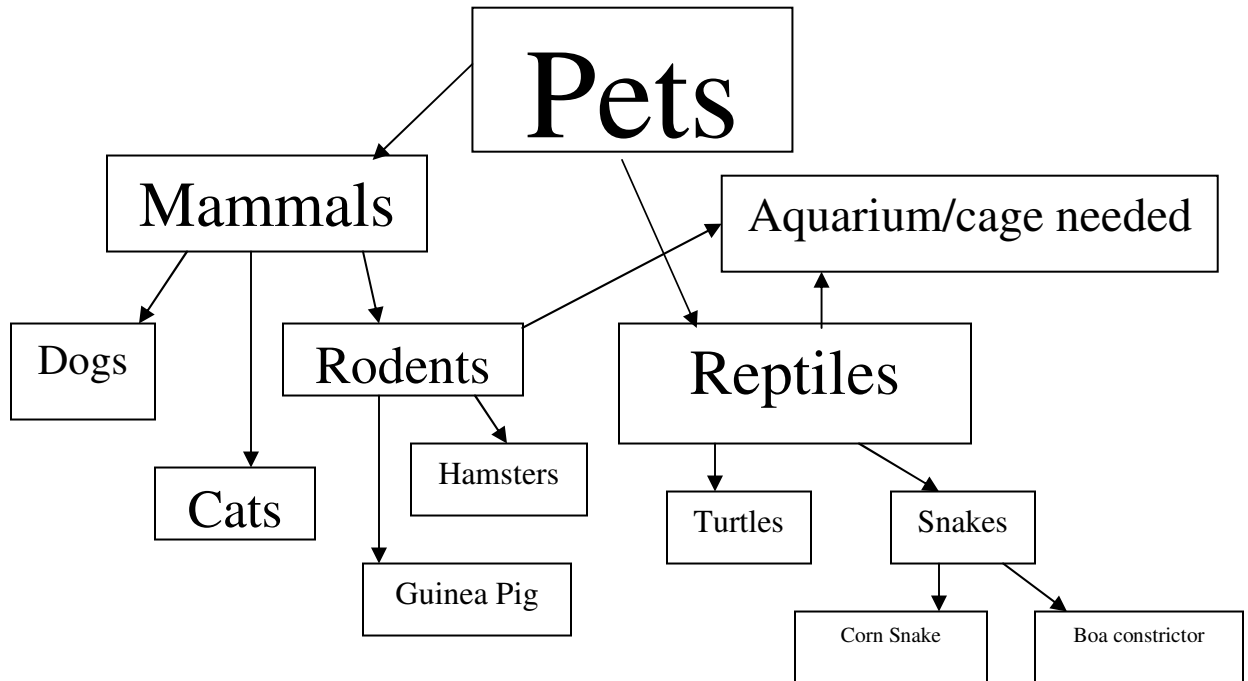


## Substances Concept Map: Project

**Background:** We have been studying different substances. We learned about different characteristics of these substances, their relationship to the periodic table, and their relationship to each other. To extend your understanding of different substances you will put together a graphic organizer, specifically a concept map, for the concepts we have learned.

**An example of a simple concept map:**



### Characteristics of concept maps:

- Boxes (or circles or other shapes) can be used to highlight and separate concepts.
- Concept maps have hierarchy. This means that the main ideas are written larger and examples and sub-ideas are written smaller.
  - In this example, “Pets” is the heading or main idea so it is written largest. The two categories of pets are “mammals” and “reptiles” so they are written with large letters, but not as big as the “Pets”.
- Arrows point from the larger concept to the smaller concept. Specific examples are on the edges or end of the concept map.
- It is possible for a concept/idea to have more than one arrow pointing to it. So, do not write a key idea more than once on the concept map, just connect it to more ideas.
  - In this example, an arrow points from the rodents AND the reptiles to the aquarium/cage needed concept.
- Color coding is a great idea and many people use different colors to indicate different levels of importance to concepts and to connect concepts with different color arrows.

### The concepts necessary for this project:

The concepts we will use: **Substances** will be our main topic. Our different main substances will be **Elements**, **Compounds**, and **Mixtures** (all on the second level). Stemming from Elements we have the concepts of **Radioactive**, **Non-Metals** and **Metals**.

## Your Task:

1. Create a rough draft of the structure of your concept map. You should include the 6 concepts described and appropriately connect them.

