

Grade 11 NTI Day #7 Chemistry

Please do the following:

(1) Watch this youtube video:

<https://www.youtube.com/watch?v=0qWYatzPH04&list=PL5wpmHJhOEi-i3V7JYsWcWp0hLqybi5Kt&index=3>

(2) Review the slidedeck/presentation (see below). It will match the video presentation above.

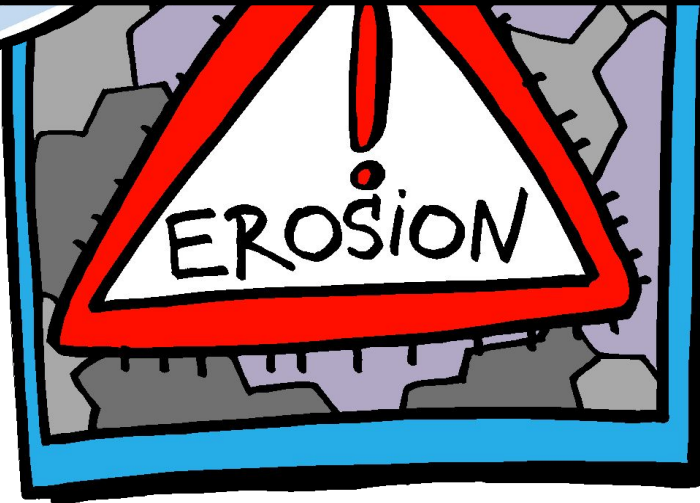
(3) Complete the question sheet below the slidedeck at the end of this document.

If you have any questions, please email me: tyler.hampton@pineville.kyschools.us . This assignment is on Google Classroom. **Please turn it in through Google Classroom.** While you are there, make sure to sign the sign-in sheet. The assignment is also on the school homepage <https://www.pineville.kyschools.us/>. Go to the tab that says, "NTI". Then go to the appropriate day. **However, please turn in the assignment through Google Classroom, even if you access it through the school website.**

Day 3 - Notes

Unit: Introduction to Chemistry

Chemical/Physical Changes and Properties



After today, you should be able to:

- Classify changes as either physical or chemical
- Classify properties of substances as either physical or chemical
- Explain the law of conservation of mass



Pure substances have a *unique set of chemical and physical properties.*

Physical Properties

- Properties that can be measured or observed without changing the identity (or composition) of a substance.
 - The chemical make-up is not changing when these properties are observed!
 - Examples : color, odor, texture, taste, freezing point, melting point, density, mass, hardness...

Chemical Properties

- Properties that indicate how a substance reacts with other substances
 - These properties are only observed when the substance undergoes a chemical change
 - Examples: flammable, combustible, burnable, “reacts with...”

Example: Water

Physical Properties	Chemical Properties
Colorless	Reacts with baking soda
Odorless	Reacts with acid
Liquid at room temp.	Does not react with oil
Tasteless	Not flammable
Freezing point= 0°C	
Boiling point= 100°C	
Flows	

Physical Changes

- Changes in appearance without changing composition
 - Examples: cutting, breaking, pulverizing
 - Changes in state such as: melting, freezing, boiling, subliming (going from a solid → gas)

Chemical Changes (Reactions)

- One or more substances react to form new substances with different chemical and physical properties
 - The beginning substance is different than the ending substance.
 - Examples: Rusting, burning, corrosion, digestion, respiration, decaying

Chemical Changes (cont.)

- All chemical reactions can be described by a chemical equation.

Reactants → Products

Iron + Oxygen → Iron (III) Oxide **Word Equation**

$\text{Fe} + \text{O}_2 \rightarrow \text{Fe}_2\text{O}_3$ **Formula Equation**

“yields”



Law of Conservation of Mass

- Law of Conservation of Mass - In any chemical or physical change, matter cannot be created or destroyed.

Mass Reactants = Mass Products

Hydrogen + Oxygen → Water

10 grams + 5 grams → 15 grams



Do now: *Complete and*
Turn in “Exit Ticket”

Then: Begin WS 3 (Homework)

Day #7 Questions

Multiple-Choice Questions

1. Which of the following is a physical property of a substance?
 - a) Flammability
 - b) Reactivity with acid
 - c) Density
 - d) Combustibility

2. Which of these is an example of a physical change?
 - a) Burning wood
 - b) Rusting iron
 - c) Melting ice
 - d) Digesting food

3. What happens during a chemical change?
 - a) The substance's composition remains the same.
 - b) New substances with different properties are formed.
 - c) The substance undergoes a change of state, like freezing or boiling.
 - d) The substance breaks apart into smaller pieces without altering its chemical identity.

Short Answer Question

4. How can you differentiate between a physical and a chemical change? Provide one example of each.