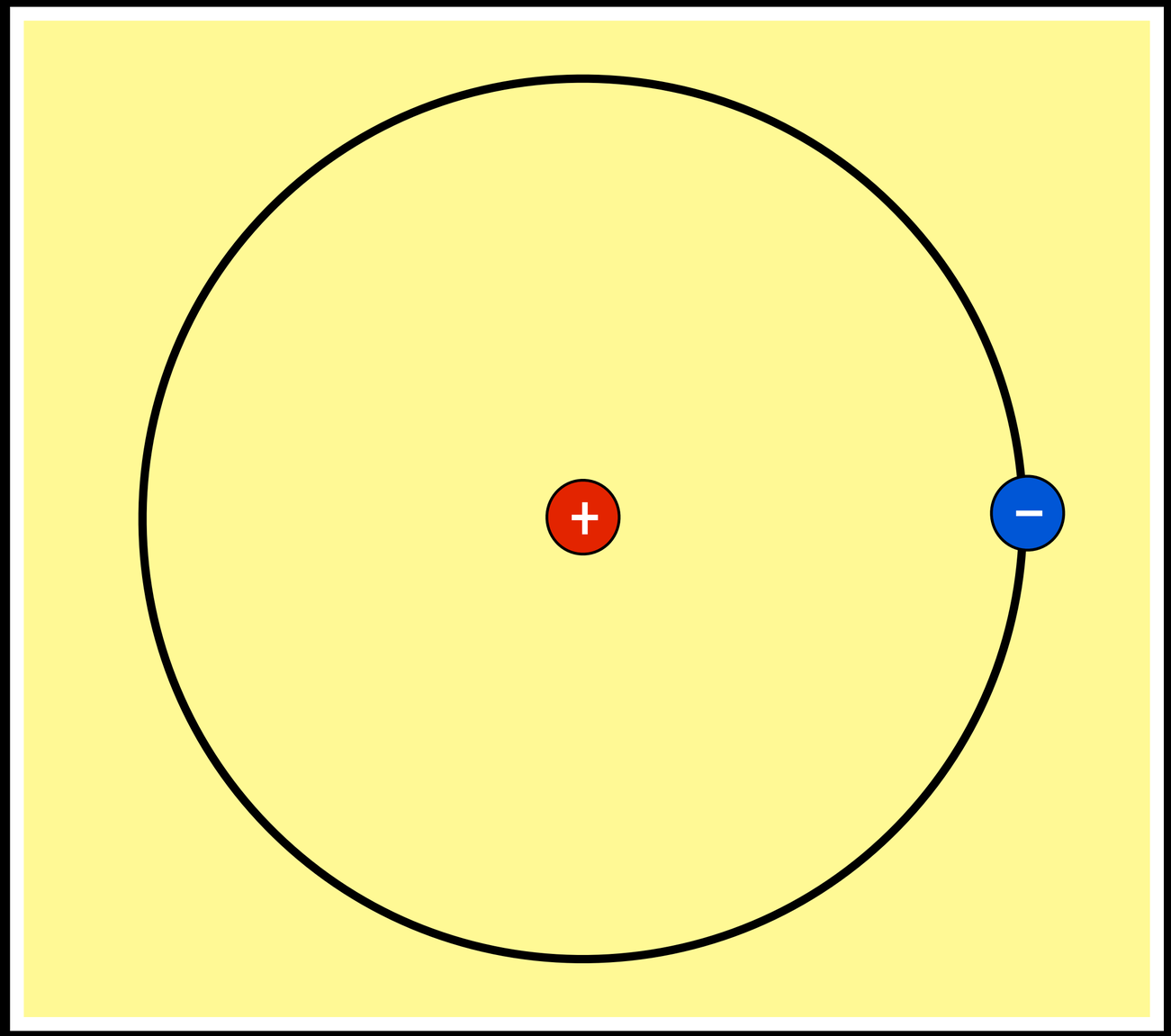
Valence Electrons

shield

Core Electrons

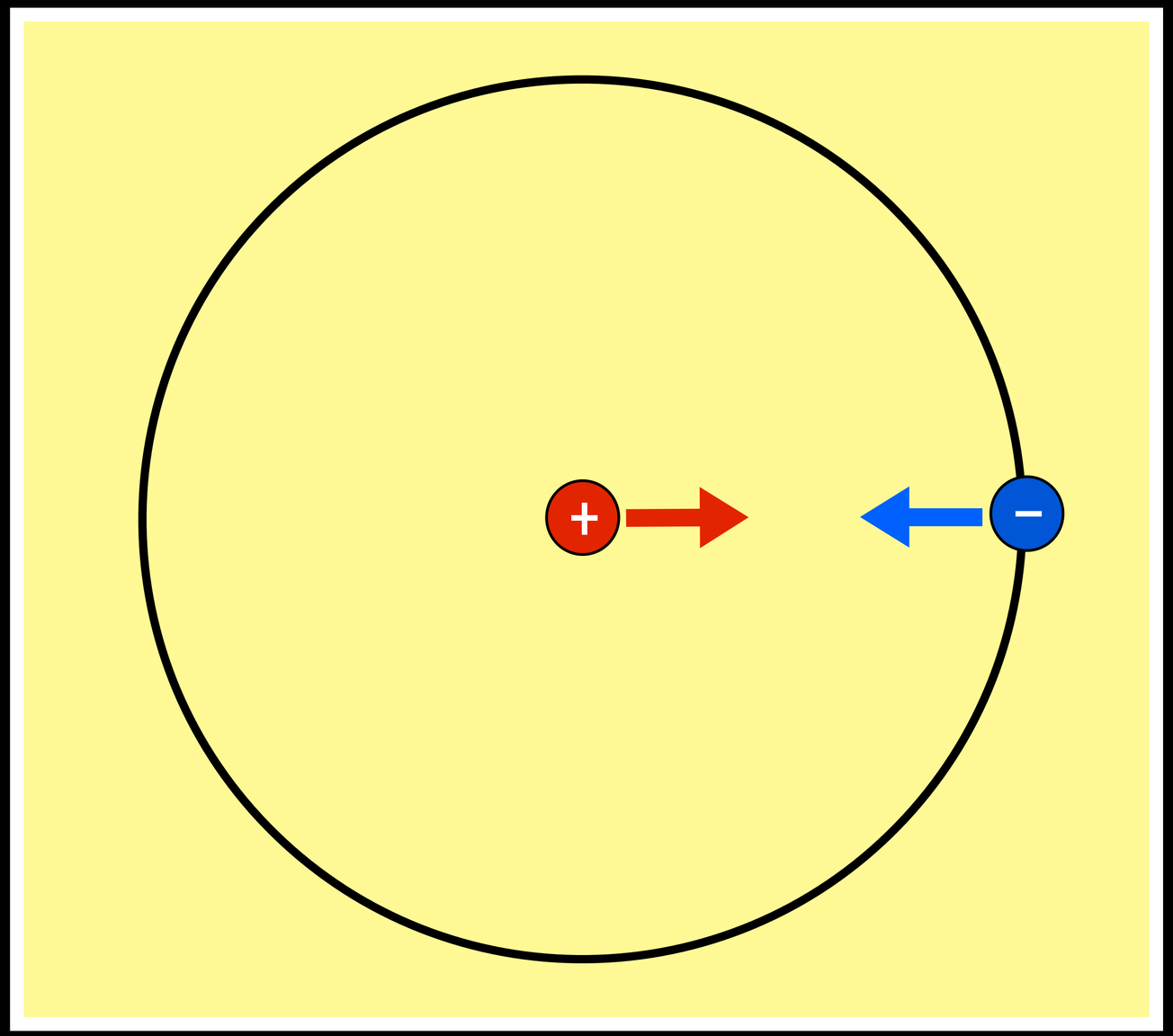
Nuleus

Electron Configuration



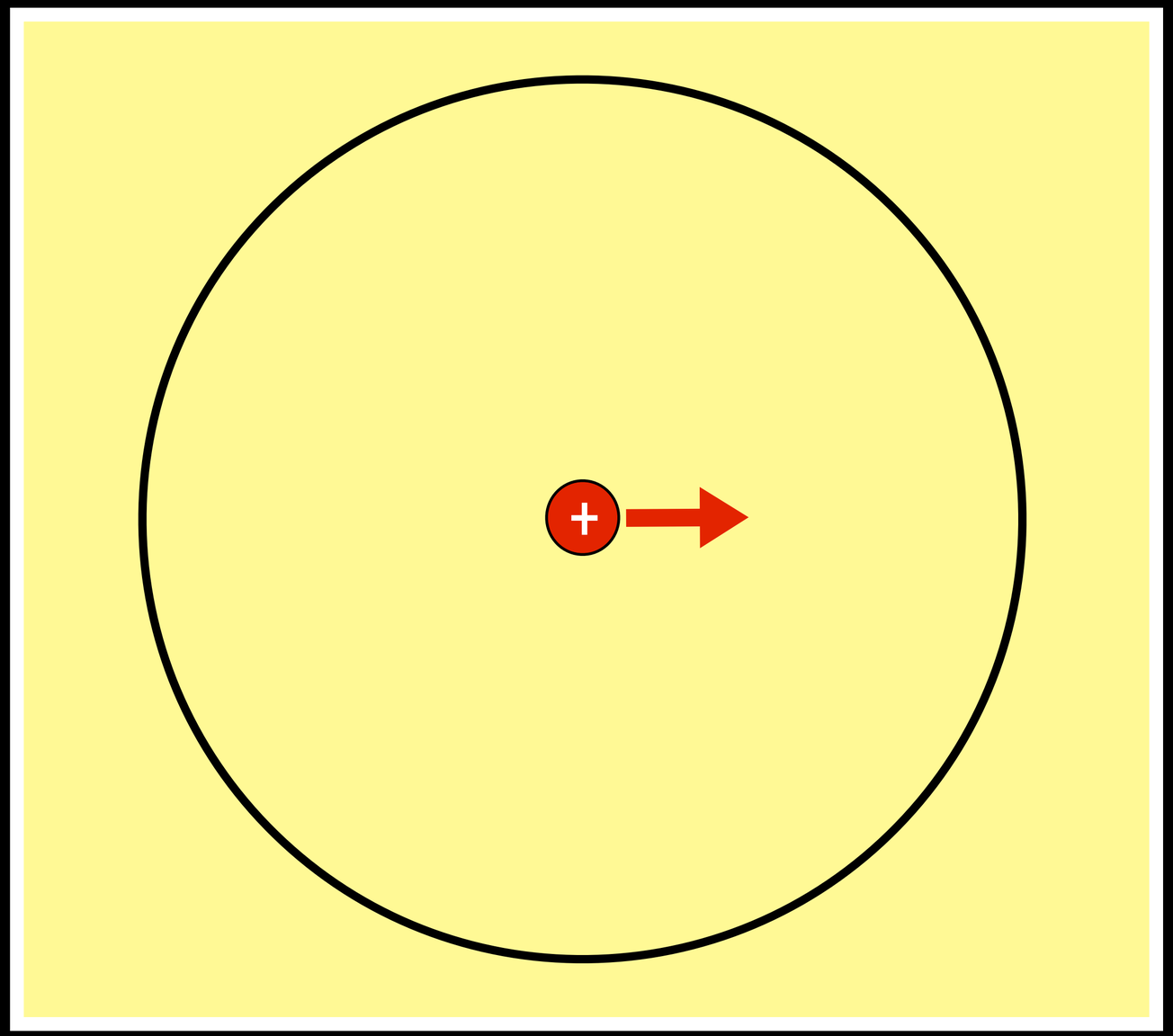
Coulomb's Law

$$F = k \frac{Q_1 Q_2}{r^2}$$



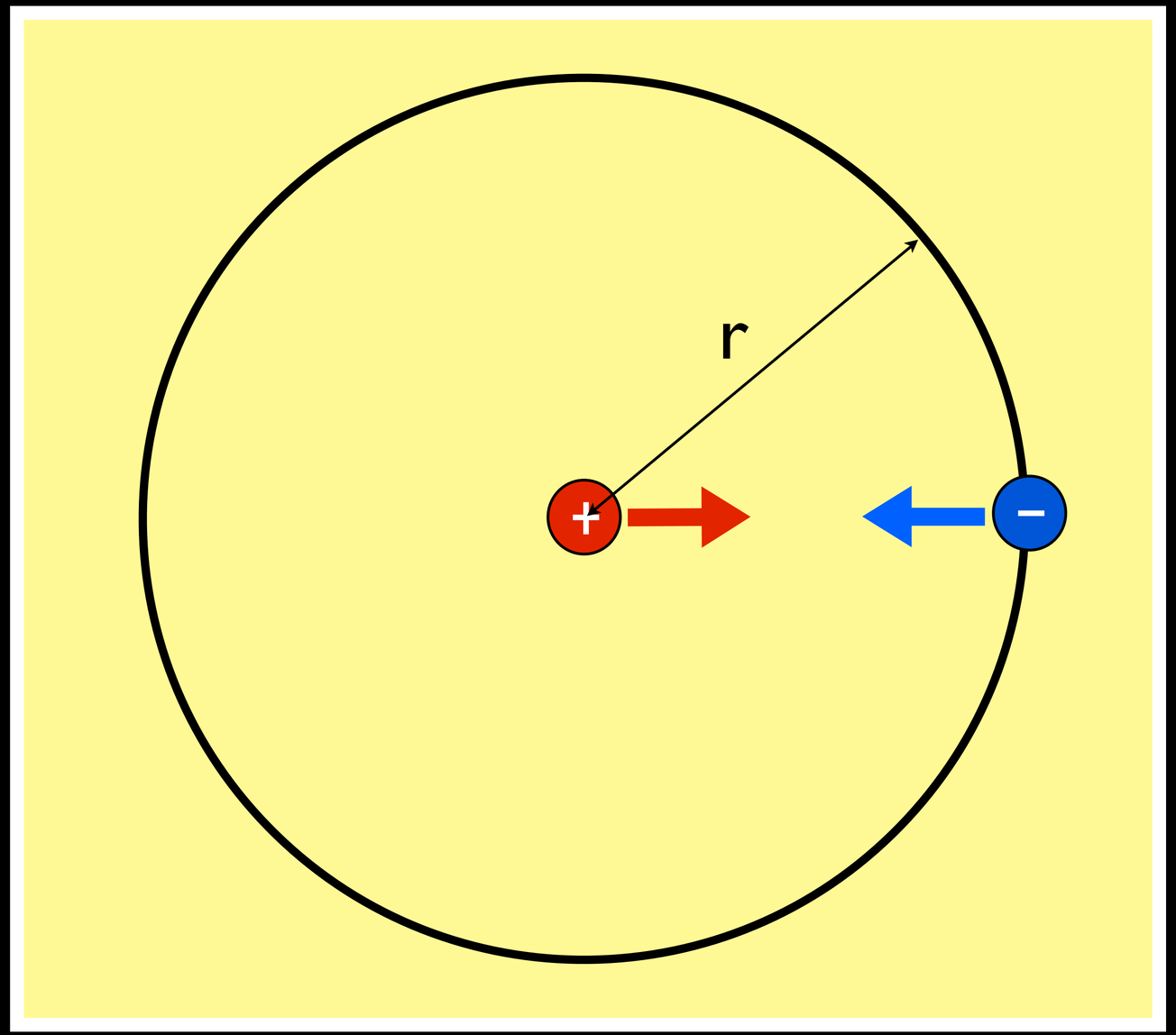