**Rough Draft Due:** \_\_\_\_\_

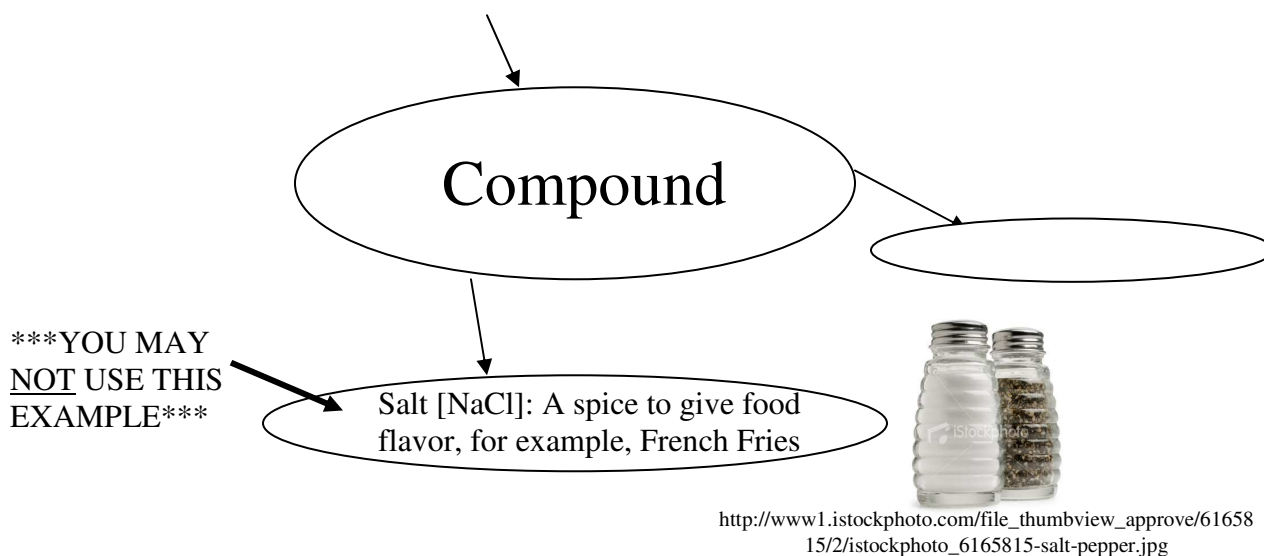
2. Research specific examples of each concept.
  - a. For each concept, you must find 2 examples of substances. So, you will have 10 different examples in all.
  - b. Each example will include a picture and a description of its use in the “real” world. Do your best to find specific examples that relate to you. Consider the products you (and your family) use, the food you eat, the instruments and games you play, sports equipment you use and other hobbies or materials you use or exist around you.
  - c. For each example, find the most important elements contained in the substance. Include the element symbol and/or compound formula as needed. Explain the purpose of those elements.

**Research Time in Class:** \_\_\_\_\_

3. As you research, you must keep a list of all sources you use. This bibliography of sources should be taped or glued to the back of your final concept map. Please use MLA format.
4. The two examples for each concept (including elements, formulas, uses and pictures) will be included on your final concept map. Pictures can be hand-drawn or printed from the Internet (you must cite the website for each picture used). [My recommendation is to print the website in small letters (or type and glue) next to each picture.]

**For full credit, examples selected should be unique.**

Here is an example of a single item on the concept map:



5. Submit this rubric with your concept map (and the sources on the back of the poster).

**Final copy of the concept map, rubric and sources is due:** \_\_\_\_\_





3. Select the two most interesting or unique examples of each type of substance to go on your final concept map poster. For each, note the element symbol, compound formula or substances that make up the mixture, note at least one use of that substance, locate or draw a picture representing that use (with source citation if not hand-drawn).

Use this Checklist:

Check Off	Section of Concept Map
	First non-metal element = _____ Did you include: Element symbol? Real-life use? Picture? Source citation for picture, if not hand-drawn?
	Second non-metal element = _____ Did you include: Element symbol? Real-life use? Picture? Source citation for picture, if not hand-drawn?
	First metal element = _____ Did you include: Element symbol? Real-life use? Picture? Source citation for picture, if not hand-drawn?
	Second metal element = _____ Did you include: Element symbol? Real-life use? Picture? Source citation for picture, if not hand-drawn?
	First radioactive element = _____ Did you include: Element symbol? Real-life use? Picture? Source citation for picture, if not hand-drawn?
	Second radioactive element = _____ Did you include: Element symbol? Real-life use? Picture? Source citation for picture, if not hand-drawn?
	First compound = _____ Did you include: Compound formula? Real-life use? Picture? Source citation for picture, if not hand-drawn?
	Second compound = _____ Did you include: Compound formula? Real-life use? Picture? Source citation for picture, if not hand-drawn?
	First mixture = _____ Did you include: Names of all components? Real-life use? Picture? Source citation for picture, if not hand-drawn?
	Second mixture = _____ Did you include: Names of all components? Real-life use? Picture? Source citation for picture, if not hand-drawn?
	Full MLA bibliography for all information included on poster. (Picture source citation can be put on the front of your poster. Other source citations should be attached to the back of your poster.)

