

# 7B Periodic Table Group Challenge

## How is the periodic table organized?

Each box on the periodic table tells you the element symbol, atomic number, and atomic mass for all the known elements. This is very useful information, but did you know that the arrangement of the elements on the periodic table gives you even more information? Each major column of elements represents a group of elements with similar chemical behavior. Can you see why the arrangement of elements on the periodic table is important?

### Materials

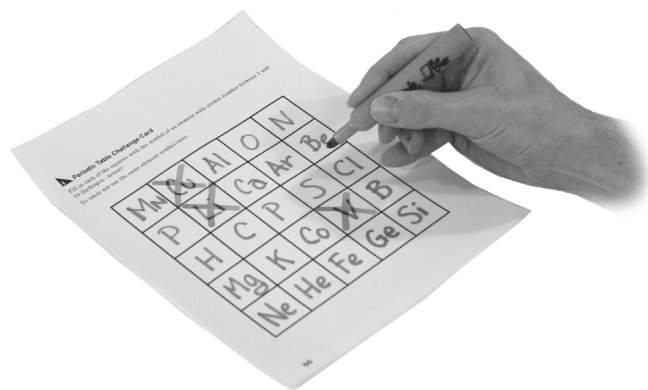
- Blank periodic table bingo card sheets; 1 per player
- Caller's clues and checklist; 1 per team
- Copy of the periodic table of elements; 1 per player
- Highlighter or other marker; 1 per player

## 1 The challenge

Periodic Table Group Challenge is a bingo-like game that helps you understand how the elements on the periodic table are arranged. Each player will fill out their own five-by-five grid with element symbols, and then the caller will read element clues. The players must interpret the clues and highlight any boxes on the grid that fit the clue. The first player that correctly highlights five boxes across, up-and-down, or diagonally in a row is the winner.

## 2 Rules of play

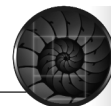
1. Designate one member of your group to be the caller. The caller will call out clues and keep track of them on the checklist.
2. Each player will have a sheet of 4 blank grids. Fill out one of the grids with random element symbols (other grids can be used for additional games). You may choose elements in the atomic number range of 1 – 54 (hydrogen through xenon). Do not repeat symbols on the card. You will only be able to fit 25 of the possible 54 symbols on the card. You choose which ones to use, and where to place them on the grid.
3. The caller will randomly pick clues from the list, and as a clue is called out, the caller will check off the clue. The answers are only for the caller to check the winner's card!
4. When a clue is called, players check the grid to see if any of the elements fit the clue. Any elements that fit the clue must be highlighted. If no elements fit the clue, then no boxes are highlighted on that turn.
5. When a player has five boxes highlighted in a row up and down, across, or diagonally, play stops. The caller will double check the clue list and answers to see if the clues indeed match the elements. Play continues until a true winner is determined.



### 3 Caller's clues

Clues can be called in any order. Check off each clue as you use it.

Clue	Possible Answers
A member of the carbon family	C, Si, Ge, Sn
Chemical properties similar to calcium, but not calcium	Be, Mg, Sr
A transition metal that has a "C" in the symbol	Sc, Cr, Co, Cu, Tc, Cd,
A member of the oxygen family	O, S, Se, Te
Chemical properties similar to cesium, but not cesium	H, Li, Na, K, Rb
A member of the noble gas family	He, Ne, Ar, Kr, Xe
A nonmetal in the nitrogen family	N, P
A metal in the boron family	Al, Ga, In
A gas in the oxygen family	O
A solid in the halogen family	I
An element that is liquid at room temperature	Hg, Br
A transition metal with less than 25 protons	Cr, V, Ti, Sc
A transition metal commonly found in jewelry	Ni, Cu, Ag
A metalloid in the carbon family	Si, Ge
Chemical properties similar to aluminum, but not aluminum	B, Ga, In
A transition metal with 39 – 43 protons	Y, Zr, Nb, Mo, Tc
An element symbol with a first letter that is different from the first letter of the name	Na, K, Fe, Ag, Sn, Sb
A member of the nitrogen family with a one-letter symbol	N, P
A transition metal from period 5	Y, Zr, Nb, Mo, Tc, Ru, Rh, Pd, Ag, Cd

**4** Periodic table challenge card

Fill in each of the squares with the symbol of an element with atomic number between 1 and 54 (hydrogen - xenon)

You may not use the same element symbol twice.
