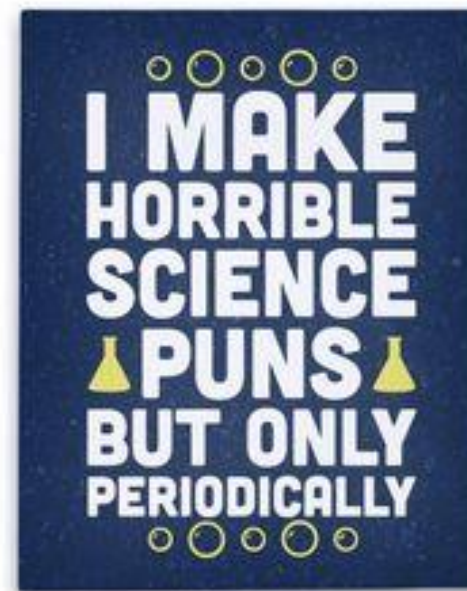


# 7P2A.2



I MAKE  
HORRIBLE  
SCIENCE  
PUNS  
BUT ONLY  
PERIODICALLY

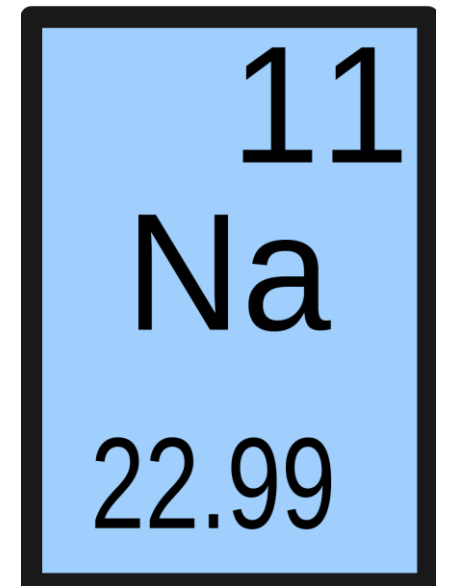
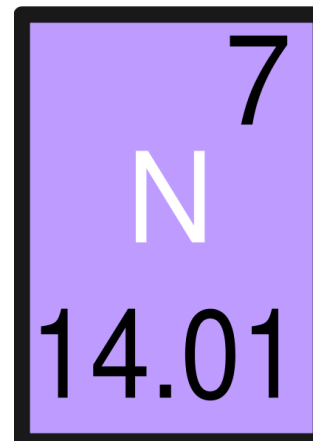
OBTAIN AND USE INFORMATION ABOUT ELEMENTS (INCLUDING CHEMICAL SYMBOL, ATOMIC NUMBER, ATOMIC MASS, AND GROUP/FAMILY) TO DESCRIBE THE ORGANIZATION OF THE PERIODIC TABLE

# The Periodic Table

- ▶ What does it do?
  - ▶ Organize all the elements
- ▶ Every periodic table will have a square for each element with the
  - ▶ Element name
  - ▶ Chemical/element symbol
  - ▶ Atomic number
  - ▶ Atomic mass

# Chemical/Element Symbols

- ▶ Each element has a different symbol
- ▶ Symbols are written with one, two, or three letters
- ▶ The first letter is always capitalized



<b>Element</b>	<b>Symbol</b>	<b>Element</b>	<b>Symbol</b>
<b>Hydrogen</b>	H	<b>Silicon</b>	Si
<b>Carbon</b>	C	<b>Copper</b>	Cu
<b>Nitrogen</b>	N	<b>Aluminum</b>	Al
<b>Oxygen</b>	O	<b>Silver</b>	Ag
<b>Chlorine</b>	Cl	<b>Gold</b>	Au
<b>Magnesium</b>	Mg	<b>Iron</b>	Fe
<b>Zinc</b>	Zn	<b>Helium</b>	He
<b>Calcium</b>	Ca	<b>Potassium</b>	K
<b>Phosphorus</b>	P	<b>Sodium</b>	Na
<b>Iodine</b>	I	<b>Fluorine</b>	F

# Atomic Number

- ▶ The atomic number of an element is equal to the number of **protons**
- ▶ The atomic number is a whole number
- ▶ The atomic number is **always** the same for a given element
- ▶ The elements on the periodic table are *arranged numerically* by increasing atomic number

# Atomic mass

- ▶ The atomic mass is an average sum of the number of the protons and the number of neutrons in the nucleus of the atom
- ▶ Since the atomic mass of an element is an average, it is usually not a whole number

# Period

- ▶ A horizontal row of the periodic table is called a period
- ▶ Think about this:
  - ▶ What do you always end a statement with?
  - ▶ Which way do you write a sentence, vertically or horizontally?

# Families

- ▶ Families, also called GROUPS, are vertical columns of elements on the periodic table
- ▶ They are numbered 1-18
- ▶ Elements in the same family have similar properties





# Metalloids

- ▶ There is a zigzag line on the right side of the periodic table that separates the metals from the nonmetals.
- ▶ Metalloids are found along the zig zag line
- ▶ Elements identified as metalloids have properties (characteristics) of both metals and nonmetals

# Metals

- ▶ Metals are generally located on the left side of the zig zag line
- ▶ Examples of metals are:
  - ▶ Sodium (Na)
  - ▶ Calcium (Ca)
  - ▶ Iron (Fe)
  - ▶ Aluminum (Al)
- ▶ The majority of elements are metals

# Nonmetals

- ▶ Nonmetals, with the exception of Hydrogen (H), are located on the right side of the zig zag line on the periodic table.
- ▶ Examples of nonmetals are
  - ▶ Chlorine (Cl)
  - ▶ Oxygen (O)
  - ▶ Sulfur (S)
  - ▶ Iodine (I)

<b>Chemical Formula</b>	<b>Common name</b>
<b>NaCl</b>	<b>Table Salt</b>
<b>H<sub>2</sub>O</b>	<b>Water</b>
<b>C<sub>6</sub>H<sub>12</sub>O<sub>6</sub></b>	<b>Simple Sugar</b>
<b>O<sub>2</sub></b>	<b>Oxygen Gas</b>
<b>CO<sub>2</sub></b>	<b>Carbon Dioxide</b>
<b>N<sub>2</sub></b>	<b>Nitrogen Gas</b>
<b>Fe<sub>2</sub>O<sub>3</sub></b>	<b>Rust</b>