

## Using Concept Maps to Support Summary Writing, Paraphrasing, and Report Writing

### Introduction

Students in the classroom often have difficulties paraphrasing and summarizing information from sources as well as sifting through what is meaningful to their research or problem and what is not. One technique is to create a concept map, also known as webbing or mind mapping, of the information from one or several sources to allow the student to visualize the connections and then to synthesize a focused summary of the information. The concept map forces the students to move the information that they glean from sources from sentence form into idea form. Then the students create their own sentences and order to reorganize the information. To that end, this activity is designed to be utilized to assist the students in a written assignment that is to be in the form of summarizing, paraphrasing or report writing.

Note: This activity assumes that the students know how to create concept maps in the web format. If the students do not have this prior knowledge, then a mini-lesson on concept mapping will be necessary.

### Indiana Science Standard Indicators

7.1.3; 7.2.7; 7.7.2

This is a generic, but fundamental, lesson that supports the interpretation of verbal information as well as quantitative data. It lends itself to several Indiana indicators in that it helps to provide students with a way to create, organize and utilize notes; incorporate diagrams into writing and research reports and report creation; and allows for the creation of visual models to represent the same information as paragraph models, but in a different form.

### Materials

*For the teacher:*

- *Chalk or Dry Erase Marker*
- *Chalk Board or Dry Erase Board*
- *Practice Concept Map 1 (drawn on board or on overhead)*

Note: If the technology is available, this activity could also be done with a computer, LCD projector and screen  
rather than using an overhead projector or writing the concept map on the board.

*For the students:*

- Writing Paper (Each)
  - Copy of “Chicken Eggs as Drug Factories” Article (Each or Per Pair)
  - Additional Simple Concept Maps For Assessment (Each)
- OR
- Additional Short Articles For Assessment (Each)
  - Writing Utensil (Each)

Note: The assessment option you choose will dictate whether you will need additional articles for the students or if you will need additional concept maps.

## **Activity**

### **A. Activation of Prior Knowledge**

1. Begin by reviewing the steps of concept mapping. Ask the students what the concept map is for. Guide them to the idea that concept maps allow for connections to ideas to more easily be seen and for other connections to be discovered. Discuss with the students that concept maps do not generally use complete sentences. They are tools to look at data quickly, but in meaningful ways.

### **B. Question Generation and Focus**

1. It should be clear to the students that concept maps are useful for dissecting information, but they also are great at helping to create or organize material in formal writing activities. At this point, place “Practice Concept Map 1” on the board or overhead so that all of the students are able to see it. Ask the students what the concept map tells us. Look for students to express answers in complete sentences ideas that are expressed in the concept map, but nothing that the map does not reasonably show or indicate.

2. Now have the students write a one paragraph report/summary using the information shown in “Practice Concept Map 1.”

3. Now have the students read the article,” “Chicken Eggs as Drug Factories” alone, in pairs, or out loud as a class.

4. Ask the students to discuss how well their paragraph brings out the main points of the article.

5. Explain to the students that they have just written a summary of an article before they read the article. This should get their attention. Now, express to the students that it is often very challenging for people to write summaries and reports about things they’ve read, but this technique can be very helpful. They create a concept map from the article as they have already done in the past, and now use the map to create a summary of their own.

6. Why should a student that is able to write summaries do this? It takes them longer. Well, because the other problem that students have, even strong writers, is

plagiarism. Explain to the students that plagiarism is the act of copying ones ideas or writing without giving credit. It's being a "copy cat". That is why we try and paraphrase. The problem is many students find it difficult to paraphrase. When we use the concept map, there are no sentences to copy, and therefore it is much easier to paraphrase.

7. Have the students look back at the paragraph they wrote and the article. Challenge them to find any sentences that are in both pieces of writing. They will probably have few matches that are word-for-word. This should help to make the point. The concept map also allows the students the opportunity to change the order that material is presented whereas a simple summary or report is often given in the same order as the original source expressed it.

### **C. Assessment**

- ***Option One (Focus on writing from concept map only)***

1. Provide each student with a basic concept map and allow each student to write a 1 paragraph summary.

2. Collect the summaries prior to the students leaving the room for teacher analysis

- ***Option Two (Focus on writing from concept map and evaluating other's ability to write from a concept map)***

1. Provide each student with a basic concept map and allow each student to write a 1 paragraph summary.

2. Have students work in pairs AFTER the writing is finished to peer mentor each other. The students may add comments to each other's papers noting at least one strength AND one area of growth. STUDENTS SHOULD NOT CHANGE THEIR PARAGRAPHS.

3. Collect the summaries with commentary prior to the students leaving the room for teacher analysis.

- ***Option Three (Focus on writing from concept map and review of concept map creation)***

1. Provide each student with a short written article

2. Direct the students to make a concept map for the article.

3. Direct the students to write a 1 paragraph summary using the concept map only.

4. Collect the assignment next class for teacher analysis.

## Chicken Eggs as Drug Factories Christen Brownlee

Medicine comes in lots of different packages. Painkillers in a tablet can make your headache go away. Antibiotic cream from a tube can prevent your cuts from becoming infected. But can medicine come packaged in chicken eggs?