Ionization Energy

$$E = k \frac{Q_1 Q_2}{r}$$



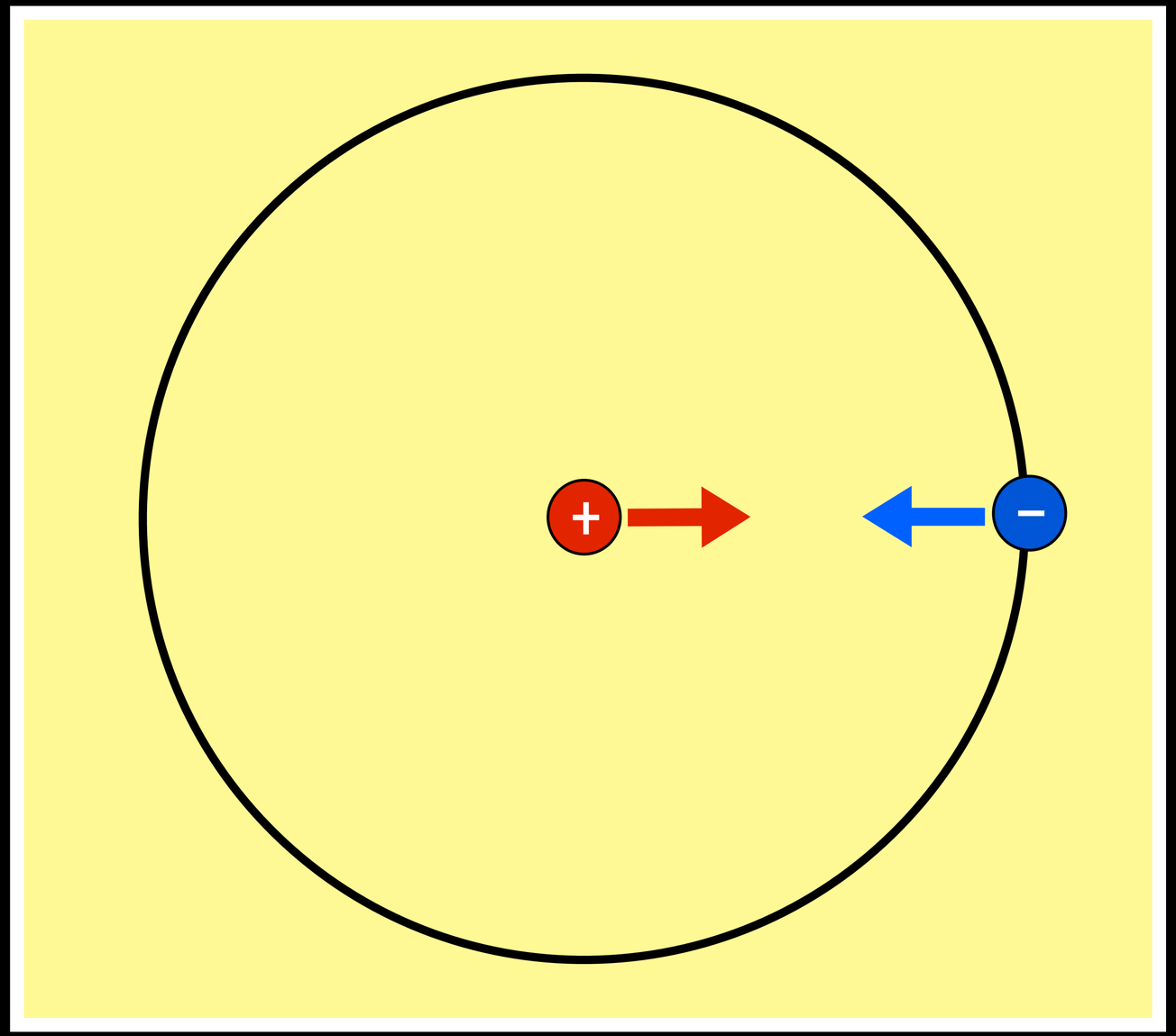
Ionization Energy

$$E = k \frac{Q_1 Q_2}{r}$$



Ionization Energy

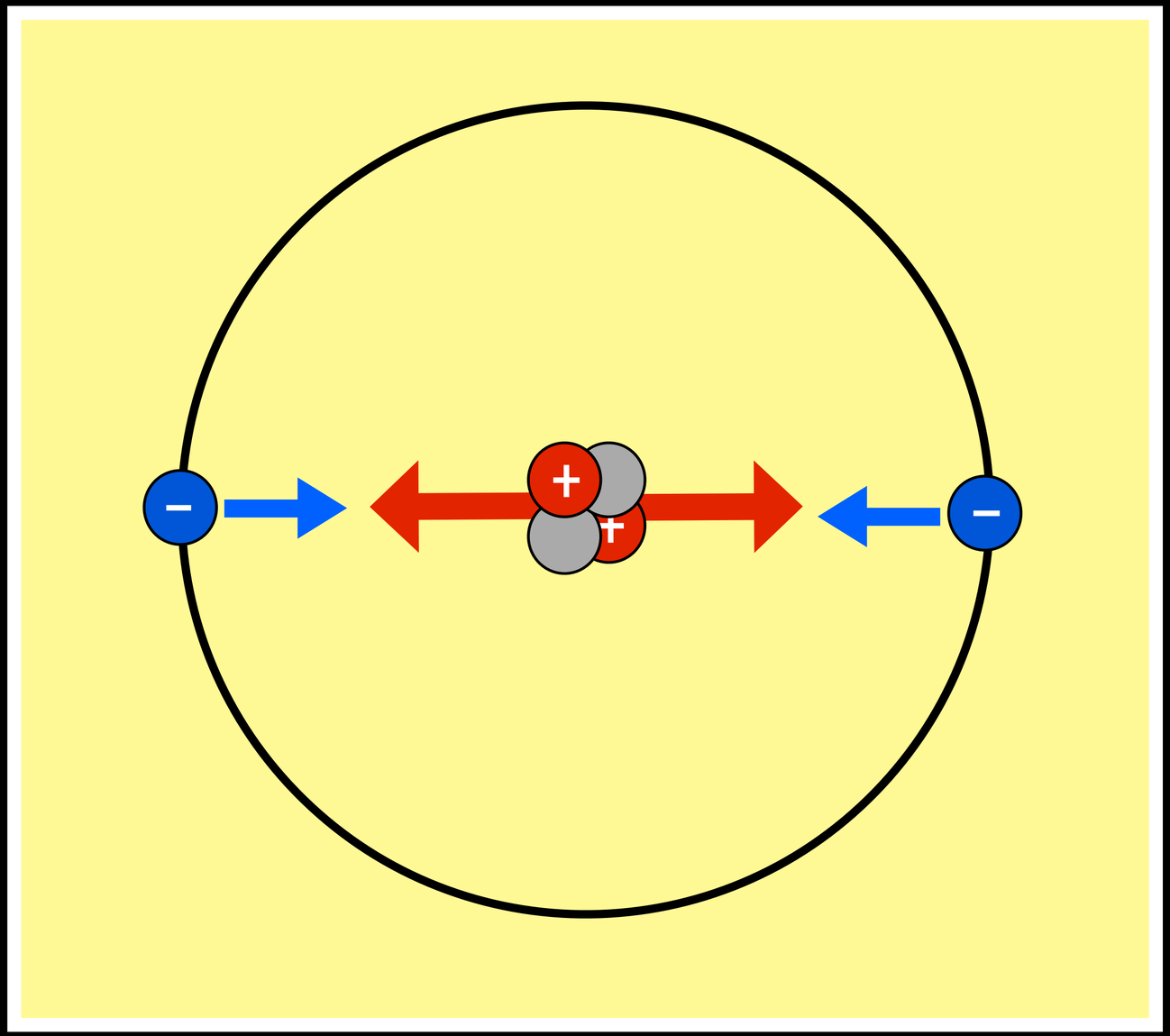
$$E = k \frac{Q_1 Q_2}{r}$$



Which would have a higher first ionization energy?

