Introduction to Concept Mapping

Constructing a concept map is a process that can be extremely beneficial to learning/understanding complex information. Biology is fun and challenging, in part, because it is a web of ideas with many unifying themes rather than a simple progression through detail. Concept mapping creates a diagram that represents the "big picture" with regard to a particular concept or problem, and at the same time includes a level of detail that allows you to organize and prioritize information in meaningful ways. Just as a road map allows you to find a particular destination by various routes, a concept map reflects the array of learning paths that lead to understanding. However, a concept map differs from a road map in that it is very personal; the contents and organization are based on your knowledge and experience. The concept map constructed by another student is expected to be different because everyone brings a slightly different set of experiences and knowledge to the process. And yet the result is the same: the concept map helps you structure your understanding of a topic and create personal meaning.

Each map represents your understanding at the time, based on your knowledge and experience at the time. If you were to construct a concept map on the same subject again at a later date, we would expect a different representation of your understanding (just as road maps are updated and revised). There is no "right" or "wrong" concept map. However, concept maps may be more or less valid, and therefore they vary in their usefulness. Sharing and talking through your concept map is a good way to assess your understanding.

I suggest using the following steps to construct any concept map:

1. List all of the key ideas or concepts.
2. Sort the concepts (written inside circles or boxes) according to their level of relative importance. (Broad concepts are located at the top of the map, supporting concepts are arranged below.)
3. Arrange the concepts in meaningful clusters (of equal importance) or columns (in rank order of importance).
4. Connect related concepts by lines or double-headed arrows.
5. Add labels to these connections (lines) so that the map may be "read" like a sentence from top to bottom and/or from side to side. These labels will clarify relationships between concepts. (Do not use negative terms such as "not", "non-", or "no").

Please see the example of a concept map constructed by a Bio 101 student, which describes his understanding of the Modern Synthetic Theory of biological evolution.