

## REVIEW GAME: “Element Connections”

Make a copy of the game board for each player and tell them to fill in the circles with symbols of elements on the main part of the table (no actinides or lanthanides). The symbols should be randomly placed so that each board is unique. Provide pennies, or other tokens, for the players to put on the circles as clues are called. When a player has tokens placed on a continuous pathway from top to bottom, he calls out “Connection!” The player must then read off the elements he has along the pathway and his answers are checked.

You may use these clues in any order. Just make sure to write down the answers on a slip of paper as you go along (so you can check student answers easily and quickly).

### Clues:

- This element has no neutrons. (hydrogen)
- This element has 48 protons. (cadmium)
- The name of this element means “stench.” (bromine)
- This element is named after the town of Ytterby (it-er-bee), Sweden. (yttrium)
- This alkali earth metal burns red in fireworks. (strontium)
- This element has 18 electrons. (argon)
- This is the smallest element that is not a gas. (lithium)
- This element was first discovered in the sun. (helium)
- This alkali earth metal is used to take x-rays of the digestive system. (barium)
- You may mark a radioactive element of your choice. (technitium, polonium, astatine, radon)
- This alkali metal is very abundant in bananas. (potassium)
- This semi-metal is famous for its use as a poison. (arsenic)
- This element has 15 electrons. (phosphorus)
- This element has electron configuration  $1s^2 2s^2 2p^6 3s^2$ . (magnesium)
- This transition metal is used to repair bones. (titanium)
- This element has 9 protons. (fluorine)
- This element can be found occurring naturally as a light yellow mineral. (sulfur)
- This is highest element (highest atomic number) that is NOT radioactive. (bismuth)
- This element bonds with itself to form the hardest substance on earth. (carbon)
- This element is a gas with a valence of -3. (nitrogen)
- This element has a valence of -1 and used to be used for first aid. (iodine)
- The other name for this element is wolfram. (tungsten)
- Chemical compounds containing this element are often called “ferrous.” (iron)
- This heavy, gray metal was once used to make water pipes. (lead)
- Don’t confuse this element with magnesium! (manganese)
- This element has 30 electrons and is used to galvanize metals to prevent rust. (zinc)
- This is the only “happy” atom in the row that iron is in. (krypton)
- This element is in the same row as silver and the same column as nitrogen. (antimony)
- This element has a valence of 4 and was named after the Earth. (tellurium)
- This element has 49 protons. (indium)
- You may choose one element that has a valence of +1. (lithium, sodium, potassium, rubidium, cesium)
- This element combines with oxygen to make sand. (silicon)
- This element has an atomic weight of 16. (oxygen)
- This element was named after the Greek god Tantalus. (tantalum)
- This element has 5 neutrons. (beryllium) (You must subtract atomic # from atomic weight.)
- This element has electron configuration  $1s^2 2s^2 2p^6$ . (neon)
- This element is the only radioactive element in its row. (technitium)

- This alkali earth metal is found in bones and in concrete. (calcium)
- This is the most reactive, (but non-radioactive), member of the alkali metals. (cesium)
- This element has 44 protons. (ruthenium)
- The Latin name for this element is natrium. (sodium)
- The average weight of an atom of this element is about 190. (osmium)
- This is the lightest member of the true metals. (aluminum)
- This heavy transition metal is a liquid at room temperature. (mercury)
- This precious metal is current worth more per ounce than gold. (platinum)
- This element was named after Germany and is used in electronics. (germanium)
- You may choose one element that is a metal used in coins. (gold, silver, tin, zinc, copper, nickel)
- This element has a whole series named after it. (lanthanum)
- This shiny transition metal is used on vehicles because it is so resistant to corrosion. (chromium)
- This true metal is named after France. (gallium)
- This is the heaviest noble gas that is not radioactive. (xenon)
- Pewter is made mostly of this metal. (tin)
- This element was named after Marie Curie's homeland, Poland. (polonium)
- This element was named after Scandinavia. (scandium)
- This element has 23 electrons. (vanadium)
- This element was named after the asteroid Pallas. (palladium)
- This element has 72 protons. (hafnium)
- This element has a valence of -2 and is in the same row as potassium. (selenium)
- The average weight of an atom of this element is about 204. (thallium)
- The name of this element comes from the Latin word for rainbow: "iris." (iridium)
- This is the heaviest member of the halogen family. (astatine)
- This element has 42 protons. (molybdenum)
- This transition metal combines with O and Si to make a clear, diamond-like gemstone. (zirconium)
- The average weight of an atom of this element is about 93. (niobium)

# ELEMENT CONNECTIONS

○	○	○	○	○	○	○
○	○	○	○	○	○	○
○	○	○	○	○	○	○
○	○	○	○	○	○	○
○	○	○	○	○	○	○
○	○	○	○	○	○	○
○	○	○	○	○	○	○

Fill in each circle with the symbol of an element. Use only the elements in the rows that begin with H, Li, Na, K, Rb, and Cs. Don't use any lanthanides or actinides.)