

6.1 THE DEVELOPMENT OF THE PERIODIC TABLE

DISCOVERING THE PERIODIC TABLE

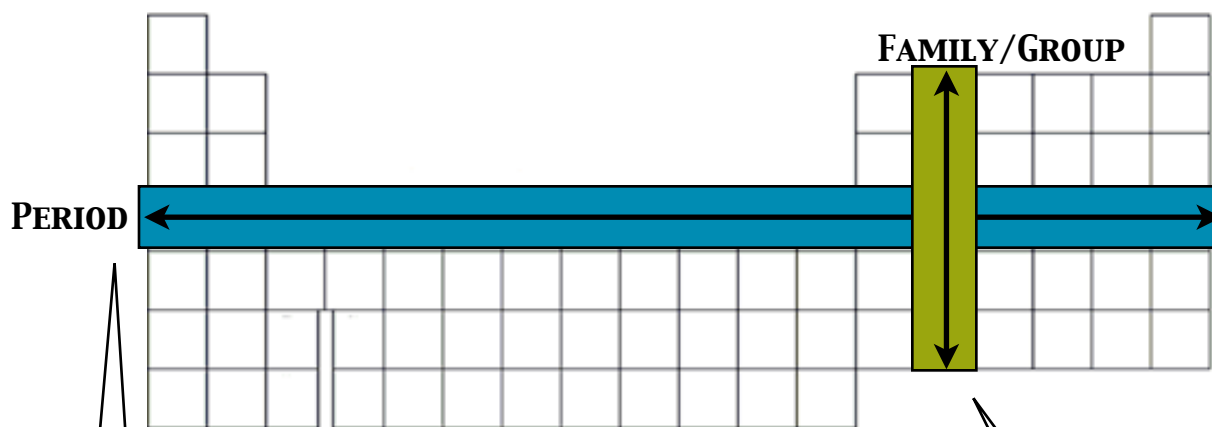
Father of the modern Periodic Table:

He organized his periodic table by:

Periodic Law:

FLAME TEST

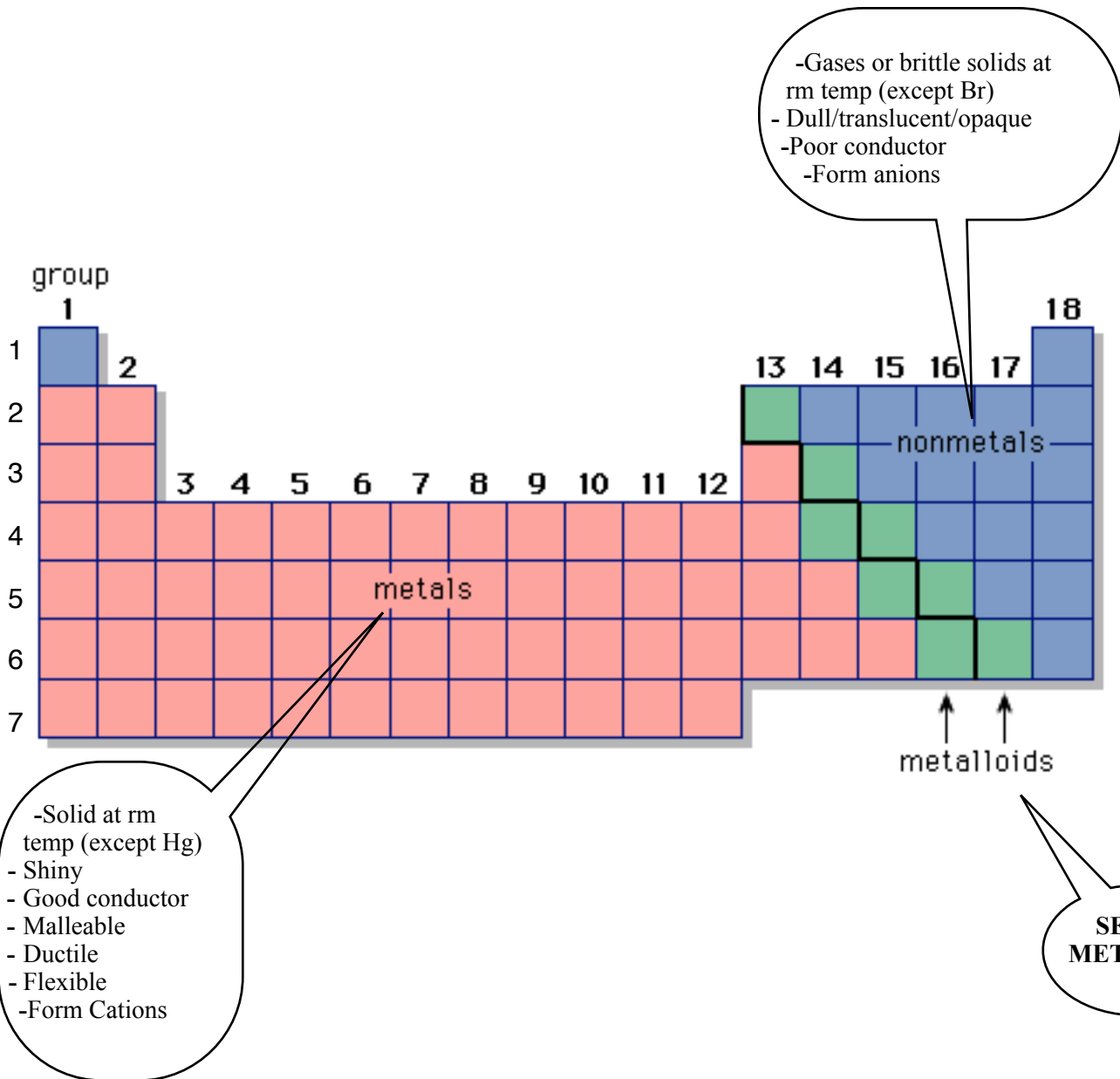
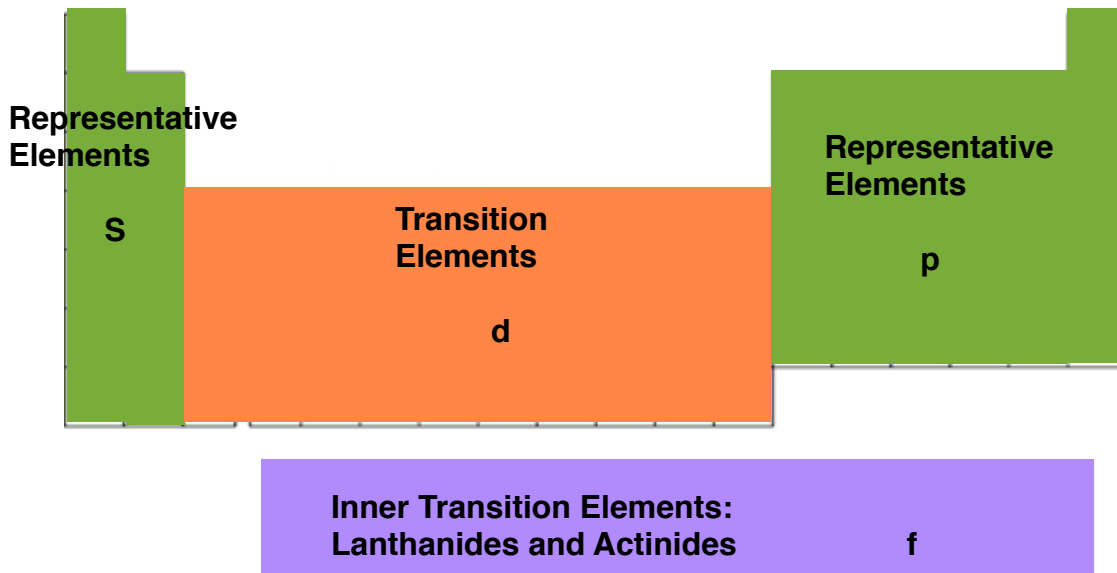
DETAILS OF THE PERIODIC TABLE



Across a period
- there are regular changes
in properties

“periodic trends”

Down a family -
they have similar
properties due to similar
outer e^- config



Alkali metals

- Soft, silver solids
- Most reactive metal
- 1 valence e^-
- Chem rxn: lose 1 valence e^-
- Forms 1+ cations
- **Isoelectric** with previous noble gas

Halogens

- Most reactive
- All 3 states are rep
- Diatomic molecules
- Form compounds with metals
- 7 valence e^-
- 2 e^- in s and 5 e^- in p
- Gain 1 e^-
- Forms 1- anions

Noble Gases

- Unreactive
- Fill s and p subshells (except He)
- Stable octets



Alkaline Earth metals

- Silver and reactive
- Form compounds with non-metals
- 2 valence e^-
- Chem rxn: lose 2 valence e^-
- Forms 2+ cations
- **Isoelectric** with previous noble gas

Transition metals

- Hard solids
- High melting & boiling point
- Form cations with multiple charges
- Chem rxn: lose 2 valence e^-
- Forms 2+ cations
- **Isoelectric** with previous noble gas