Ionization Energy

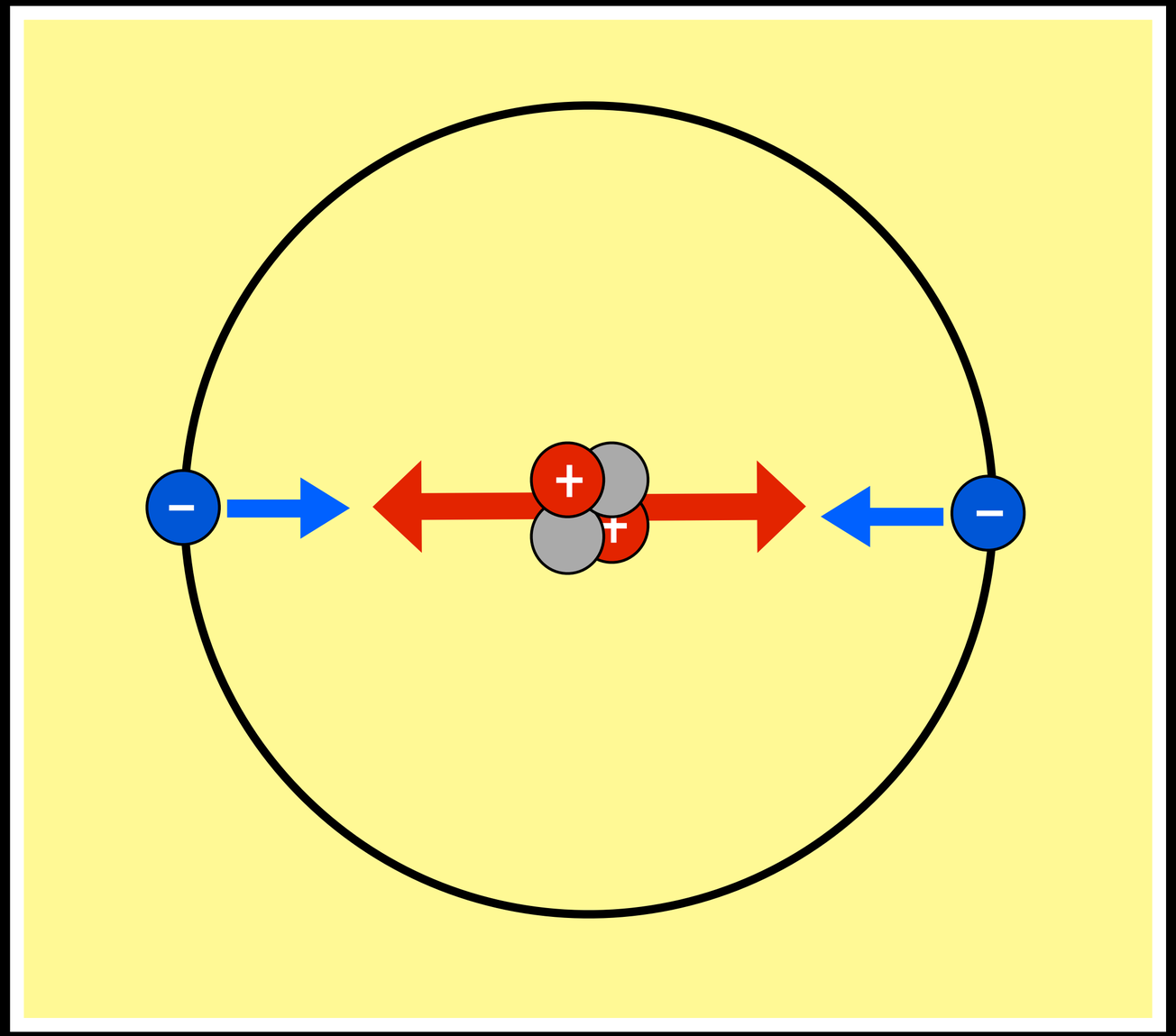
$$E = k \frac{Q_1 Q_2}{r}$$



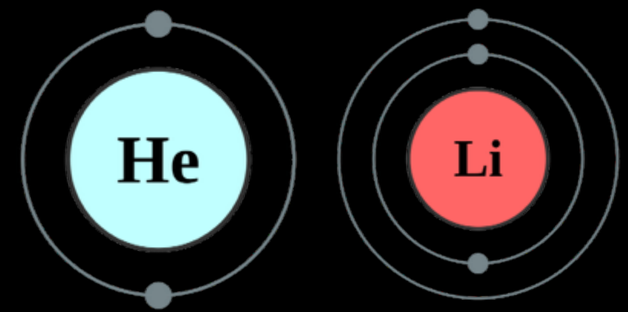
Which would have a higher first ionization energy?

Ionization Energy

$$E = k \frac{Q_1 Q_2}{r}$$



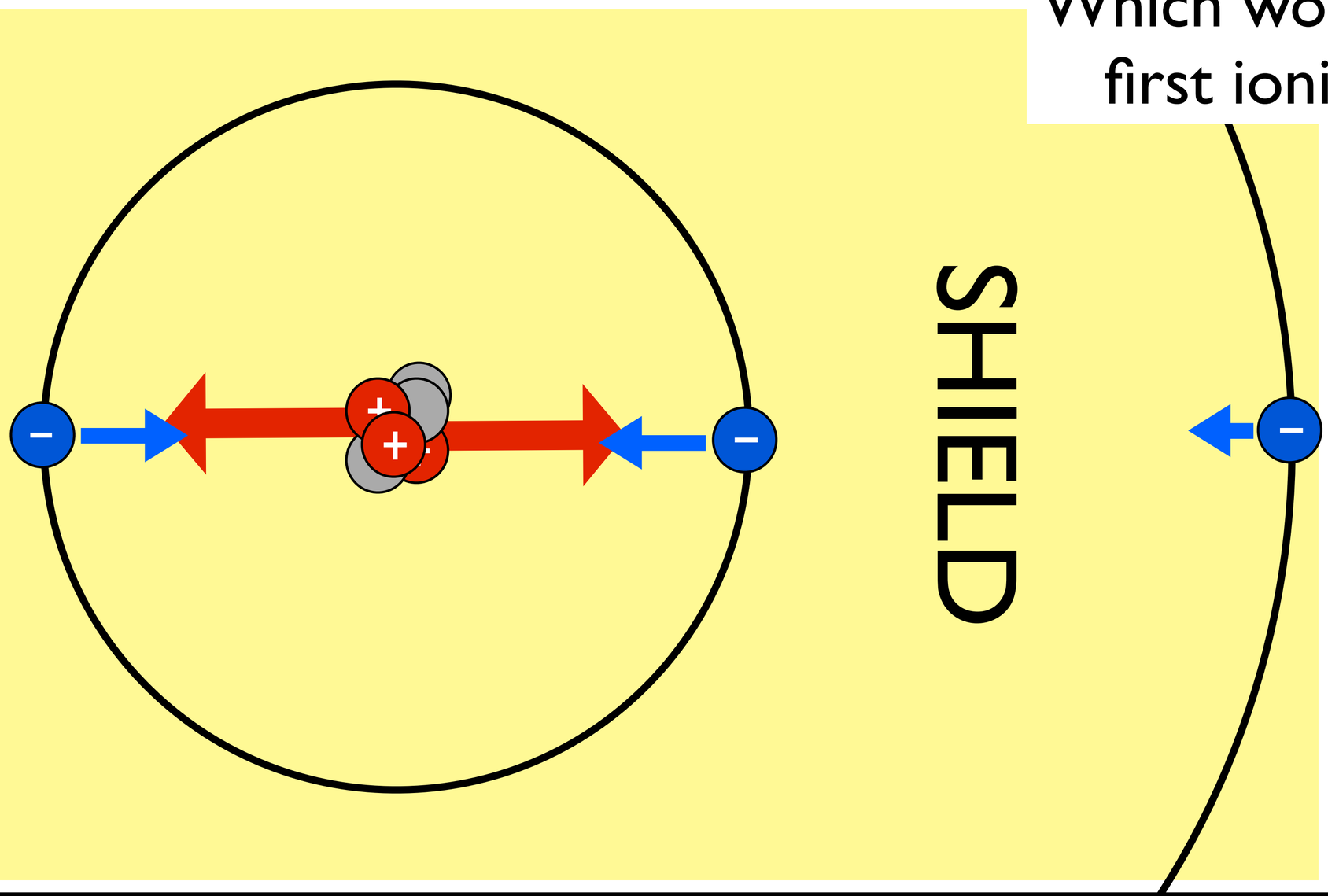
Which would have a higher first ionization energy?

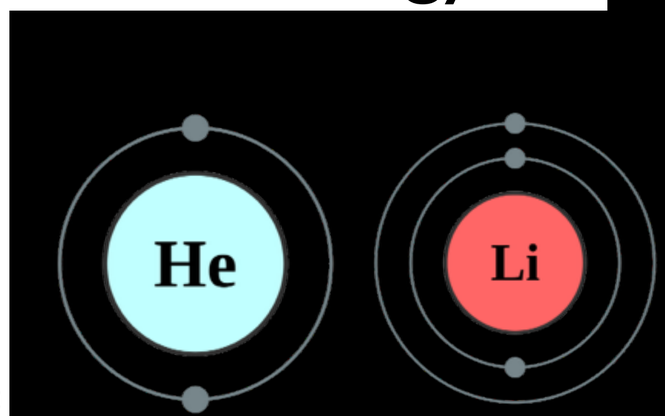


Ionization Energy

$$E = k \frac{Q_1 Q_2}{r}$$

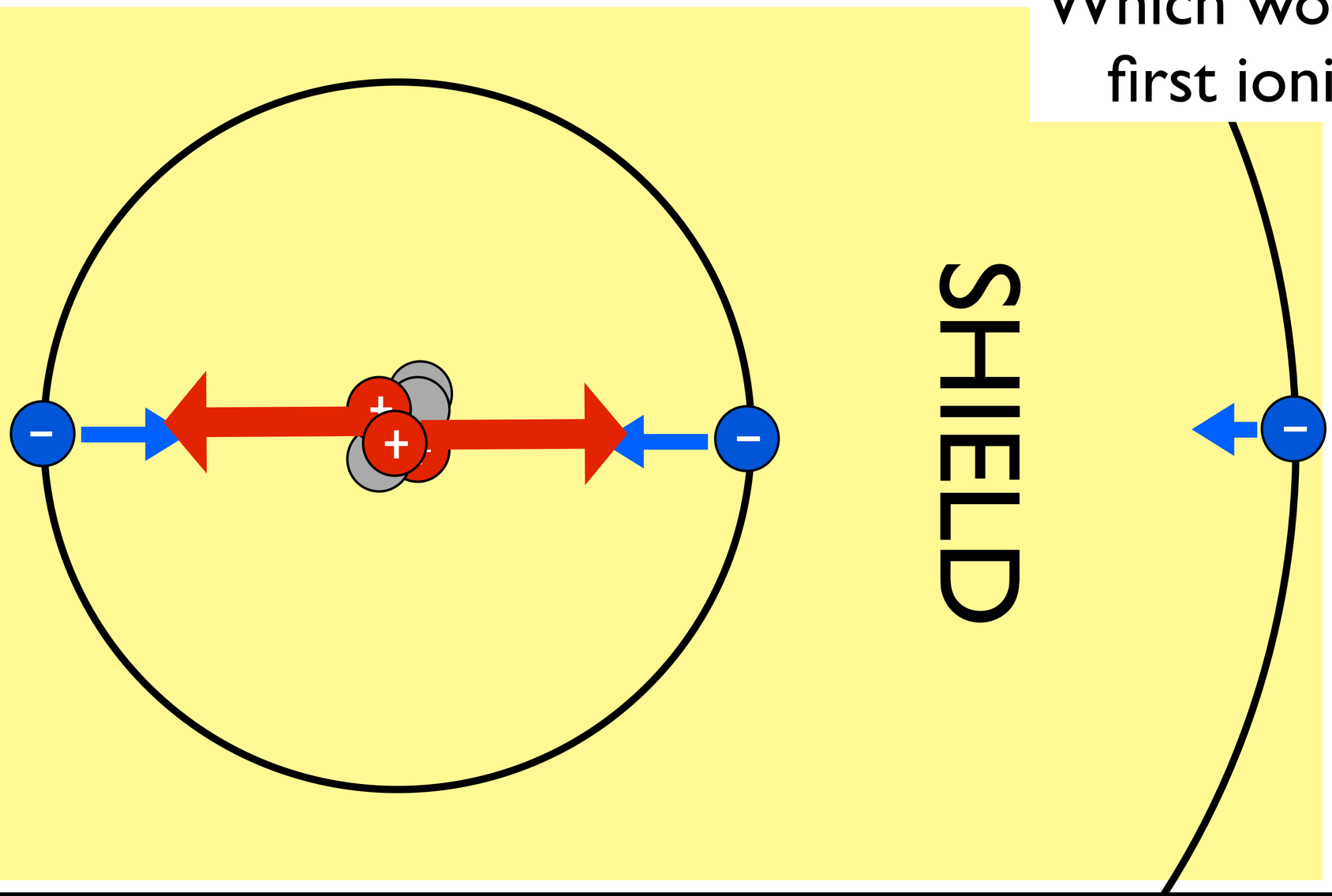
Which would have a higher first ionization energy?



