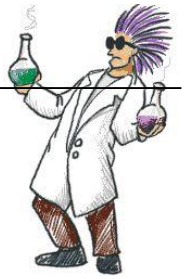
WELCOME TO...
RADER'S CHEM4KIDS! EXTENSION LAB

Name_____



Directions:

- Type the following link in the address bar: http://www.chem4kids.com/files/matter_intro.html
- Make sure you are in the Matter section and read the information.
- As you get to the bottom of a page, click next page in Matter to go on to the next.
- Answer the following questions as you read- they are in order:

1) What is the name of the 5th state of matter that we did not study? _____

2) Describe or define this 5th state of matter as best as you can. It gets easier towards the end of the description.

_____

_____

3) Under States of matter, according to the test, when a turkey is coking, "You are able to smell the volatile compounds that are mixed in the air around you."
*-Using context clues try to define **volatile** as best as you can.*

_____

-Volatile has more than one definition. Look it up and write the definition that fits this text.

_____

Now that you understand the word volatile, does the text make more sense to you? _____

4) Under Plasmas in The Sun, fill in the description for plasma.
Plasmas are highly energized [ ] *that have lost their* [ ]*. Stars, including the* [ ] *are covered in* [ ]*.*

4) What needs to happen for matter to change states? (Use the Topics Column: Phase Change I)
*- All matter can move from one **state** to another. It may require extreme* [ ] *or extreme* [ ]
- The text says, "***Phase changes** happen when you reach certain special points."*
*- What did the text mean by certain special points?*_____

_____

5) What are the chemistry terms for the following:

Solid to a Liquid	=	
Liquid to a Solid	=	
Liquid to a Gas	=	
Gas to a Liquid	=	
Solid to a Gas	=	
Gas to a Solid	=	

6) How is plasma made? (Use the Topics Column: Phase Change II)

- Plasma can be made from a ____ *if a lot of* ____ *is pushed into the gas. In the case of neon, it is* ____ *energy that pulls the electrons off. Without the* ____ *to energize the atoms, the neon* ____ *returns to its gaseous state.*

-According to the text, for a gas to phase change into a plasma, it must ionize! Click on ionize, read this entire page and write your best definition of ionize!

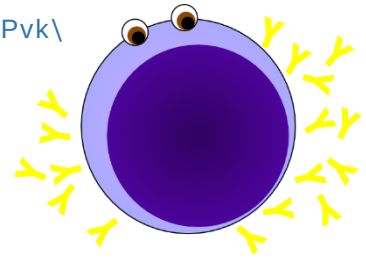
_____

_____

-Do you now understand the term ionize? _____ *Try and find a video, that has a more easy to understand explanation of ions, ionization, or ionize. Use your school email account to email the link to your teacher.*

7) Play the video on the Aurora Borealis. https://youtu.be/PaSFAbATPvk\

What state of matter is the aurora? _____



8) What is an isomer? (Use the Topics Column: Chem-Phys)

- Isomers have the ____ ____ *with different* ____ *Even though they are made of the same atoms, they have very* ____ *shapes* ____ *have atoms bonded in different orders.*

- Butane and isobutene are both isomers. Their formula is as follows. C_6H_7NO. *In the two boxes below, do your best to draw a model of each isomer.*

Butane

Isobutane

10) Your body uses a chemical reaction to change galactose molecules into a kind of molecule it can use.

- What is this molecule your body uses to get energy? ____

11) What is the difference between a physical and a chemical change of matter?

