SCH 3U1 

**Independent Study Project – Gases**

Gas - this third state of matter plays a critical role in our lives. Not only are gases necessary for our human survival, but gases have proven to be an extremely interesting phenomenon to chemists as they exhibit a wide variety of chemical behaviors which have made them useful in a wide range of technological applications. The purpose of this ISP is to allow you to look at a phenomenon related to gases and to explain the **chemistry** behind their existence.

**Suggested topics:**

1. Hot air balloons – how do they work?
2. Airships – how do they fly?
3. Freeze-dried foods – what is the chemistry behind them?
4. Medicine – how are gases used in anesthesia?
5. Scuba diving – what should you be aware of before you dive in?
6. Rockets – how do they work?
7. The auto industry – how do airbags work?
8. Mountain climbing – what should you know about gases before you start climbing?
9. A topic of your choice as related to gases (just check with your teacher first.)

Choose one of the topics above, or one of your own (with teacher approval) and present your information to a specific audience in **the format of your choice**.

You can choose from:

* power point presentation
* prezi presentation
* web page
* brochure
* poster
* information sheet

Your presentation must be **directly related** to our study of gases. Don’t get side-tracked…remember that you are explaining a phenomenon and its relation to the **properties** of gases.

**Be sure to also include a works cited list**

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| **Gas ISP Rubric** | | | | |
| **Categories** | **Level 1 (50 - 59%)** | **Level 2 (60 - 69%)** | **Level 3 (70 - 79%)** | **Level 4 (80 - 100%)** |
| **Knowledge and Understanding -knowledge of relevant sources and material for presentation SI2.02** | -demonstrates limited knowledge of relevant sources and material for presentation | -demonstrates some knowledge of relevant sources and material for presentation | -demonstrates considerable knowledge of relevant sources and material for presentation | -demonstrates thorough knowledge of relevant sources and material for presentation |
| **Thinking - analysis of how gas properties are linked to their particular application** | -  analyzes how gas properties are linked to their particular application with some effectiveness | -  analyzes how gas properties are linked to their particular application with limited effectiveness | -  analyzes how gas properties are linked to their particular application with considerable effectiveness | -  analyzes how gas properties are linked to their particular application with a high degree of effectiveness |
| **Communication -expression and organization of information SI1.11** | -expresses and organizes information with limited effectiveness. | -expresses and organizes information with some effectiveness | -expresses and organizes information with considerable effectiveness | -expresses and organizes information with a high degree of effectiveness |
| **Application -makes connections between researched information and intended audience SI1.10** | -makes connections between researched information and intended audience with limited effectiveness | -makes connections between researched information and intended audience with some effectiveness | -makes connections between researched information and intended audience with considerable effectiveness | -makes connections between researched information and intended audience with a high degree of effectiveness |

Note: A student whose achievement is below Level 1 (50%) has not met the expectations for this assignment or activity.