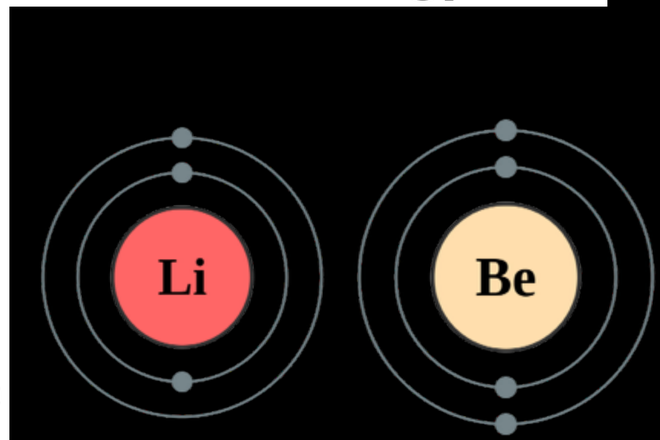


Ionization Energy

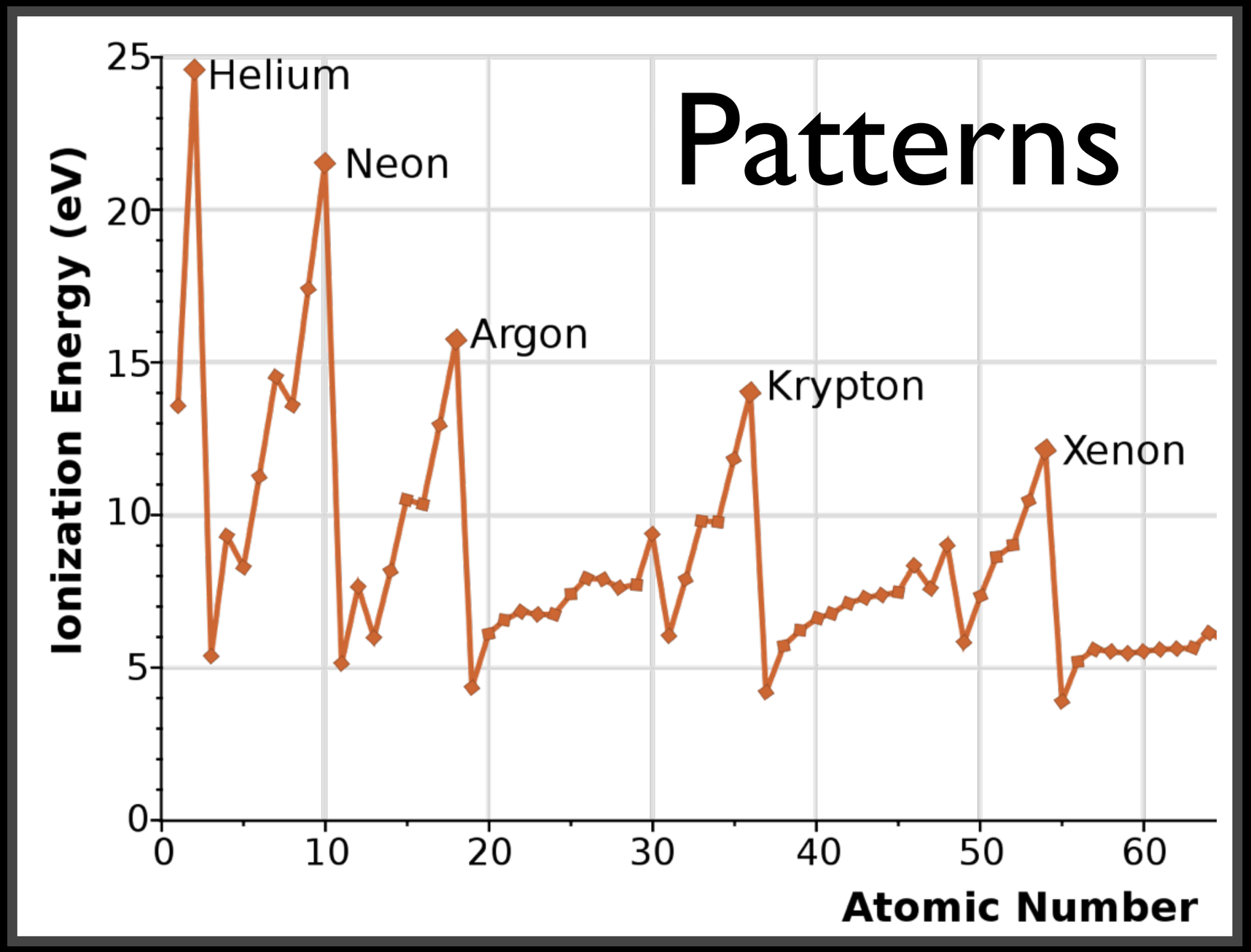
$$E = k \frac{Q_1 Q_2}{r}$$



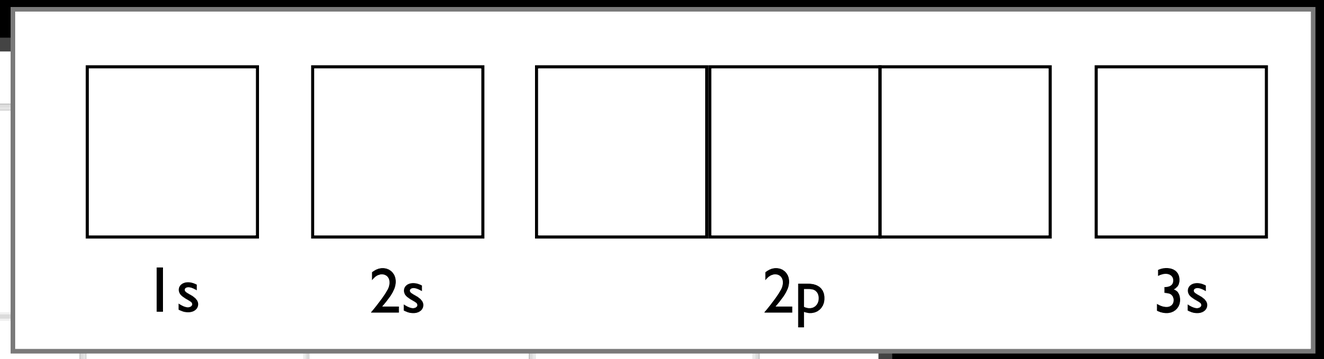
Which would have a higher first ionization energy?