### Substances Concept Map Rubric

	0 points	1 point	2 points	3 points
<b>Mapping</b>	Missing	Many problems with hierarchy or mapping attempted, but failed to show understanding	Some unreasonable or missing connections or unclear hierarchy	Substances are connected logically and show hierarchy
<b>Non-Metal Elements:</b>				
<b>Examples</b>	Missing	Missing substantial identification	Missing one example, but other is complete OR incomplete elements OR lacking originality	Both examples reasonable and unique; elements identified with name and symbol
<b>Uses</b>	Missing	Missing one use for an example OR Incomplete OR unreasonable uses	Unclear uses provided OR lacking sufficient detail	At least one clear, reasonable & detailed use provided for each example
<b>Pictures</b>	Missing	Missing a picture for one example OR inappropriate picture	Pictures provided for both examples, but missing source citation	Picture provided for both examples with source, if necessary
<b>Compounds:</b>				
<b>Examples</b>	Missing	Missing substantial identification	Missing one example, but other is complete OR incomplete elements OR lacking originality	Both examples reasonable and unique; elements identified with name and symbol
<b>Uses</b>	Missing	Missing one use for an example OR Incomplete OR unreasonable uses	Unclear uses provided OR lacking sufficient detail	At least one clear, reasonable & detailed use provided for each example
<b>Pictures</b>	Missing	Missing a picture for one example OR inappropriate picture	Pictures provided for both examples, but missing source citation	Picture provided for both examples with source, if necessary
<b>Mixtures:</b>				
<b>Examples</b>	Missing	Missing substantial identification	Missing one example, but other is complete OR incomplete elements OR lacking originality	Both examples reasonable and unique; elements identified with name and symbol
<b>Uses</b>	Missing	Missing one use for an example OR Incomplete OR unreasonable uses	Unclear uses provided OR lacking sufficient detail	At least one clear, reasonable & detailed use provided for each example
<b>Pictures</b>	Missing	Missing a picture for one example OR inappropriate picture	Pictures provided for both examples, but missing source citation	Picture provided for both examples with source, if necessary
<b>Radioactive Elements:</b>				
<b>Examples</b>	Missing	Missing substantial identification	Missing one example, but other is complete OR incomplete elements OR lacking originality	Both examples reasonable and unique; elements identified with name and symbol
<b>Uses</b>	Missing	Missing one use for an example OR Incomplete OR unreasonable uses	Unclear uses provided OR lacking sufficient detail	At least one clear, reasonable & detailed use provided for each example
<b>Pictures</b>	Missing	Missing a picture for one example OR inappropriate picture	Pictures provided for both examples, but missing source citation	Picture provided for both examples with source, if necessary
<b>Metals:</b>				
<b>Examples</b>	Missing	Missing substantial identification	Missing one example, but other is complete OR incomplete elements OR lacking originality	Both examples reasonable and unique; elements identified with name and symbol
<b>Uses</b>	Missing	Missing one use for an example OR Incomplete OR unreasonable uses	Unclear uses provided OR lacking sufficient detail	At least one clear, reasonable & detailed use provided for each example
<b>Pictures</b>	Missing	Missing a picture for one example OR inappropriate picture	Pictures provided for both examples, but missing source citation	Picture provided for both examples with source, if necessary
<b>Concept Map:</b>				
<b>Works cited</b>	Missing	Incomplete source citations	Missing some sources OR list only website URLs visited without other information	All sources cited using MLA formatting. Picture sources are separated from information sources.
<b>Creativity and Neatness</b>	Difficult to read	Some attempt made	Missing one of these or slight formatting problems	Very creative, neat and easy to read
<b>Deadlines &amp; Class time</b>	Missed many OR wasted class time	Missed two deadlines OR unprepared for work time during class	Missed one deadline OR could have used class time better one day	All deadlines met & very productive use of class time

**Your Grade:** \_\_\_\_\_ / 57      (34.5 / 57 = minimal proficiency)