

## Quantitative periodic table – dominoes

10	START: How many protons are there in an atom of nitrogen?	7	How many protons are there in an atom of fluorine?
9	How many electrons are there in an atom of lithium?	3	How many electrons are there in an atom of aluminium?
13	How many neutrons are there in an element of calcium?	20	How many neutrons are there in an element of sodium?
12	How many neutrons are there in an element of iron?	30	How many neutrons are there in an atom of hydrogen?
0	How many electrons can fit in the first electron shell of an atom?	2	How many electrons can fit in the second electron shell of an atom?
8	State the total number of electrons that fit in the first three electron shells of an atom.	18	In which group do atoms have six electrons in their outer shell?
6	In which group do atoms have only one electron in their outer shell?	1	Which group of the periodic table contains the elements arsenic and phosphorous?
5	Which group of the periodic table contains the elements silicon and lead?	4	How many neutrons are there in an element of iodine?



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74	How many neutrons are there in an element of phosphorous?	16	The atomic number of titanium
22	The atomic number of germanium	32	The atomic number of argon
18	The atomic number of nickel	28	The mass number of zinc
65	The mass number of fluorine	19	The mass number of phosphorous
31	The mass number of aluminium	27	What is the difference in proton number between fluorine and iodine?
44	What is the difference in proton number between beryllium and barium?	52	How many times heavier is a krypton atom compared to a helium atom?
21	How many times heavier is a tin atom compared to a boron atom?	11	How many times heavier is an arsenic atom compared to a hydrogen atom?
75	How many times heavier is a radium atom compared to a beryllium atom?	25	How many times heavier is an argon atom compared to a helium atom?



### Teaching notes

This is a domino style activity. There are 32 cards, allowing it to be used with a whole class. The activity could also be done individually, in pairs or in small groups to produce a complete ordered set of cards.

Differentiation: the cards generally increase in difficulty from the start to the end. In particular, the last 5 cards require more mathematical processing.

When attempting this activity, students should have already studied atomic structure (including protons, electrons, neutrons and how they link to atomic number and mass number) and the Periodic Table (including group numbers).

Further resources:

The following resources may also be useful:

- Periodic tables - for colouring or cut and paste! (19414)  
[www.teachitscience.co.uk/index.php?CurrMenu=2183&resource=19414](http://www.teachitscience.co.uk/index.php?CurrMenu=2183&resource=19414)
- Atomic structure - follow on cards (19388)  
[www.teachitscience.co.uk/index.php?CurrMenu=2183&resource=19388](http://www.teachitscience.co.uk/index.php?CurrMenu=2183&resource=19388)