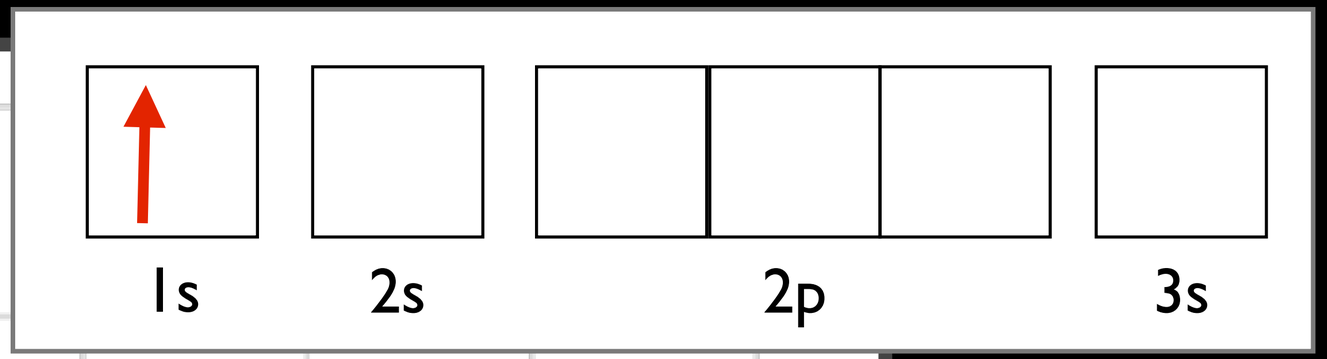
First Ionization Energy



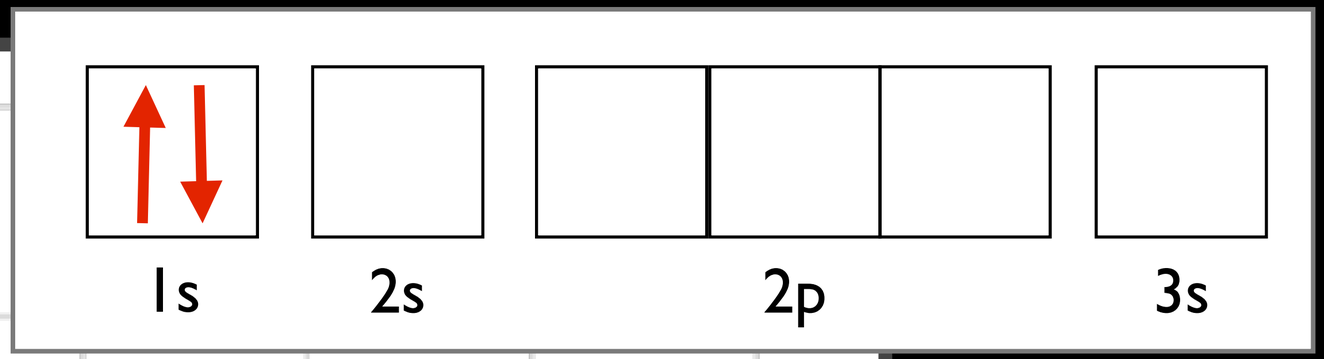
Shells and Orbitals



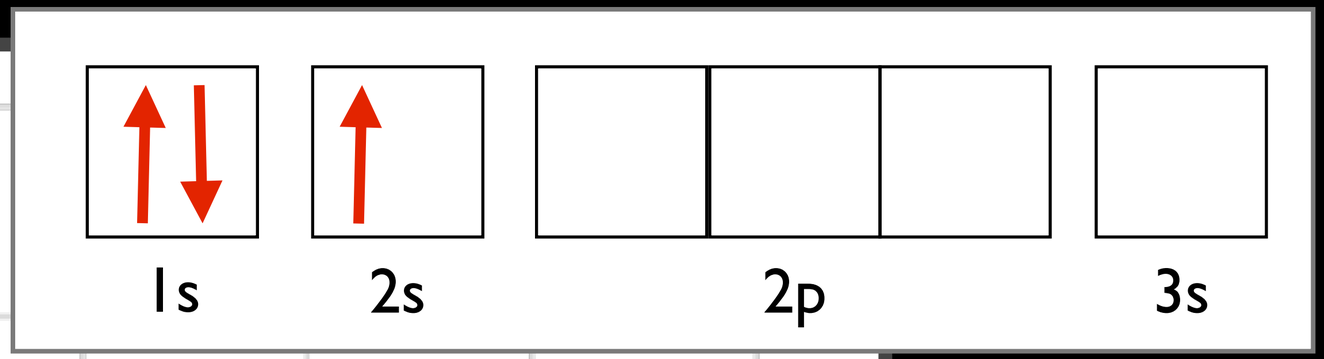
Shells and Orbitals



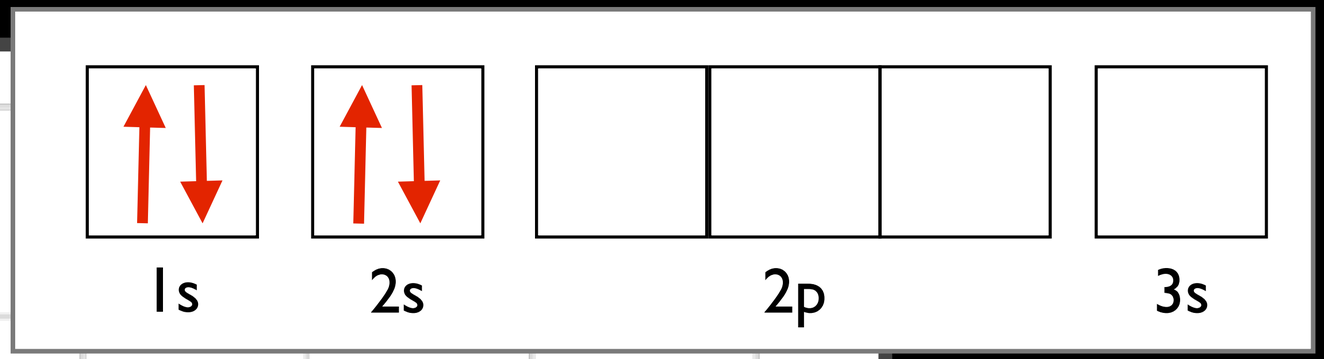
Shells and Orbitals



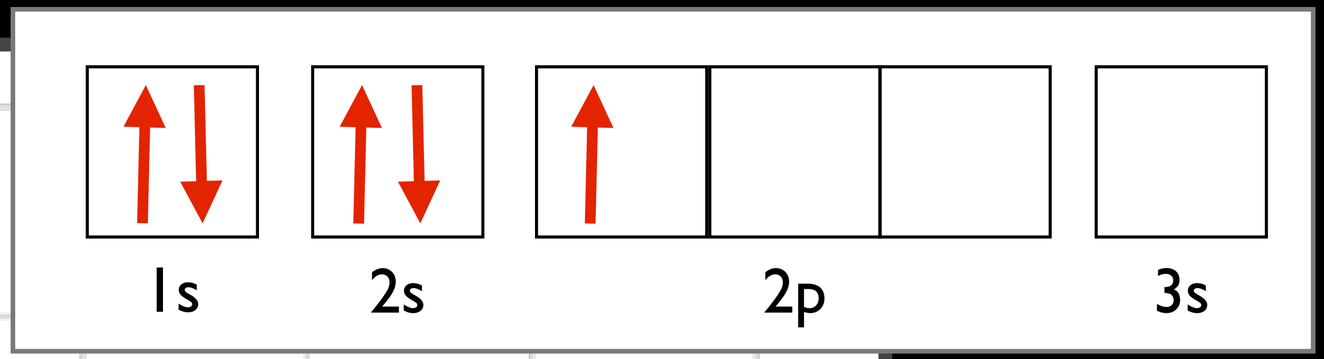
Shells and Orbitals



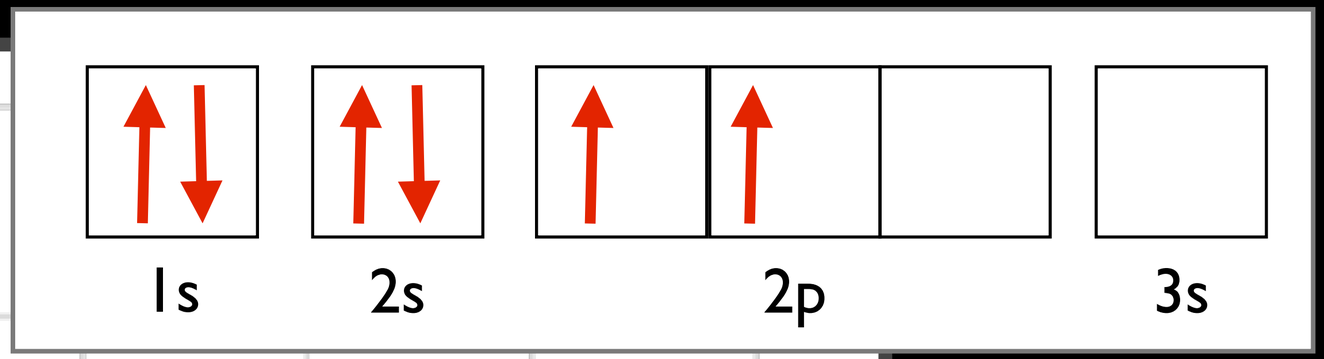
Shells and Orbitals



Shells and Orbitals



Shells and Orbitals



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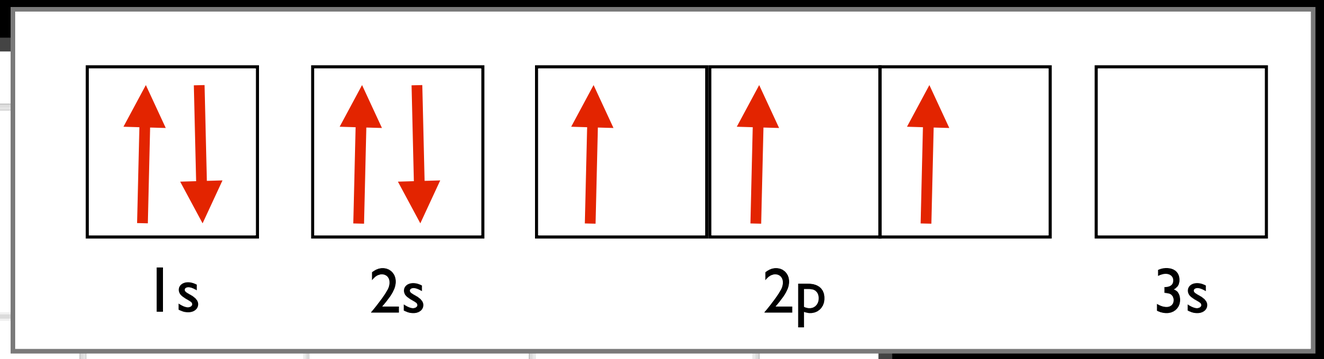

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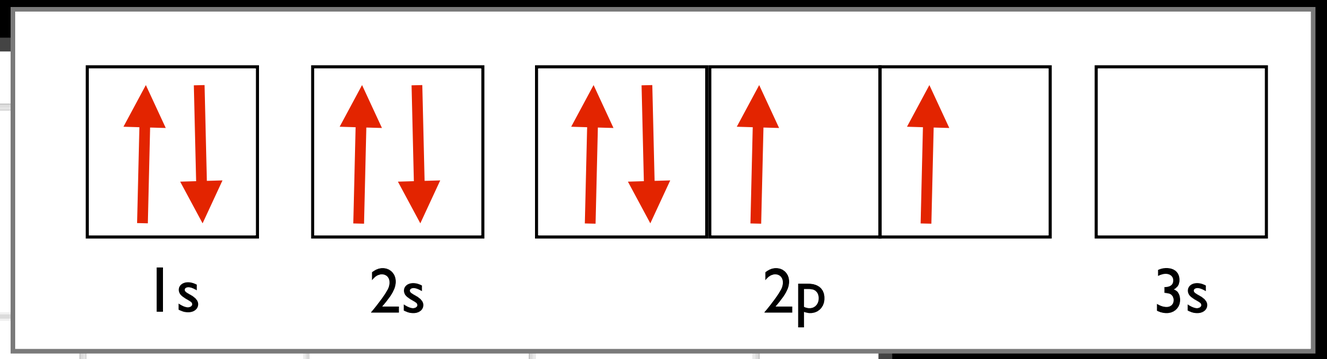
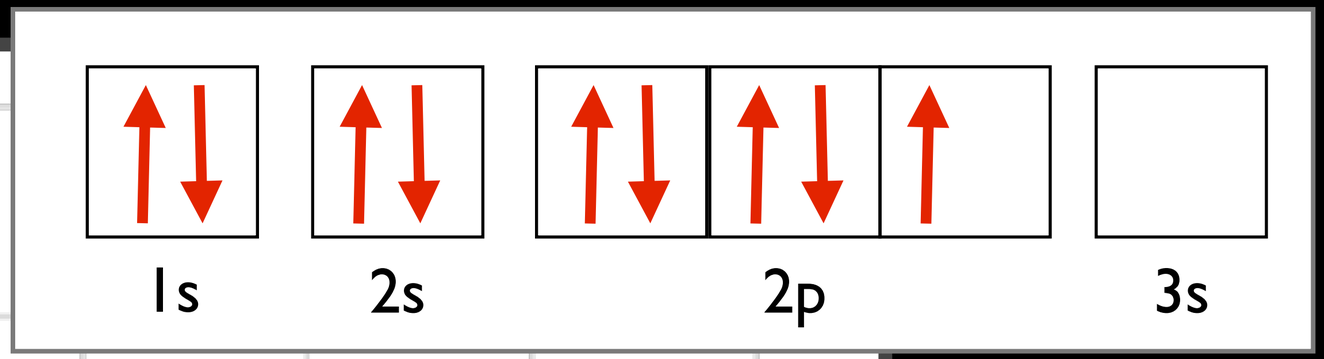
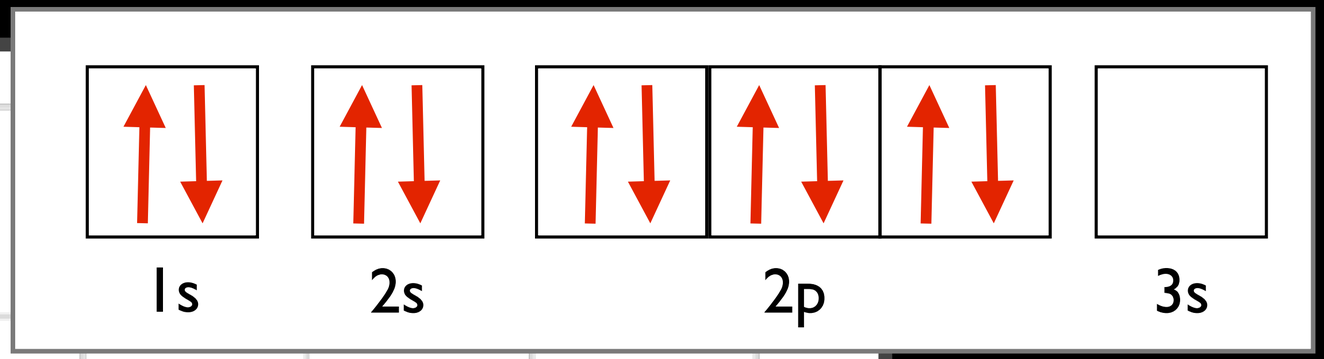


