

Periodic Table of Elements

Element Categories

Lesson 21 - Continued

Lesson 21 had you group elements based on their physical and chemical properties. In the following slides, we will learn about the properties of most of these categories.

Save this packet for future reference!

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Alkali Metals

In Lesson 21: Sodium (Na) and Potassium (K)

- Very reactive metals
- Good conductor of heat and electricity
- Do not occur freely in nature
- Softer than most metals
- 1 electron in outer shell

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Alkaline Earth Metals

In Lesson 21: Magnesium (Mg) and Calcium (Ca)

- Very reactive metals
- Good conductor of heat and electricity
- Do not occur freely in nature
- 2 electrons in outer shell

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Transition Metals

In Lesson 21: Manganese (Mn), Iron (Fe), Nickel (Ni), Copper (Cu), and Zinc (Zn)

- Ductile and malleable - able to change shape without breaking
- Conduct electricity and heat
- Iron and Nickel can produce their own magnetic field

Most have 2 Valence
electrons. → electrons in
outer-most
shell

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Post-transition Metals

In Lesson 21: Aluminum (Al), Tin (Sn), Lead (Pb)

- Sometimes referred to as "poor metals"
- Lower melting and boiling points, and also softer, than transition metals
- Higher boiling points and conductivity than metalloids

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Metalloids

In Lesson 21: Silicon (Si)

- Group that separates the metals from the nonmetals
- Some are **semi-conductors** which means that they conduct heat and electricity only under special conditions

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Nonmetals

In Lesson 21: Carbon (C), Phosphorus (P), Sulfur (S)

- Not able to conduct electricity and heat very well
- Very *brittle*, or easily broken
- Not shiny like metals

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Halogens

In Lesson 21: Fluorine (F), Chlorine (Cl) Iodine (I)

- Non-metals
- Compounds containing halogens are called "salts" (such as NaCl)
- Highly reactive
- 7 electrons in outer shell

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Noble Gases

In Lesson 21: Helium (He), Neon (Ne), Argon (Ar)

- Have full outer electron shells so they don't form compounds very readily
- Because of this, they are referred to as "stable"
- Odorless and colorless

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Actinoids

In Lesson 21: Uranium (U)

- Radioactive and very unstable

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