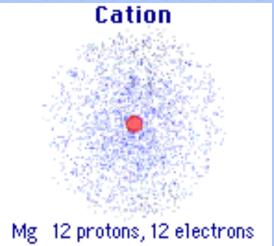
IONS

- IONS are atoms or groups of atoms with a positive or negative charge.
- Taking away an electron from an atom gives a CATION with a positive charge
- Adding an electron to an atom gives an ANION with a negative charge.
- To tell the difference between an atom and an ion, look to see if there is a charge in the superscript! Examples: Na⁺ Ca⁺² I⁻ O⁻²

Na Ca I O

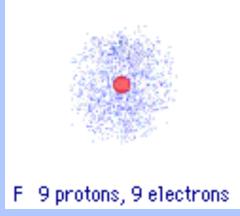
Forming Cations & Anions

A <u>CATION</u> forms when an atom loses one or more electrons.



 $Mg --> Mg^{2+} + 2 e-$

An ANION forms when an atom gains one or more electrons



$$F + e - - F$$

PREDICTING ION CHARGES

In general

- metals (Mg) lose electrons ---> cations
- nonmetals (F) gain electrons ---> anions

Learning Check – Counting

State the number of protons, neutrons, and electrons in each of these ions.

#e⁻

One Last Learning Check

Write the nuclear symbol form for the following atoms or ions:

A. 8 p⁺, 8 n, 8 e⁻

B. 17p⁺, 20n, 17e⁻

C. 47p⁺, 60 n, 46 e⁻