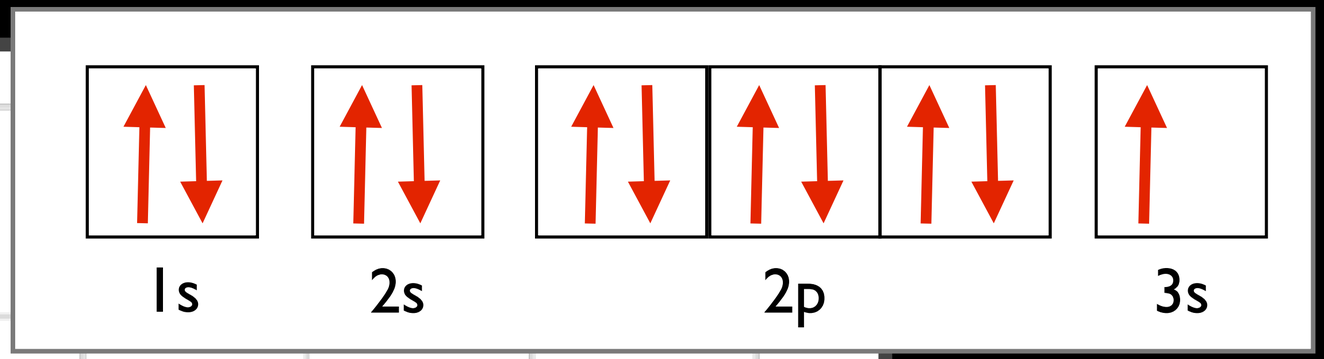
Shells and Orbitals



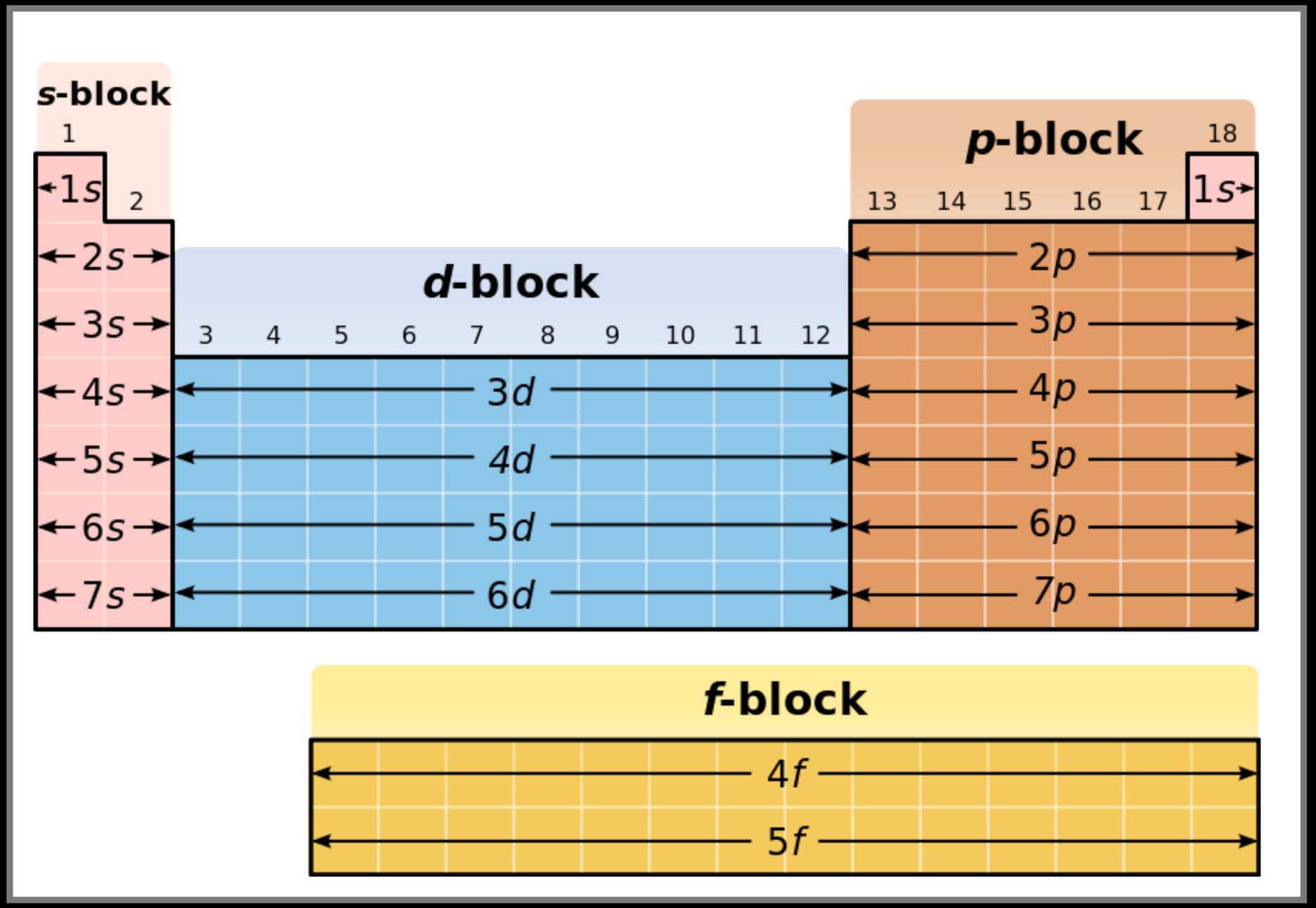
Shells and Orbitals



Shells and Orbitals



Periodicity



Electron Configuration

1s

2s 2

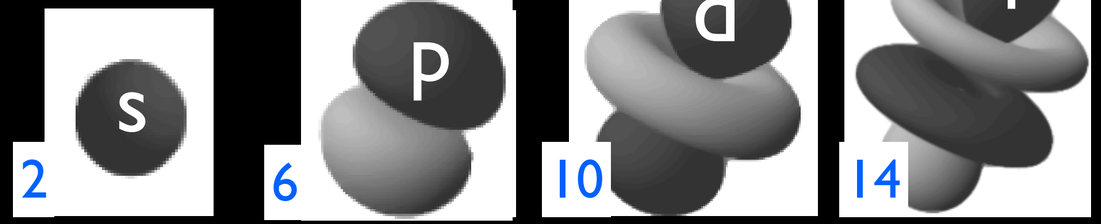
3s

4s

5s

6s

7s



Electron Configuration

1s

2s 2p

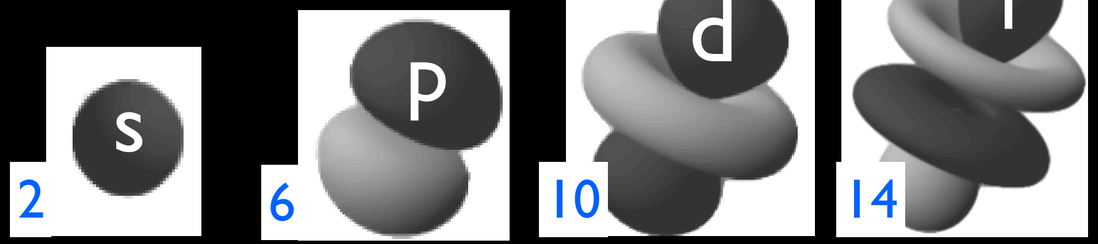
3s 3p 3

4s 4p

5s 5p

6s 6p

7s 7p



Electron Configuration

1s

2s 2p

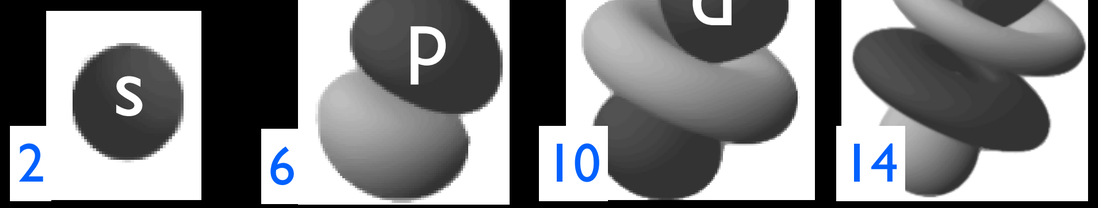
3s 3p 3d

4s 4p 4d 4

5s 5p 5d

6s 6p 6d

7s 7p



Electron Configuration

1s

2s 2p

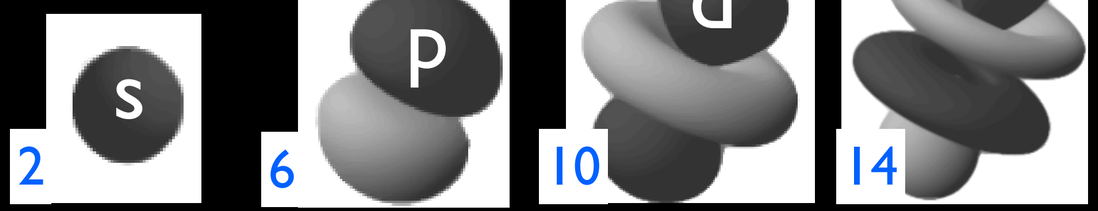
3s 3p 3d

4s 4p 4d 4f

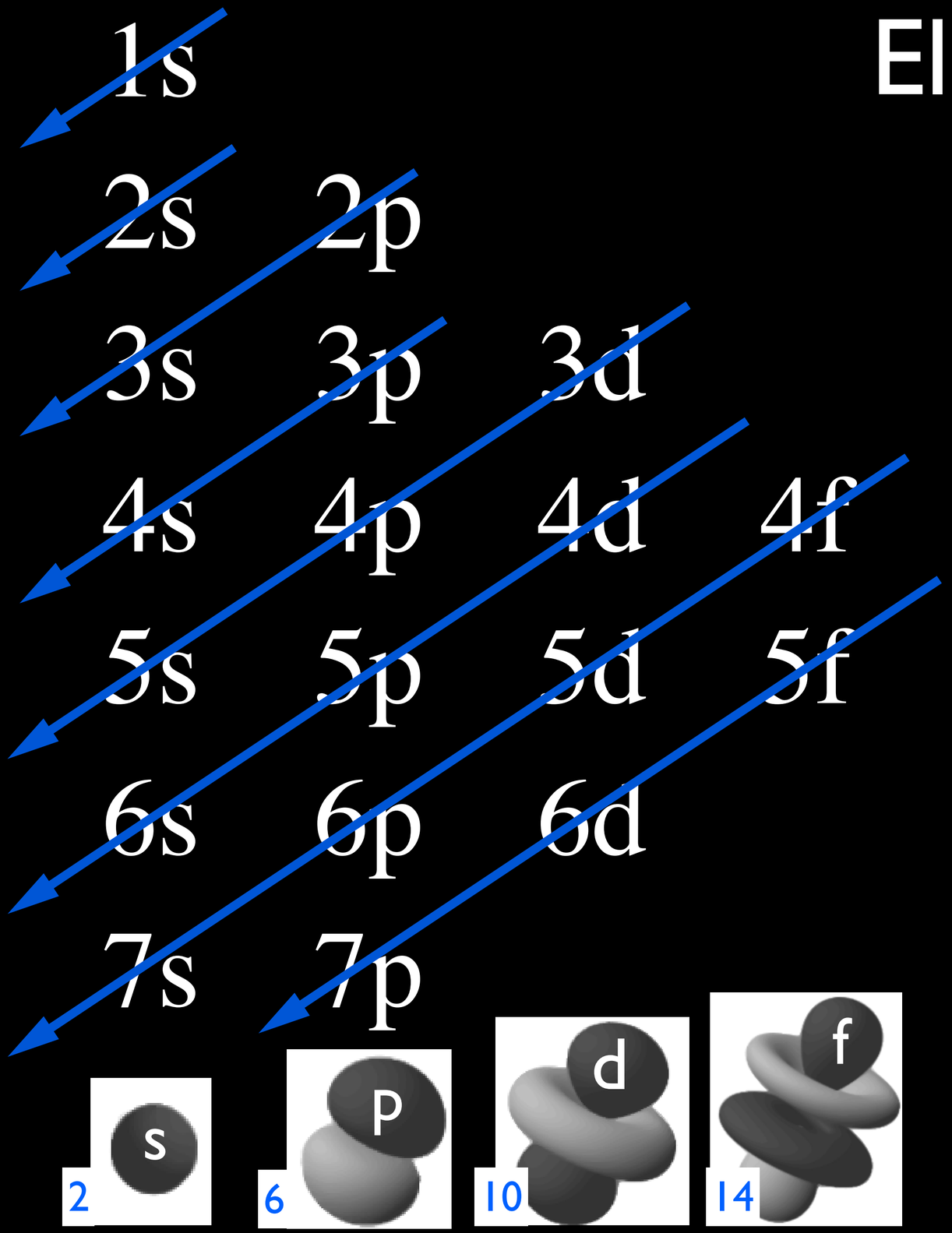
5s 5p 5d 5f

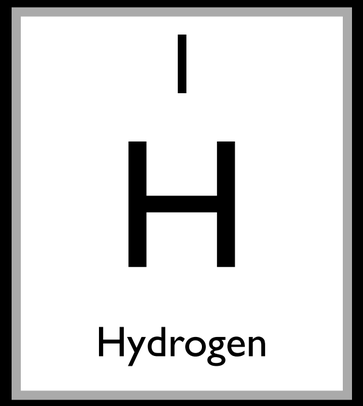
6s 6p 6d

7s 7p



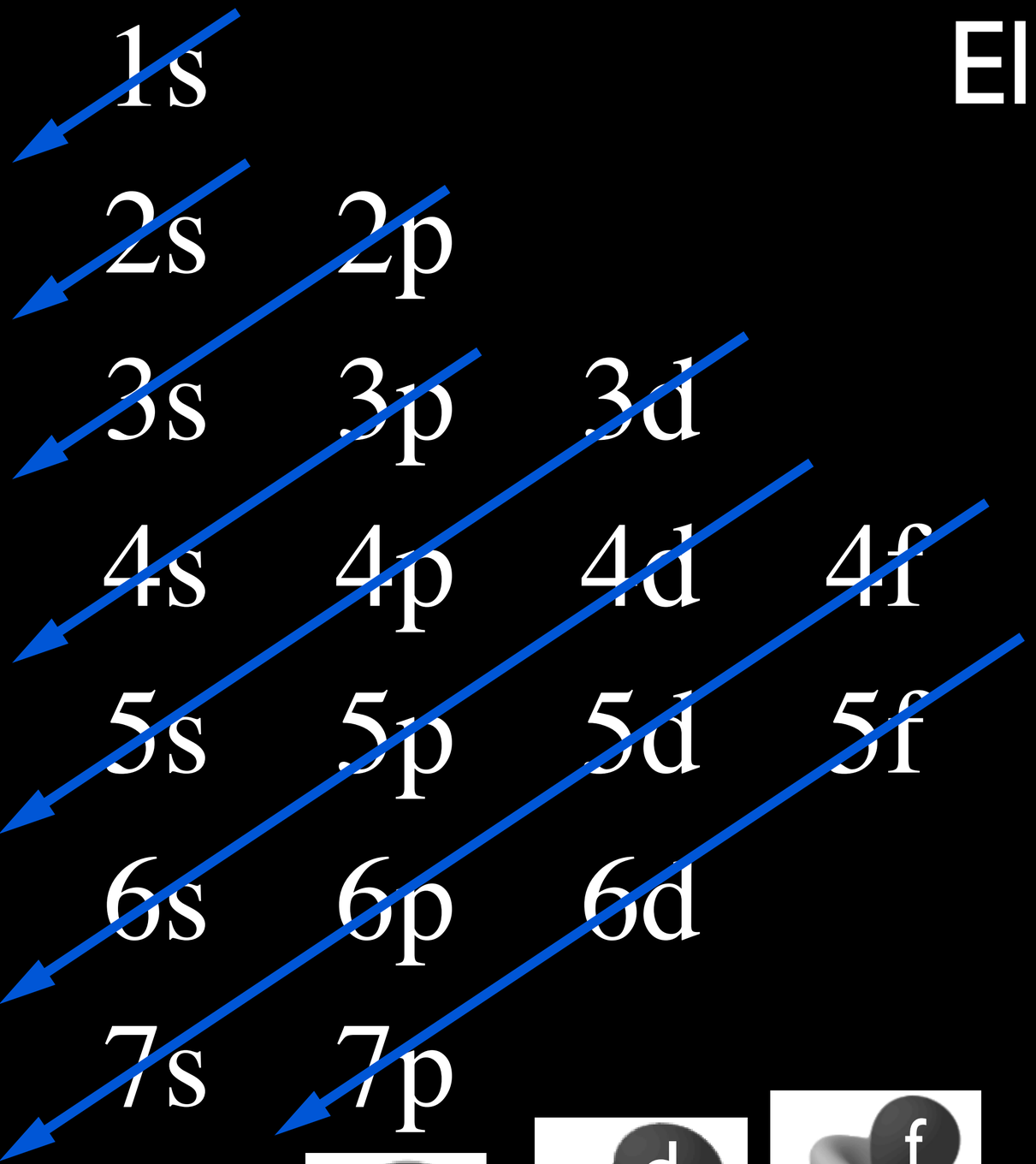
Electron Configuration

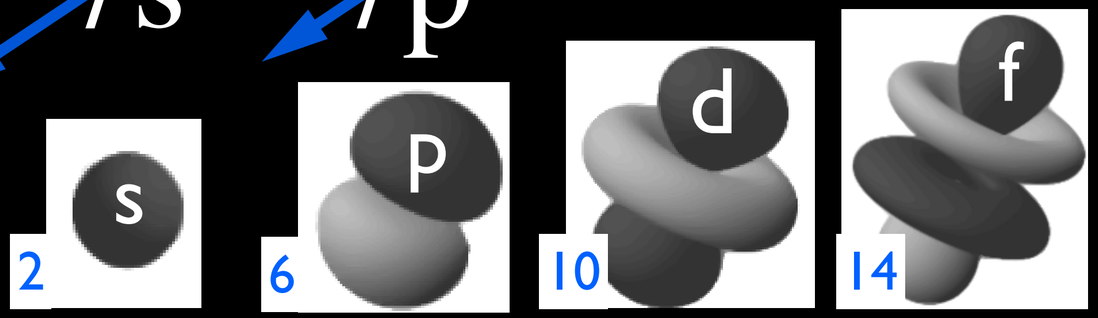


