Literacy Strategies
Concept Mapping

Graphic organizers have proven to be powerful learning tools in the science classroom. The use of graphic metacognitive techniques for improving learning has yielded successful results for both teachers and students (Trowbridge & Wandersee, 1998.) One such graphic organizer for learning content material is the ***Concept map***.

Concept mapping, among many other things, allows teachers and students to organize concepts and determine the relations between concepts. This enables a teacher or student to work with concepts and propositions as opposed to the rote memorization of facts.

Concept maps are both evocative and generative. That is they help evoke prior knowledge and help generate or construct new knowledge. ***Concept mapping*** is particularly useful in the science classroom. There are several steps in the construction of ***Concept maps.***

Steps in Concept Map Construction
1. Select several concepts from the content material (8-12 preferable).
2. Write each concept on a separate post-it or card.
3. Select an organizing concept or main idea concept to be placed at the top of the map.
4. Arrange the other concepts in a distinct hierarchy under the organizing concept.
5. Draw lines between related concepts adding linking words that explain relationships.
6. Review and Reflect. Once satisfied with the arrangement of the concepts on the map, construct a final map.

From Theory-Driven Graphic Organizers in Teaching Science for Understanding: A Human Constructivist View, p. 119.

When setting up the hierarchy, concepts should be arranged from general to specific, from top to bottom on the map. Revisions are easily accomplished because individual concepts have been written on separate post-its or index cards.

While students can individually construct maps, ***Concept mapping*** lends itself well to small group work. It is important that sufficient time is allowed to work with major and minor concepts and to continue the process of gathering information. The lines that connect concepts and the linking words that explain relationships are important components of the ***Concept map***.

Concept maps require that students are aware of main ideas and supporting details, that they understand the relationships between them, and that they are able to use them appropriately. Knowledge of technical and general vocabulary is also necessary for map construction. The ***Concept map*** is a valuable learning tool, particularly for those students whose learning styles and study habits are best served by visual organization of the content material to be learned.

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Assessment:

Analyzing student-constructed **Concept maps** allows a teacher to assess the student's understanding of the lesson or reading associated with a particular topic. A rubric can be developed to score the concept map, and it may be used for formative evaluation. **Concept maps** make excellent documents to include in a student's portfolio.

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