(Use the Topics Column: Chem-Phys)

- Physical changes are usually about physical ____ *of* ____ *or* ____ *changes.*

- Write one example of a physical change. _____

_____

-Chemical changes happen on a ____ *level when you have two or more* ____ *that interact. Chemical changes happen when* ____ *are broken or created during chemical* ____

- Write one example of a chemical change. _____

_____

- Chemical Reactions (changes) occur when two or more ____ *interact and the molecules change. Bonds between* ____ *are broken and created to form new* ____

If you are lost, click on the following link. http://www.chem4kids.com/files/matter_solid.html

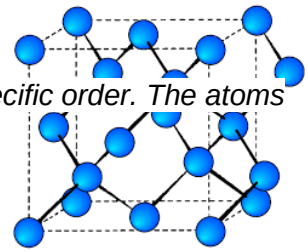
12) What is a heterogeneous mixture? (Use the Topics Column: Solids)

- According to the text, heterogeneous mixture mixtures have different concentrations of compounds in different areas of the mixture. Please rewrite this so it is easier to understand.

_____

13) What is a crystal? (Use the Topics Column: Solids)

- A crystal is a form of ____ *where the* ____ *are arranged is a very specific order. The atoms are arranged in a regular repeating* ____ *called a* ____



14) Wow a diamond is a special kind of crystal called an allotrope. What in the world is an allotrope?

- If the text is not very clear, try to find a very simple and clear explanation of an allotrope.

_____

15) What is a solution? (Use the Topics Column: Liquids)

- Different types of molecules ____ *in a liquid, it is called a* ____

16) What is happening when something is compressed? (Use the Topics Column: Liquids)

- When you compress something, you take a certain amount of ____ *and* ____ *it into a smaller* ____ *or* ____ *. You force the* ____ *closer together.*

17) According to the text, Many shock absorbers found in cars and trucks have compressed liquids, such as oils, in sealed tubes. The shocks are called dampening device.
-Using context clues only, define dampening.

_____

- Could you use anything else in a dampening device besides a liquid? _____

- What specific substance do you feel could be used to make superior dampening device?

_____

18) What is cohesion? (Use the Topics Column: Liquids)

_____

_____

-Watch the following videos on cohesion.
https://www.youtube.com/watch?v=ynk4vJa-VaQ https://www.youtube.com/watch?v=6KKNnjFpGto

-Write a sentence that explains how you feel about the term cohesion after watching these clips.

_____

_____

19) What is the difference between a vapor and a gas? (Use the Topics Column: Gases)
-Vapor and [ ] *mean the* [ ] *thing. The word* [ ] *is used to describe gases that are usually* [ ] *at room* [ ]

20) What state of matter was created in 1995? (Use the Topics Column: BE Condensate)

[ ]

21) Why do we say this new state of matter can form a "super atom"? (Use the Topics Column: BE Condensate)

_____

22) After reading this section about all that coldness and clumping, what so you think would be the opposite state of matter of a Bose-Einstein Condensate? _____
-Please explain: _____

_____

23) What is an alloy? (Use the Topics Column: Mixtures II)

- An [ ] *is a* [ ] *of two or more* [ ] .

*- Why would you **not** want to us an alloy called an **amalgam** to create artificial bones or hip joints?*

_____

24) According to the text emulsions are a type of colloid. Why might someone think the example of oil and water does not seem like a colloid? *You may seek out a few friends to come up with your answer.*

_____

_____

25) Fill in the chart with the missing information: (Use the Topics Column: Solutions I)

SOLUTION	EXAMPLE
Gas-Gas	
Gas-Liquid	
Gas-Solid	
Liquid-Liquid	
Liquid-Solid	
Solid-Solid	

26) What is a colloid? (Use the Topics Column: Solutions I)

Colloids are [ ] with bigger particles. [ ] are usually foggy or milky when you look at them. In fact, milk is an [ ] **colloid**.

Now take some quizzes:

1) Type the following into the address bar: http://www.chem4kids.com/extras/quiz_matterintro/ (General Matter Quiz) Score: _____/10
2) Type the following into the address bar: http://www.chem4kids.com/extras/quiz_mattermix/index.html (Mixtures Quiz) Score: ___/10
3) Type the following into the address bar: http://www.chem4kids.com/extras/quiz_mattersolution/index.html (Solutions Quiz) Score:__/10