

Research for Chemistry 20

Name _____ Partner _____

Category _____ Topic _____

Categories

1. Gas Laws:

Choose at least two technological applications of ideal gas laws or combined gas law application

- Some suggested technological applications include: Hot air balloons, gas powered vehicles, blood gases in deep sea diving, carbonated beverages, tire pressures, breathing at high altitudes, aerosol cans, air bags, air brakes, internal combustion engine, oxygen saturation in lakes and rivers, etc
- Describe hazards or limitation of your chosen technology (consider temperature, pressure, reaction vessels, gases used, etc)
- Provide evidence for whether the gas(es) are acting in an IDEAL or real manner.
- What are the benefits of your technological applications?
- What are the drawbacks to the use of your technology?

2. Bonding:

Choose a minimum of three chemicals (can include elements and compounds) that exhibit a wide range of bonding forces.

- Build 3-d models
- Discuss the intermolecular and intramolecular bonds for each chemical. Explain how these forces are related to the chemical and physical properties of each chemical
 - physical properties include such things as state, solubility, melting point etc
 - chemical properties include such things as reactivity
- Provide real life uses for the chemicals chosen

3. Solutions:

Thousands of household and commercially used products are sold as solutions. Choose a minimum of two types of solutions: (alloys, medications, cleaners, drinks, cosmetics, fuels, etc)

- Identify the solute and solvent
 - Explain the type(s) of bonding that allow for dissolving
- Express and explain the method of expressing the concentration of the solution. (ppm, mol/L, w/V, %, etc)
- Give uses for the solution
 - Commercial and domestic uses may differ. Touch on both types of use.
- Discuss the history and futuristic uses of the solutions.
- Describe environmental, economic, political, health concerns and benefits for use of the solution(s)

4. Acids and Bases

Acids and bases can be both our friend and/or our foe

- Choose a minimum of two chemicals – both bases or both acids or one acid and one base
- Identify one as a friend and describe in detail how it helps mankind and/or individuals.
 - Give specific benefits (economic, ecological, personal, etc)
- Identify one as a foe and describe in detail how it hinders mankind and/or individuals.
 - Give specific issues that result from the use of the chemical.
- Describe the production of your chosen chemicals.
- Describe the historical and futuristic uses of your chemicals.

Specifications for Presentation:

1. Work on your own **or** with ONE partner.
2. Make a presentation on your chosen topic: format is to be determined by you. Length of presentation must be 5 --> 10 minutes
3. Convince us that you understand the topic thoroughly
4. Be prepared to answer questions that relate to your topic. This means you need to do WIDE research and anticipate what will be asked as SPIN off questions
5. Provide us with an ACTIVITY relating to you topic. It can be a game (computer based or paper and pencil game), a quiz, a lab, a word search, etc. You want to enhance our LEARNING.
 - Don't bore us!
 - If things need to be "RUN OFF" for the class, I need them a minimum of one day before your presentation to get them ready.

This presentation will be assessed by two of your peers and by your instructor.
You will be asked to assess other's work as well.

Marking rubric

Name of presenter(s): _____

Topic: _____

Assessed by: _____

	Demonstrates <u>high</u> level of completion	Demonstrates <u>adequate</u> level of completion	Demonstrates <u>limited</u> level of completion	Comments
Evidence of thorough research & NO evidence of plagiarism	5 4	3 2	1 0	
Addressed all parts of the assignment	5 4	3 2	1 0	
Appropriate length	2	1	0	
Audible and good eye contact with audience	4 3	2 1	0	
Addressed questions adequately	4, 3	2 1	0	
Activity: challenging, entertaining, meaningful	5 4	3 2	1 0	
Unique ideas that set your presentation apart from the others.	2	1	0	

Total mark out of a possible 27 marks: _____

Gas Laws websites

<http://en.wikipedia.org/wiki/Gas>

http://www.engineeringtoolbox.com/gas-air-systems-t_22.html

<http://www.answers.com/topic/gas>

Solution web sites

<http://en.wikipedia.org/wiki/Solution>

<http://www.chemistryexplained.com/Ru-Sp/Solution-Chemistry.html>

<http://en.wikipedia.org/wiki/Alloy>

<https://www.chem.purdue.edu/gchelp/solutions/character.html>

<https://www.bioedonline.org/slides/content-slides/chemistry/>

<http://www.chem.purdue.edu/gchelp/solutions/eboil.html>

Bonding web sites

http://en.wikipedia.org/wiki/Chemical_bonding

Acid web sites

<http://www.indiamart.com/agroha/industrial-solvents.html>