

## PROFESSIONAL REFERENCE FOR TEACHERS

### ● Concept Mapping

Too often, students are able to master the individual elements of a topic without truly grasping the “big picture.” If students fail to understand how the elements fit together or relate to one another, they cannot truly comprehend the topic.

Concept mapping is a very effective method of helping students see how individual ideas or elements connect to form a larger whole. Concept maps are a highly effective tool for helping students make those logical connections.

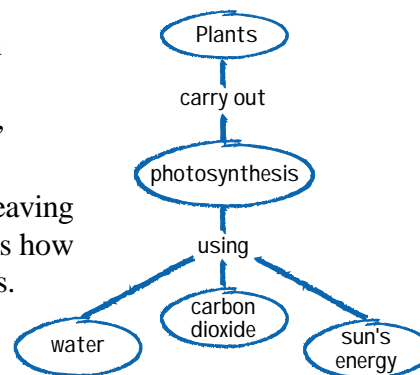
The most effective concept maps are those that students construct on their own. Used in this way, concept maps are both a self-teaching system and a diagnostic tool. To construct a proper concept map, the student must first examine closely his or her mental model of the topic at hand. Any flaws or shortcomings in that model will be reflected in the concept map.

Concept maps are flexible. They can be simple or highly detailed, linear or branched, hierarchical or cross-linked, or they can contain all of these major elements. Students can construct their own maps from scratch or can finish incomplete maps. Concept maps can take almost any form as long as they are logically arranged.

### Making Concept Maps

The steps involved in making a concept map are outlined below.

1. Make a list of the concepts to be mapped.  
Concepts are signified by a noun or short phrase equivalent to a noun.
2. Choose the most general, or the main, idea.  
Write it down and circle it.
3. Select the concept most directly related to the main idea. Place it underneath the main idea and circle it. If two or more concepts bear the same relationship to the main idea, they should be placed at the same level.
4. Draw a line between the related concepts, leaving a space for a short action phrase that shows how the concepts are related. These are linkages.
5. Continue in this way until every concept in the list is accounted for.



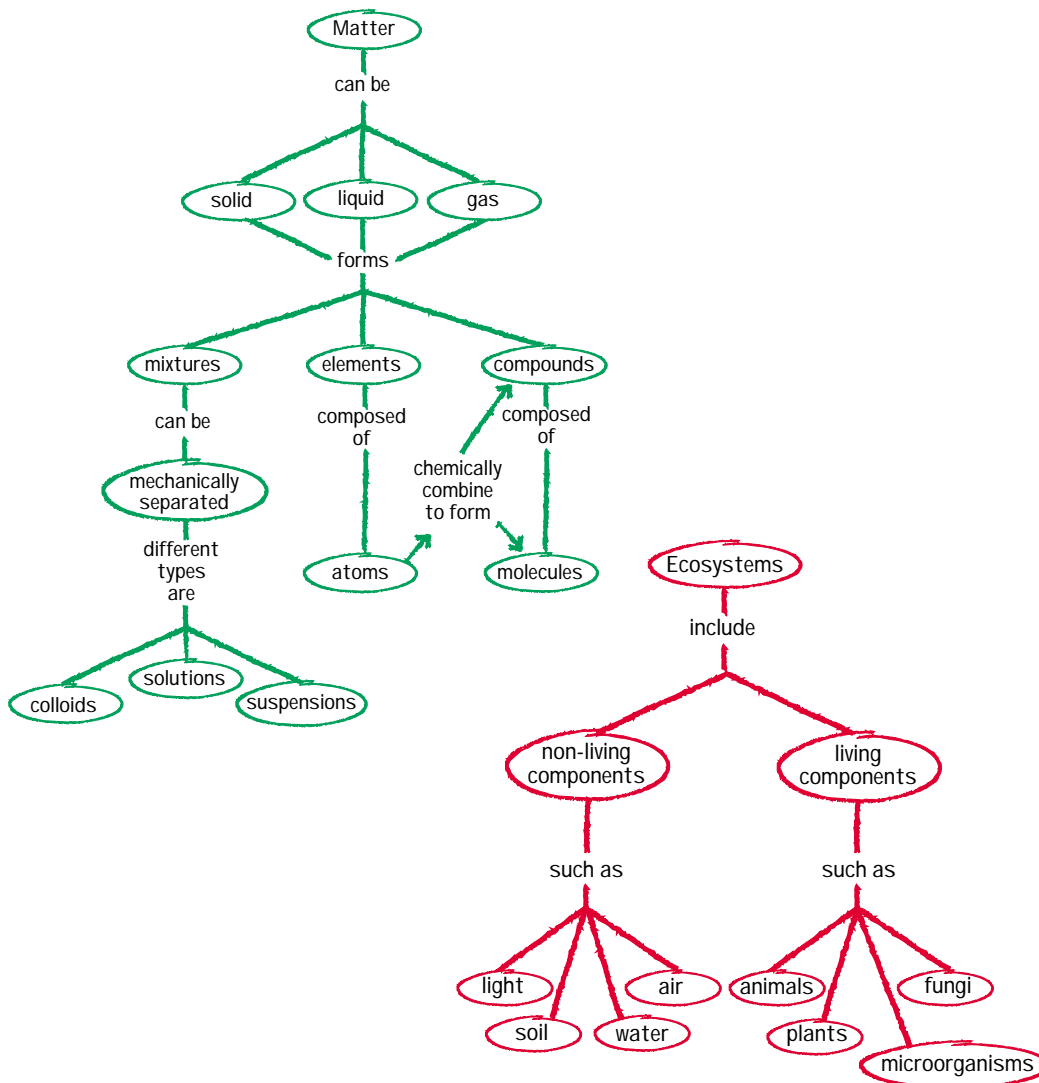
The simple concept map below shows the relationship among the following terms: plants, photosynthesis, carbon dioxide, water, and sun’s energy. More detailed maps are shown on the next page.

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● **Concept Mapping** *continued*

For any given topic, there is no single “correct” concept map. Not all maps are equally valid, however. Good concept maps have most or all of the following characteristics:

- start with a single, general concept—a big idea—and work down to more specific ideas
- represent each concept with a noun or short phrase, each of which appears only once
- link concepts with linkage words or short phrases
- show cross-linkages where appropriate
- consist of more than a single path
- include examples where appropriate



**PROFESSIONAL REFERENCE FOR TEACHERS****● Concept Mapping** *continued***Using Concept Maps**

Concept maps can be applied in many ways, such as the following:

- to gauge prior knowledge of a topic
- as an end-of-lesson, chapter, or unit evaluation
- as a pretest review
- to help summarize special presentations, such as films, videos, or guest speakers
- as an aid to note taking
- for reteaching

You may also want to use partially completed concept maps as pop quizzes or as devices for summarizing particularly difficult class sessions.

**Evaluating Concept Maps**

Again, there is no single correct concept map. However, consider the following criteria as you evaluate your students' concept maps.

- how comprehensive the map is (Are all relationships shown?)
- how clearly the concepts are linked (Are proper relationships between concepts shown? Are linkage terms used between all concepts?)
- overall clarity of presentation (Could the map be simpler? Is it redundant? Is it logically arranged? Are linkage terms used properly?)

Used properly, concept maps can increase comprehension, improve retention, and sharpen your students' study skills. Concept maps are a valuable addition to any student's arsenal of learning strategies.