A team of scientists from Scotland says yes. They've engineered special chickens that lay eggs with disease-treating drugs inside.

These drugs are made of molecules called proteins. Animals make thousands of proteins - they're the main ingredient in skin, hair, milk, and meat. Since animals can make proteins easily, they're good candidates for making protein drugs.

Researchers have already made cows, sheep, and goats that pump out protein drugs in their milk. But chickens are cheaper to take care of, need less room, and grow faster than these other animals. Those qualities could make chickens a better choice to become living drug factories, says Simon Lillico of the Roslin Institute near Edinburgh, Scotland.

Lillico and a team of researchers changed chickens' DNA - the code that tells cells how to make Proteins - so that the birds' cells made two protein drugs. One drug can treat skin cancer, and the other treats a nerve disease called multiple sclerosis.

The scientists altered the chickens' DNA so that the birds made these drugs only in their egg whites. This protects the chickens' bodies from the drugs' possible harmful effects and makes it easy for scientists to collect the drugs.

These special chickens can pass on their drug-laying abilities to their chicks. So far, the Scottish researchers have bred five generations of drug-producing birds.

The scientists need to improve these chickens before they roost in drug companies' labs. The birds don't make enough drugs to treat people yet. But once the researchers perfect their technique, you might eventually take your medicine sunny-side up. - C. Brownlee

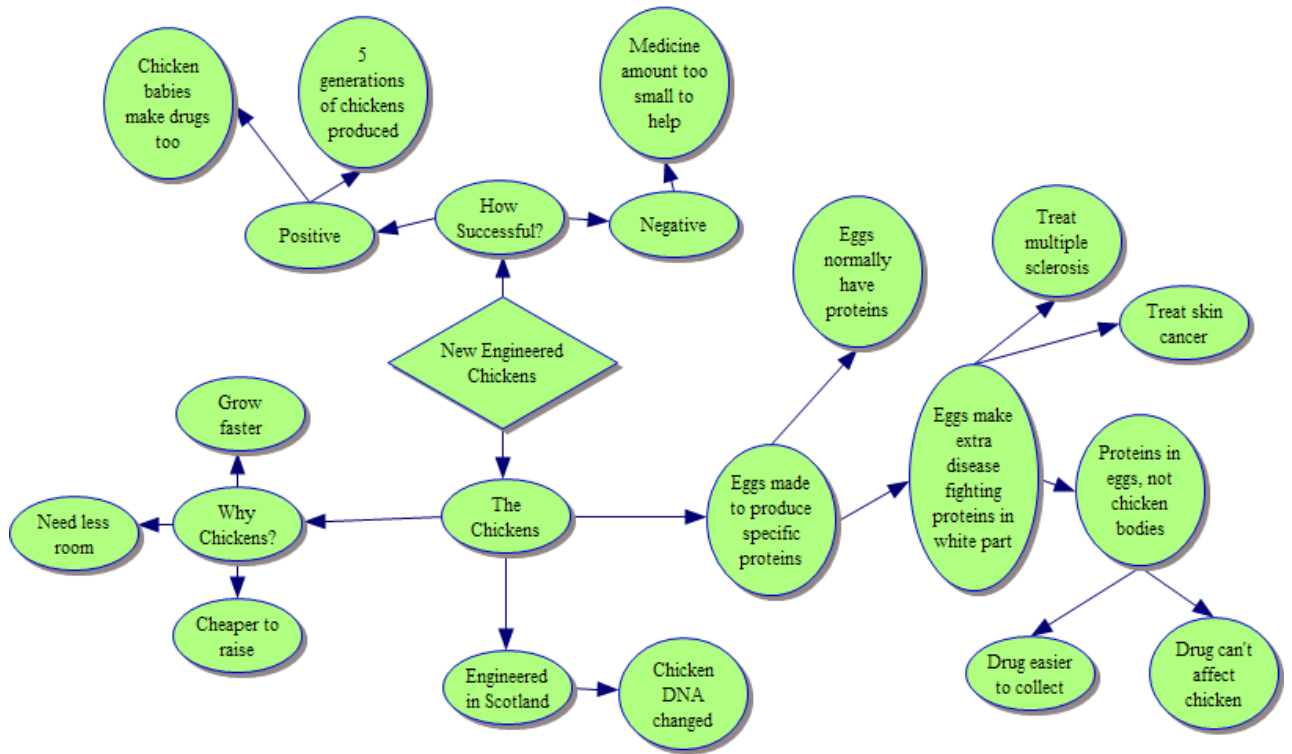
<http://www.sciencenewsforkids.org/articles/20070124/Note2.asp>

From Science News for Kids Jan. 24, 2007.

Copyright (c) 2007 Science Service. All rights reserved.

# Practice Concept Map 1

## Chicken Eggs as Drug Factories



# Practice Concept Map 1

## Chicken Eggs as Drug Factories

