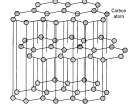
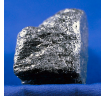
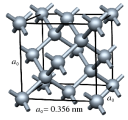
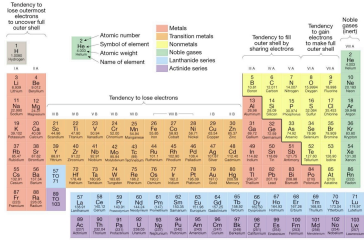


MATTER & MINERALS

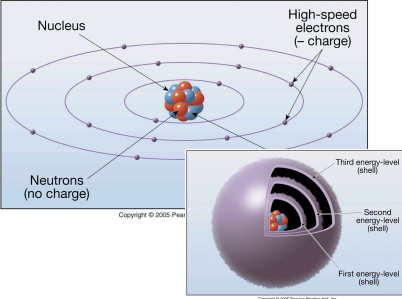


1

ELEMENTS & ATOMS



2



3

BONDING

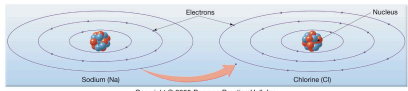


"Shaken, not stirred!"

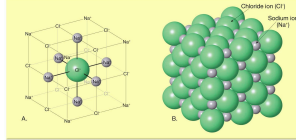


4

IONIC BONDING

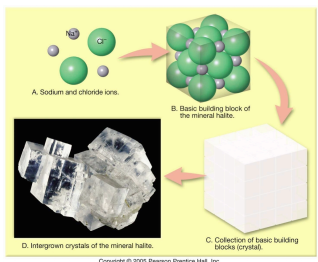


Halite
or
"Table Salt"



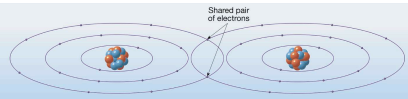
5

IONIC BONDING



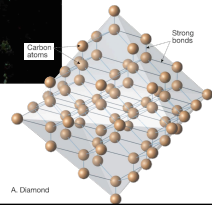
6

COVALENT BONDING



7

COVALENT BONDING



3-D
Molecules

8

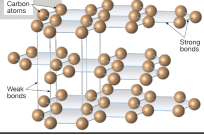
COVALENT BONDING



Graphite

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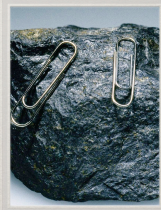
Sheet
Molecules



9

METALLIC BONDING

'Shared' electron clouds



10

MINERALS

11

MINERAL PROPERTIES

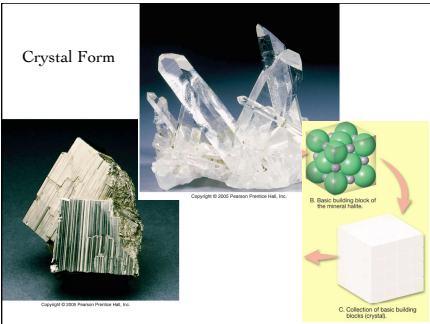
12

MINERAL PROPERTIES



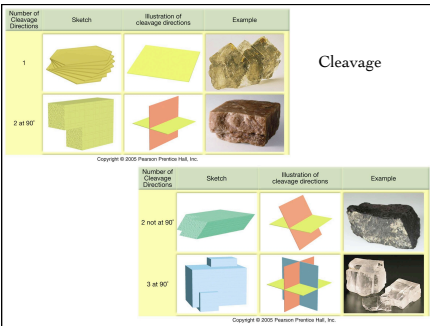
13

Crystal Form



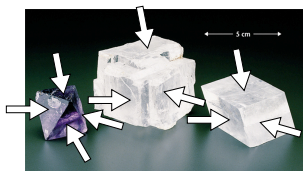
14

Cleavage



15

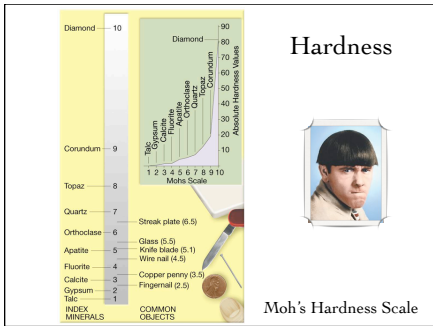
Fluorite, halite, and calcite all exhibit perfect cleavage



