concept analysis of structure of matter

- **Concept Label: structure of matter**
- **Concept definition:** Every thing that has mass and volume
- **Concept Type:**
  - ✓ **Concrete : liquids, solids and gases**
  - ✓ **Abstract :** Molecules, atoms, ions, electrons, protons and neutrons
- **Attiribute :**
  - ✓ **Critical:** Has mass Has volume
  - ✓ **Variable:** Phyisical properties (melting points, boiling points, density, solubility, conductivity, hardness, color,etc.) Chemical properties (reactivity) Physical changes and chemical changes
- **Concept Position:**
  - ✓ **Supperordinate :** Subsatnces
  - ✓ **Coordinate:** Pure substances and mixtures
  - ✓ **Sub ordinate:** Elements (metals , non metals and metalloids) compounds , heterogeneous mixtuers , homogeneous mixtures
- **Examples:** sodium, magnsium , Iron , gold carbon, water, sugar, sodium chilorides ,milk, blood soil, air , etc.
- **Non examples :** Waves, light rays (radiation)

Concept Analysis for Periodic Table

- **Concept Label :** Periodic table
- **Concept definition**: A tabular display of the chemical elements organized on the basis of thier atomic number and chemical properties into groups , periods and blocks
- **Concept type:**
  - ✓ **Concrete :** periodic system (groups, periods and blocks),
  - ✓ **Abstract :** atoms (atomic number)
- **Attiribute to :**

✓ **Critical**: periodic table is Organization of elements electron confguration and chemical properties

✓ **Variable :** Atomic number, Periods, groups and blocks

- **Concept position**

✓ **Supperordinate: none**

✓ **Coordinate: none**

✓ **Sub ordinate:** Reperesntative elements teransiton elements , inner transition elements, noble gases

- **Examples:** Modern periodic table
- **Non examples:** Mendelev's periodic table

Concept analysis for periods

- **Concept label** : period
- **Concept definition** : the horizontal row in the periodic table
- **Concept type : concrete**
- **Attiribute:**

✓ **critical :** Periods , horizontal row , periodic table

✓ **variable** : Number of main shells, electronegativity, ionization energy, metaliic and non metallic properies

- **Concept position :**

✓ **supperordinate :**Periodic table

✓ **coordinate** : groups

✓ **subordinate:** Number of periods

- **Examples** : Period 1.2, 3, etc
- **Non examples**: Blocks