

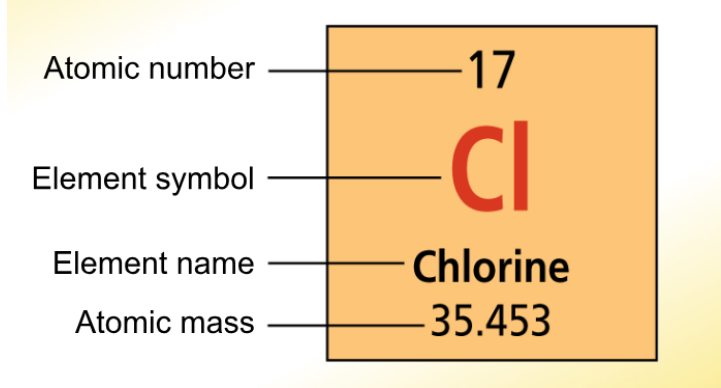
KEY 5.2 The Modern Periodic Table
Honors Integrated Science
Student **Notes**

Name: _____ Date: _____

5.2 The Modern Periodic Table	
Key Ideas	Notes
How are elements on the periodic table related ?	Elements in the same column of the modern periodic table are related but not identical.
How is the modern periodic table organized?	In the modern periodic table, elements are arranged by increasing atomic number (number of protons)
	Properties of elements repeat in a predictable way when atomic numbers are used to arrange elements into groups.
	<i>Period</i> Each row of the periodic table is called a period.
	<i>Group</i> • Each column in the periodic table is called a group or family. • Elements in a group have similar electron configurations, so members of a group in the periodic table have similar chemical properties.
What does the atomic mass of an element depend on?	Atomic mass is a value that depends on the distribution of an element's isotopes in nature and the masses of those isotopes.
	<i>Atomic mass units</i> The mass of an atom in grams is extremely small. To compare masses of atoms, scientist use C-12 isotopes as the standard mass. An amu is defined as one twelfth the mass of a carbon-12 atom.

KEY 5.2 The Modern Periodic Table
Honors Integrated Science
Student **Notes**

Name: _____ Date: _____

Information contained in a square .	
Weighted Averages	To determine the average atomic mass of an element you must multiply the percent abundance by the isotopes mass and add all isotopic data together. Avg amu = (mass 1 x percentage 1) + (mass 2 x percentage 2) +
Class of Elements	State of matter: solid (black), liquid (purple), gas (red) Occurrence in nature: synthetic elements which do not occur naturally (white) General properties: metals (blue background), nonmetals (yellow background), metalloids (green background)
	<i>Metals</i> • Majority of elements on the table are metals (80%) • Good conductors of heat and electricity • Solids at room temperature (except mercury) • Most metals are shiny, malleable, ductile, and lose electrons to become stable
	<i>Transition metals</i> • Metals in middle of table, groups 3-12

KEY 5.2 The Modern Periodic Table
Honors Integrated Science
Student **Notes**

Name: _____ Date: _____

- Form a bridge between elements on right and left side of table
- Can have multiple charges (oxidation states)
- Has the ability to form compounds with distinctive colors
- Forms cations (positive ions)

Nonmetals

- Generally have properties opposite to those of metals.
- Poor conductors of heat and electricity
- Low melting and boiling points due to weak forces of attraction
- Can be solids, liquid, or gas at room temperature
- Brittle, dull, will shatter if hit with force, gains electrons to become stable
- Forms anions (negative ions)

Metalloids

- Located in between the metals and the nonmetals
- Has properties that fall between those of metals and nonmetals
- Properties can be manipulated to behave more or less metallic

How do **properties vary across a period** in the periodic table?

Across a period from left to right, the elements become less metallic and more nonmetallic in their properties.