Worksheet goal: Work with isotopes, the periodic table, ionic and molecular compounds, ions, and nomenclature.

Work together in your groups. Use your TA and text for help if necessary.

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<table>
<thead>
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<tbody>
<tr>
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</tbody>
</table>

1. Give names and symbols for the following elements:

   a. An element with atomic number 49

   b. An element with 18 protons in its nucleus

   c. An element with 23 electrons

2. How many protons, neutrons, and electrons are in each of the following atoms?

   a. $^{15}_{7}$N

   b. $^{60}_{27}$Co

   c. $^{131}_{53}$I

3. Give the formulas and charges of the following ions:

   a. sulfite ion

   b. zirconium(IV) ion

   c. phosphate ion

   d. bromite ion

   e. perchlorate ion
4. Name each of the following compounds

   a. MgSO$_3$
   b. Co(NO$_2$)$_2$
   c. Mn(HCO$_3$)$_2$
   d. ZnCrO$_4$
   e. BaSO$_4$
   f. KMnO$_4$
   g. Al$_2$(SO$_4$)$_3$
   h. LiClO$_3$

5. Analogous oxoanions of elements in the same group of the periodic table are named similarly. Based on the names of the oxoanions of phosphorus and sulfur, name the following anions:

   a. AsO$_4^{3-}$
   b. SeO$_3^{2-}$
   c. SeO$_4^{2-}$
   d. HAsO$_4^{2-}$