16



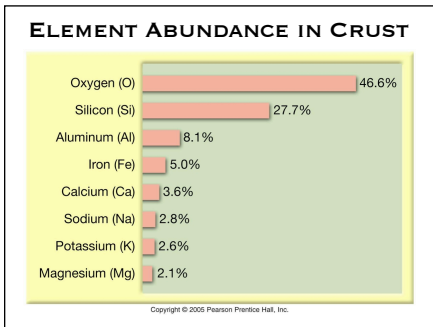
17



18

MINERAL GROUPS

19

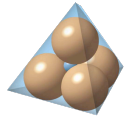


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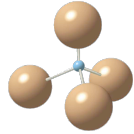
MINERAL GROUPS

Silicates

21

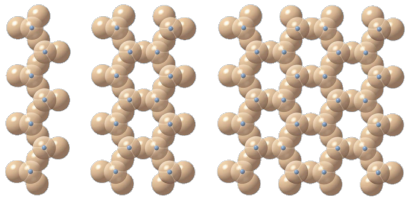


Silicon-Oxygen
Tetrahedron



22

SiO_2 Chains and Sheets of Tetrahedra



Single
Chains

Double
Chains

Sheets

23

**COMMON
MINERALS**

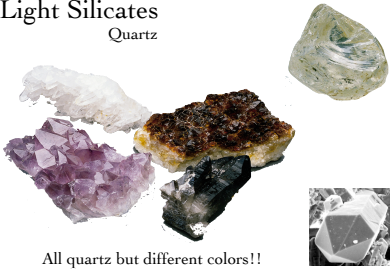
24

Light Silicates
Feldspar Group



25

Light Silicates
Quartz



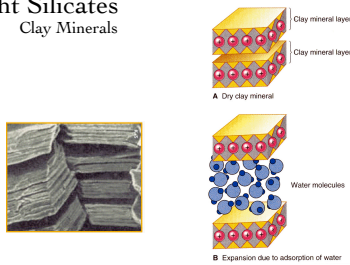
26

Light Silicates
Muscovite Mica



27

Light Silicates
Clay Minerals



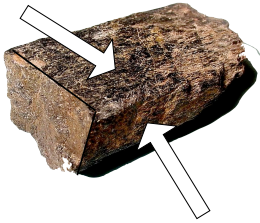
28

Dark Silicates
Olivine



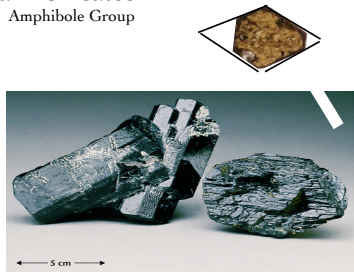
29

Dark Silicates
Pyroxene Group



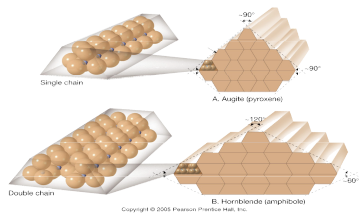
30

Dark Silicates
Amphibole Group



31

Dark Silicates
Amphibole and Pyroxene Groups



32

Dark Silicates
Biotite Mica



33

NONSILICATE MINERALS

34

NONSILICATE MINERALS

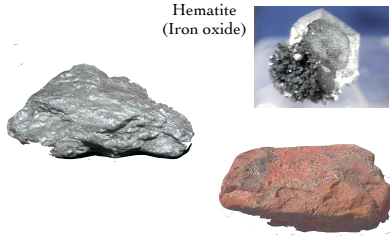
Carbonates



35

NONSILICATE MINERALS

Hematite
(Iron oxide)



36

NONSILICATE MINERALS

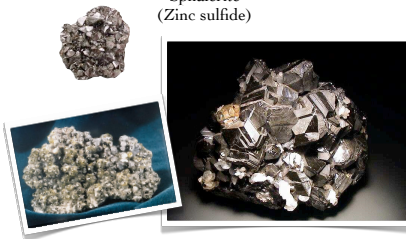
Halite
(Table salt)



37

NONSILICATE MINERALS

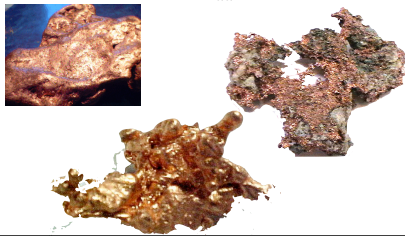
Sphalerite
(Zinc sulfide)



38

NONSILICATE MINERALS

Native Copper



39

NEXT LECTURE

⦿ Igneous Rocks



40