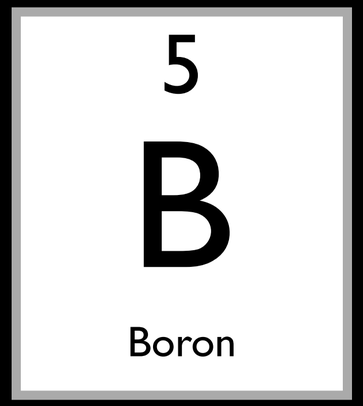


$1s^1$

Electron Configuration

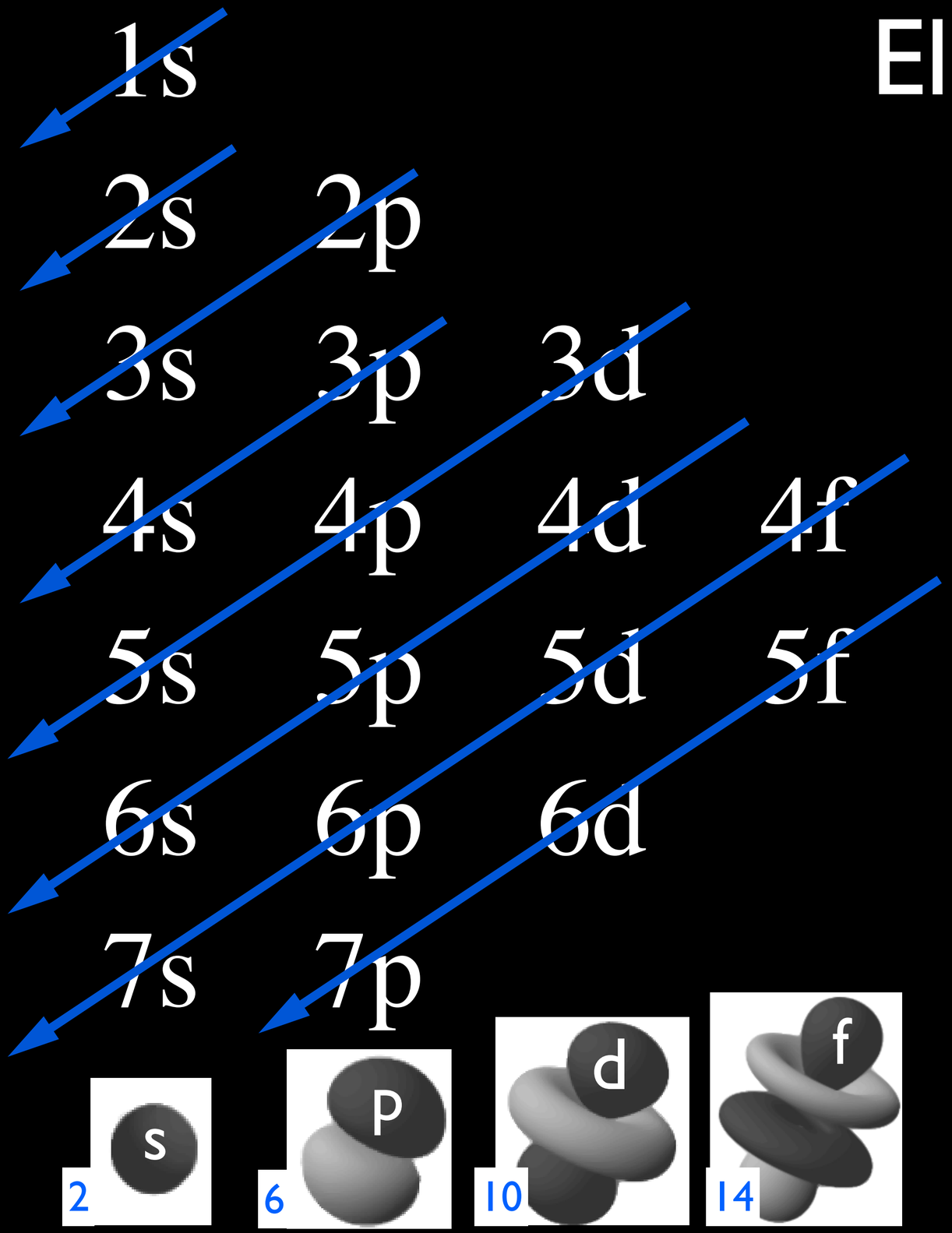






$1s^2 2s^2 2p^1$

Electron Configuration



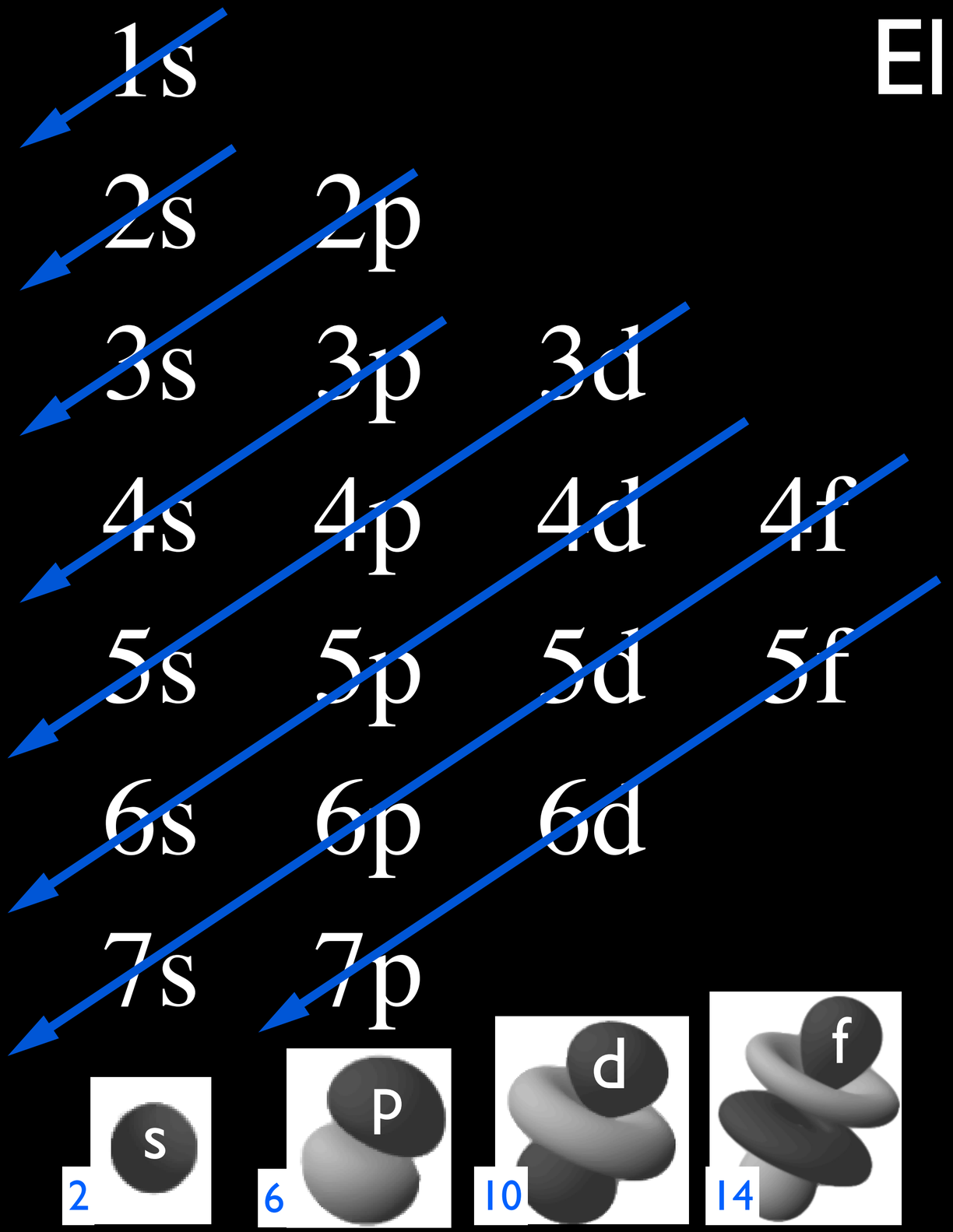
10

Ne

Neon

$1s^2 2s^2 2p^6$

Electron Configuration



11

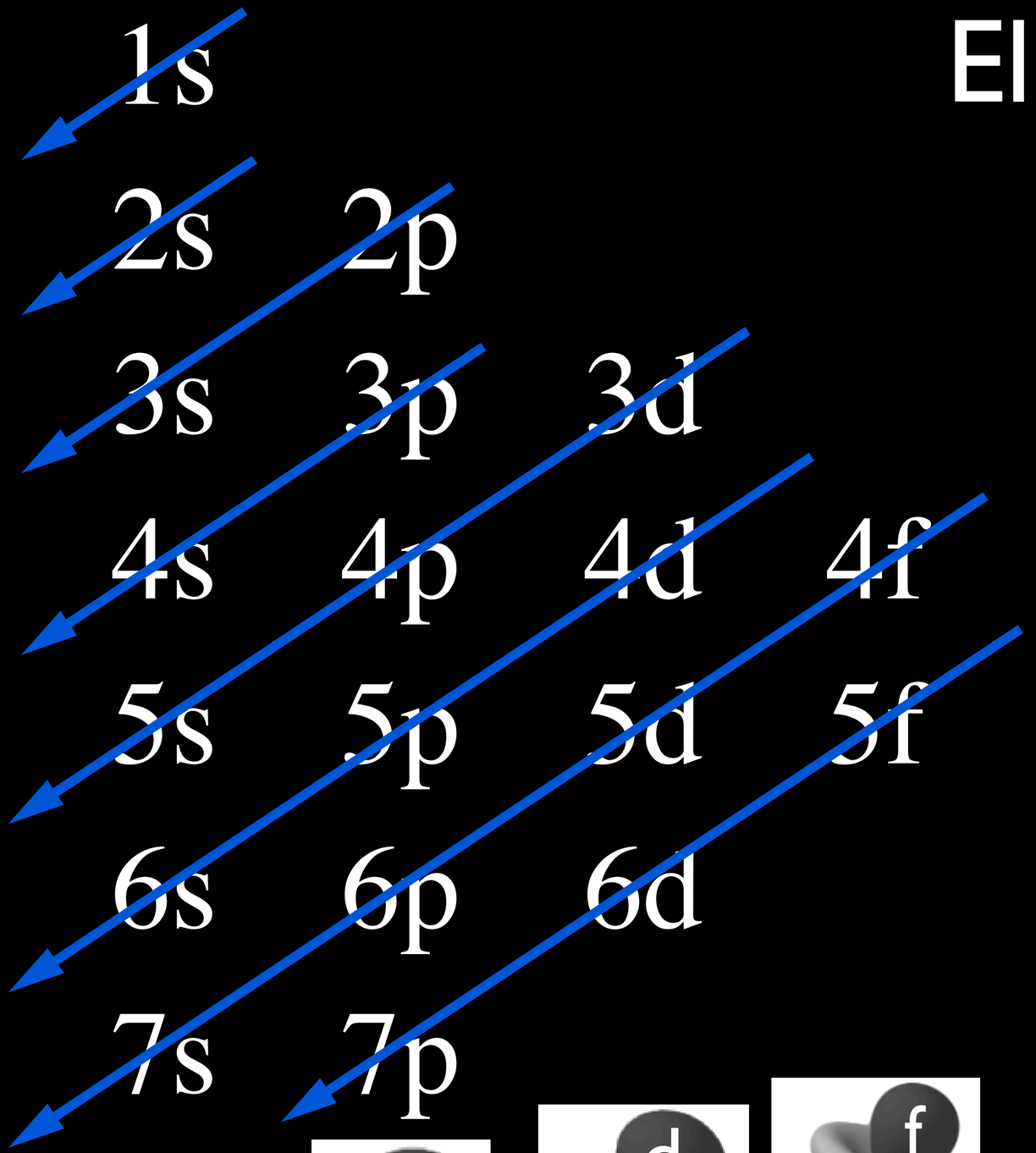
Na

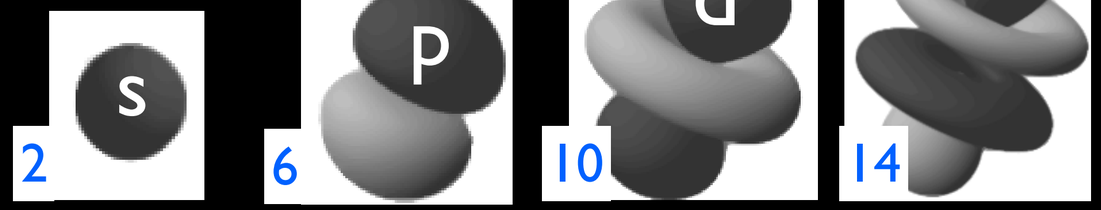
Sodium

$1s^2 2s^2 2p^6 3s^1$

$[Ne]3s^1$

Electron Configuration





17

Cl

Chlorine

You Try

47

Ag

Silver

Electron Configuration

distribution

different

Atoms or Ions

Ionization Energy

similar

quantified

Multielectron ions or atoms

shield

Core Electrons

Nucleus

Electron Configuration

distribution

Electrons

different

Atoms or Ions

Ionization Energy

similar

quantified

Coulomb's Law

Multielectron ions or atoms

