

#1 History of the Periodic Table

- People that made it happen
- A “story” of its development
- How elements got their names
- How and Why elements #110-118 are named the way they are

#2 Periodic Law and Table Layout

- Lay out of Table: groups, series, periods, families
- State the Periodic Law and explain what it is
- Explain how it is used to understand the following properties: metal to non-metal, freezing and boiling points, electron configurations, atomic radii
- Who came up with it and how

#3 Alkali Metals

- Properties and trends
- Names of families and why
- Why called part of the Main Group/s-block
- How properties fit with the periodic law
- Importance in chemistry, daily life, industry, etc.

#4 Alkaline Earth Metals

- Properties and trends
- Names of families and why
- Why called part of the Main Group/s-block
- How properties fit with the periodic law
- Importance in chemistry, daily life, industry, etc.

#5 Transition Elements (d-block)

- Properties and trends
- Names of families and why
- How properties fit with the periodic law
- Importance in chemistry, daily life, industry, etc.

#6 Inner Transition Elements (f-block)

- Properties and trends
- Names of families and why
- How properties fit with the periodic law
- Importance in chemistry, daily life, industry, etc.

7 Carbon Family

- Properties and trends
- Names of family and why
- Why called part of the Main Group/p-block
- How properties fit with the periodic law
- Importance in chemistry, daily life, industry, etc.

#8 Boron, Nitrogen and Oxygen Families

- Properties and trends
- Names of family and why
- Why called part of the Main Group/p-block
- How properties fit with the periodic law
- Importance in chemistry, daily life, industry, etc.
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#9 Halogen Family

- Properties and trends
- Names of family and why
- Why called part of the Main Group/p-block
- How properties fit with the periodic law
- Importance in chemistry, daily life, industry, etc.

#10 Noble Gas Family

- Properties and trends
- Names of family and why
- Why called part of the Main Group/p-block
- How properties fit with the periodic law
- Importance in chemistry, daily life, industry, etc.

#11 Radii of Atoms and Ions

- Definitions- fancy and what it really means to us
- How are they related to one another?
- How do they fit with the Periodic Law and periodic trends
- Shielding and nuclear charge effects

#12 Electron Affinity (EA)

- Definition of EA- fancy and what it really means to us
- How is EA related to Ionization Energy and Electronegativity
- How EA fits with the Periodic Law
- How we can use the periodic Table so we don't have to memorize
- Shielding and nuclear charge effects

13 Ionization Energy (IE)

- Definition of IE- fancy and what it really means to us
- How is IE related to Electron Affinity and Electronegativity
- How IE fits with the Periodic Law
- How we can use the periodic Table so we don't have to memorize
- Shielding and nuclear charge effects

#14 Electronegativity

- Definition of EN- fancy and what it really means to us
- How is EN related to Ionization Energy and Electron Affinity
- How EN fits with the Periodic Law
- How we can use the periodic Table so we don't have to memorize
- Shielding and nuclear charge effects

#15 Covalent Bonding

- Definition- fancy and what it really means to us
- Which elements participate?
- Octet rule, electron configurations and Lewis Structures helping?
- How do they relate to the periodic table?
- How is electronegativity used in deciding type of bond?
- Properties of covalent compounds
- Examples of
- How this relates to the Periodic Table

#16 Ionic Bonding

- Definition- fancy and what it really means to us
- Which elements participate?
- How is electronegativity used in deciding type of bond?
- How can electron configurations and Lewis Structures help?
- Properties of ionic compounds
- Examples of
- How this relates to the Periodic Table
- Crystal Structures-show varieties, but we will not memorize

#17 Metallic Bonds & Alloys

- Definition – are they compounds or not?
- Which elements participate?
- Properties of metallic compounds
- Examples of
- How it relates to the periodic table

#18 Lewis Structures

- Octet rule
- How to draw- refresh our brains-give examples
- How does the periodic table help
- What they mean/show us
- Their use in covalent and ionic bonding

#19 Hydrogen “Bonding”

- What it is/why it exists
- What compounds participate
- What properties it gives to those compounds
- Examples of
- How periodic table can help predict
- How is electronegativity used in deciding type of bond?

#20 Molecular Structures/Shapes

- What it is/why we use it
- What compounds do we use this for
- How to figure out/draw- give examples
- How does the periodic table help
- What does the shape tell us about the molecule/substance-properties

#21 Bond/Molecular Polarity

- What is it/why it exists
- How do we determine it- give examples
- How the periodic table can help
- How does this relate to each type of compound
- What does it tell us about the molecule/substance-properties