

Elements Organized

1. How are the elements organized today?
2. What are some trends that are observed within the groups of the Periodic Table?
3. What are some trends that are observed within the periods of the Periodic Table?
4. What are some limitations of the Periodic Table?

Video: Elements Organized (25 min.)

How are the elements organized today?

- ^{huge variety} metals, non-metals, elements in same group have similar properties
- arranged by atomic number (# of protons) on the Periodic Table
- groups - columns
- periods - rows
- chemical
- some physical

What are some trends that are observed within groups or families of the Periodic Table?

- trends: regular changes as move down \sim across P.T.
- density of noble gases increases with atomic number
 - reactivity with air, water \uparrow as move down (metals)

a group of metals - formulas for oxide of group 4 ^{or} SiO_2

What are some trends that are observed across the periods of the Periodic Table?

- reaction with halogens, oxygen, # of ^{valence} e^-
- each row seems to repeat (every 8 elements)
- ratio of elements in compound increase, (mole ratio)

What are some limitations of the Periodic Table?

- Periodic trends are atomic mass I, Ar
- "neither precise or regular as we would like"

ie. ratio of halogens reacting = period 2 elements ^{last with} Cl

— some similar elements are separated $\rightarrow \text{Cu, Ag, Au}$ separated from group 1