Shells, Subshells and Orbitals

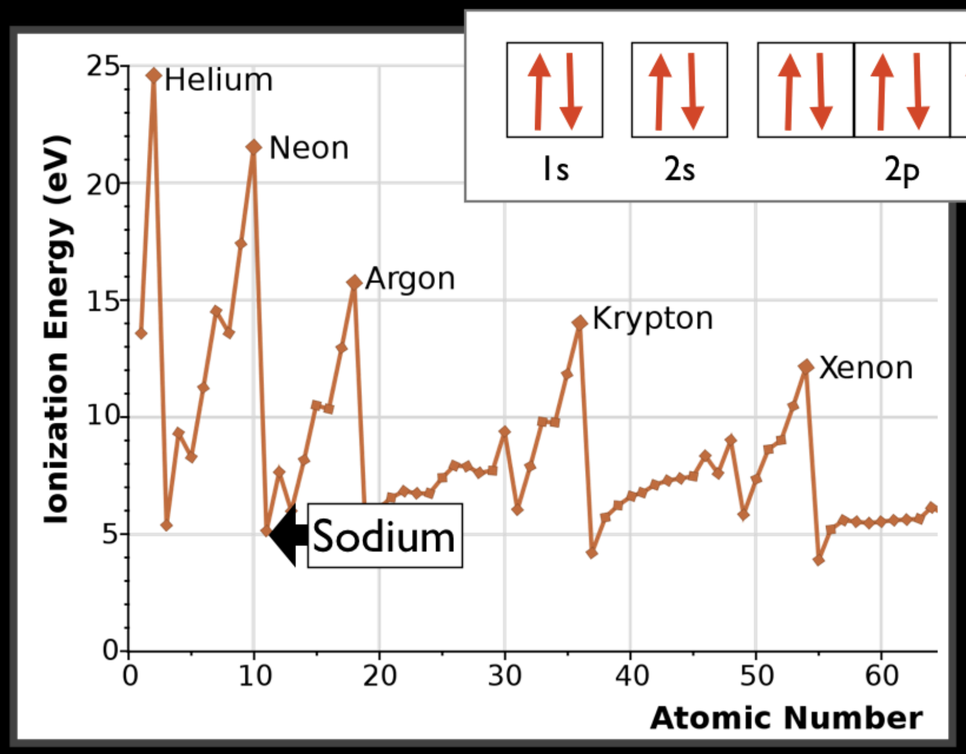
Valence Electrons

shield

Core Electrons

Nuleus

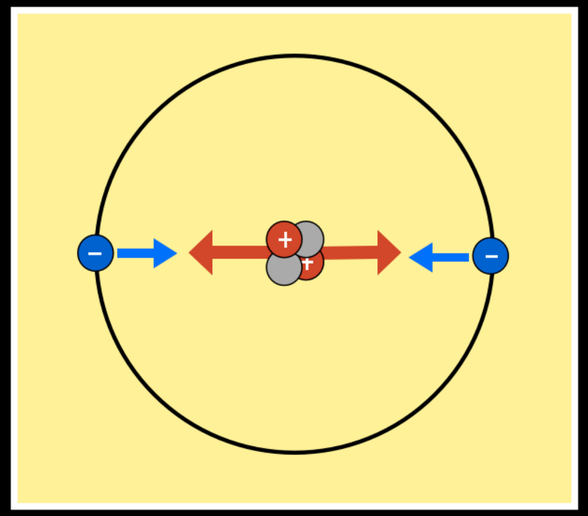
Did you learn?



How the energies of electrons within shells in atoms vary.

Did you learn?

Ionization Energy $E = k \frac{Q_1 Q_2}{r}$



To use Coulomb's Law to analyze measured energies of electrons.

Acknowledgements

File:Electron Configuration Diagrams from H to Ne.svg, n.d. http://commons.wikimedia.org/wiki/File:Electron_configuration_diagrams_from_H_to_Ne.svg.
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RJHall. *Ionization Energies of Neutral Elements, in Units of eV.*, October 10, 2010. File:Ionization energies.png. http://commons.wikimedia.org/wiki/File:Ionization_energies.svg.

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