

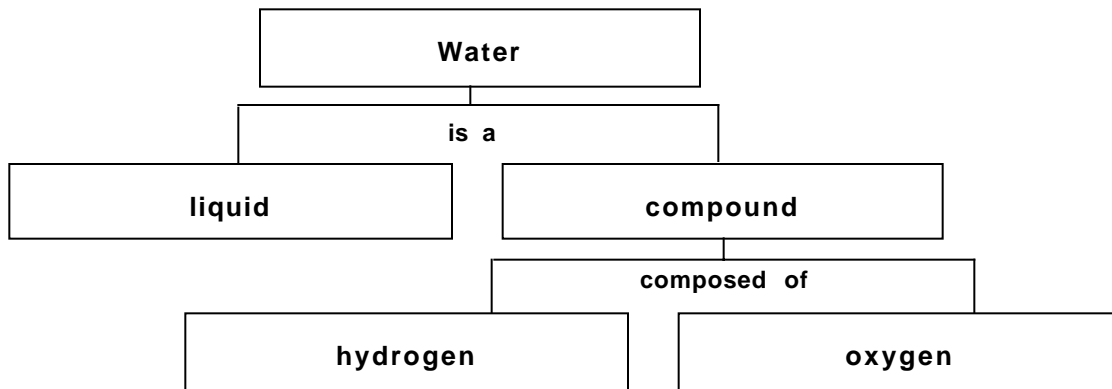
**SCIENCE PROCESS SKILLS**

● **Creating a Concept Map**

If you've ever taken notes in class or written down ideas for a paper, you've probably tried to find a way to organize your ideas. One way of doing this is to make an outline. Another way is to draw a concept map.

In an outline, the main ideas are farthest to the left of your paper, the secondary ideas are slightly indented, and so on. In a concept map, the main ideas are written inside boxes. Concepts that are related are connected by lines, and words usually go with each line to explain the relationship.

Here is an example of a simple concept map:



Both outlines and concept maps show relationships between ideas. However, concept maps show the relationships more visually. When you look at a concept map, you can see how one idea relates to several others.

**How do you make a concept map?**

As you read each numbered section, follow the instructions on the right to make a concept map of the first three paragraphs of this worksheet.

**1. Choosing the Main Concepts**

The first step in making a concept map is to determine what the main concepts are. These will go into the boxes. In the example above, the main concepts are *water*, *liquid*, *compound*, *hydrogen*, and *oxygen*. A few main concepts you may want to use in your map are *concept map*, *show relationships*, and *organize ideas*.

**Read over the first three paragraphs again, and make a list of the main concepts. They will make up the boxes of your concept map.**

## SCIENCE PROCESS SKILLS

### ● Creating a Concept Map *continued*

#### 2. Finding the Central Concept

Think about which concept from your list is the most important one. This concept belongs at the center of your map. The example shows two properties of water. Each branch is about water, so water is a good candidate for the central concept.

**Choose the main concept of the introductory paragraphs, and write this concept in the box at the bottom of the page.**

#### 3. Choosing Ideas That Surround the Central Concept

Next, you need to decide which concepts in your list are directly related to the main concept. In the example, “liquid” and “compound” are both directly related to water. The number of ideas that are directly related can vary.

**Decide which ideas relate directly to the main concept, and place these concepts in boxes around the central concept.**

#### 4. Showing the Relationships Between Ideas

It is important to show how the concepts in your map are related. The lines and words between the concepts explain how they are related. In our example, the relationships are “is a” and “composed of.” Draw as many lines as you need to explain all of the relationships.

**Add lines to your concept map to show how the ideas in the boxes are related. Write words directly on the lines to explain the relationships.**

#### 5. Expanding your Concept Map

Decide which ideas should be connected to the boxes that are next to the main concept. Write the new ideas near the ideas that are already in boxes. Continue this process until you have mapped out all of the ideas on your list.

**Explain the concept map below until you’ve covered all of the main concepts you listed in step 1.**