Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Molecules in our world project

Goal: The idea for this project is to create a sheet which presents information about two or three molecules associated with a **particular outdoor place** (beach, forest, farm, etc.) This sheet will be used by students in the art class to create a drawing based on your molecules.

Criteria for choosing molecules.

If you wish to go outside these guidelines, check with the instructor. All should be pure compounds - no mixtures.

Choose 1 small and two medium molecules OR 1 small and 1 large molecule:

* Small molecules should have at least 2 elements and fewer than 5 non-hydrogen atoms.
* Medium molecules should have at least 3 elements and between 5 and 12 non-hydrogen atoms.
* Large molecules should have at least 4 elements and more than 12 non-hydrogen atoms.

Required elements – Your sheet should include the information listed below for each molecule:

* Structures – there should multiple representations of the chemical structure of the compounds. All should be original drawings, except for the 3D, which can be original or online (in which case, you should cite it). Here are the representations to use:

Molecular formula, condensed formula, Lewis structure, skeleton structure, ball and stick structure (with or without hydrogen atoms bonded to carbon), and a 3D structure (this need not be original).

* Basic information: compound's name, molecular weight (molar mass)
* Location – Where can this chemical be found? You may include locations not related to your outdoor place.
* Role – what is the chemical used for? What made it interesting for you?
* Aliases – does this chemical have other names?
* Properties – What physical and chemical properties does this chemical have? (not all properties are applicable to all chemicals). Some ideas are: reactivity, toxicity, flammability, chemical stability, taste, acid or base(alkaline), polarity and others you can find (be sure to put them in language other students can understand, in case they are not familiar with the terms you use).
* State – what is the physical state of the chemical – solid, liquid or gas?
* Sources – there should be three or more sources of information, accurately cited.
* Name – put your name on the sheet.

Ideas for molecules:

Scents (grass, ocean, foods, etc).

Flavors

Monomers of larger molecules

Amino acids (proteins)

saccharides (sugars used to make cellulose)

There are several links to ideas for molecules at

<http://tinyurl.com/EHHS-art-chem> **[**

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| --- | --- | --- | --- | --- |
|  | 10 | 8 | 6 | 4 |
| Required elements | The sheet includes all required elements as well as additional information. | At least seven required elements are included on the sheet. | At least 5 of the required elements are included on the sheet. | More than 4 required elements were missing. |
| Creativity | The sheet reflects an exceptional degree of student creativity in their creation and/or display. | Most of the sheet elements reflect student creativity in their creation and/or display. | The sheet reflects some student creativity in their creation and/or display. | The sheet reflect little student creativity in their creation and/or display. |
| Attractiveness | The sheet is exceptionally attractive in terms of design, layout, and neatness. | The sheet is attractive in terms of design, layout and neatness. | The sheet is acceptably attractive though it may be a bit messy. | The sheet is distractingly messy or very poorly designed. It is not attractive |
| Accuracy | At least 10 accurate facts are displayed on the sheet. | 7-9 accurate facts are displayed on the sheet. | 5-7 accurate facts are displayed on the sheet. | Fewer than 5 accurate facts are displayed on the sheet. |
| Mechanics | Capitalization, spelling and punctuation are correct throughout the sheet. | There is 1 error in capitalization, spelling or punctuation. | There are 2 errors in capitalization, spelling or punctuation. | There are more than 2 errors in capitalization, spelling or punctuation. |
| Use of class time |  Focused on getting the project done. Never distracted others. | Usually focused on getting the project done and never distracted others. |  There was some focus on getting the project done but occasionally distracted others. | Did not use class time to focus on the project OR often distracted others. |
| Sources | More than three sources (information and graphics) are accurately documented. | Three sources (information and graphics) are accurately documented or one is not accurate. | Two sources (information and graphics) are accurately documented. | Most sources are not accurately documented. |