

# MINERAL IDENTIFICATION

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## Goals

- Learn the properties that distinguish minerals
- Learn to identify several common minerals
- Learn to use your powers of observation



# Mineral Definition


- Naturally Occurring – found in nature
  - Crystalline – made from an orderly atomic array or lattice
  - Inorganic – not from a life process
  - Solid – not liquid, gas, or plasma
  - Consistent Chemical Formula
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# Mineral Properties

- Physical Properties
  - Crystal Form – a regular arrangement of atoms that produces a distinct shape (the way the mineral grows)
  - Cleavage – a weakness in the atomic structure that produces consistent breaks along planes
  - Fracture – a recognizable pattern of break not on a cleavage plane
  - Hardness – the resistance to scratching, measured with the Mohs Scale 1-10 (Talc to Diamond)



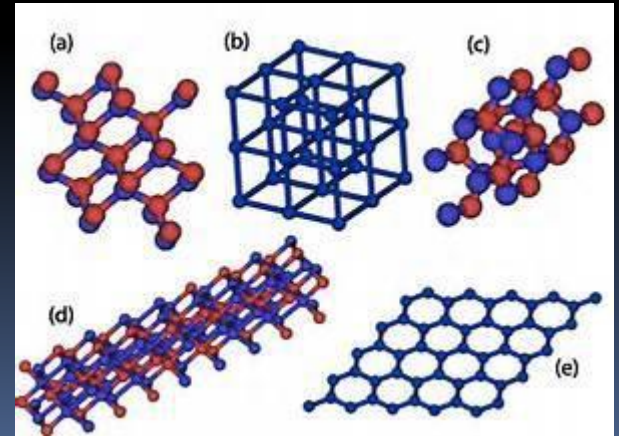
# Mineral Properties

- Properties of Appearance
    - Luster – the way the mineral reflects light
      - Dull, earthy, resinous, pearly, vitreous, metallic
    - Color – probably the first thing we notice, but unreliable
    - Streak – the color of the mineral in powdered form
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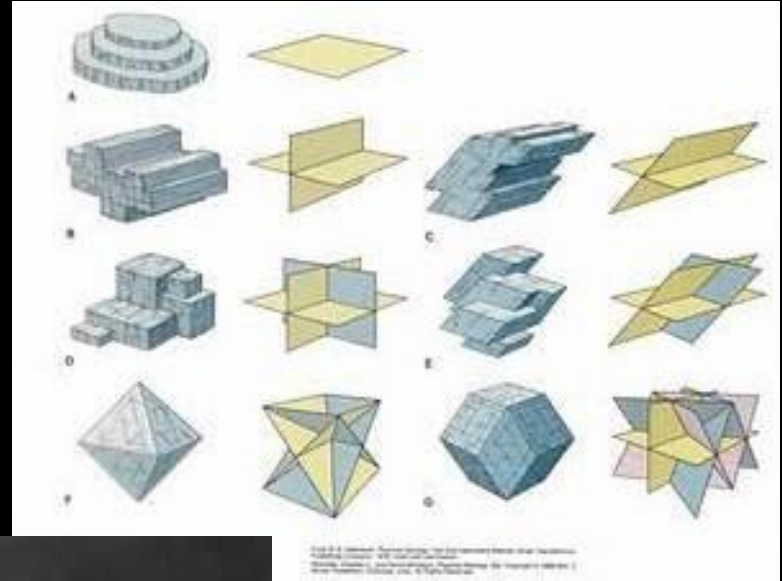
# Mineral Properties

- Additional Properties
  - Smell
  - Taste
  - Effervescence in cold HCl
  - Magnetism
  - Feel
  - Density
  - Refraction of Light
  - Fluorescence in UV Light

# Crystal Form



# Mineral Cleavage



# Fracture





# Luster

