

# The primary literature: Reading and note taking

## Read actively

Take notes but don't read with a highlighter in your hand.

If reading about a topic with which you have little experience, consult secondary literature first.

Read slowly, patiently, several times.

Pay special attention to the following question/ideas concerning the text:

What specific questions were asked?

How was the study designed?

Does the design address the posed question?

Does the author describe the controls?

What are the specific results? Are they convincing? Surprising?

Are there any unanswered questions?

How does this study impress upon my research?

In addition, if you are writing a research proposal, you might try to anticipate the next step in the research sequence:

What questions would I ask next?

# A **system of note taking** for organization of primary literature data based on summarization of text

Why?

Develop a better understanding of the paper.

Allow easier location of important information the next time you read the paper.

## Two Steps:

1. Read the paper straight through.

Develops a foundation of the main topics, methods, results, etc.

2. Read the paper again.

Summarize chunks of material as you read through the paper

Process information

Speeds up subsequent readings of the paper

## Example:

Denaturing gradient gel electrophoresis (DGGE) is a popular method for assessing the structure of microbial communities in environmental samples (Muyzer and Smalla, 1998). The technique is based on the electrophoretic separation of PCR-generated double stranded DNA in an acrylamide gel containing a gradient of a denaturant. As the DNA encounters an appropriate denaturant concentration, a sequence-dependent partial separation of the double strands occurs. This conformational change in the DNA tertiary structure causes a reduced migration rate and results in a DNA band pattern representative of the sampled microbial community.

Ask yourself, "What are the key points in the paragraph?"

DGGE is popular.

Separation of DNA is dependant on double strand denaturation.

The resulting banding pattern can represent the microbial community.

Develop a one-sentence summary.

The summary should be :

Complete  
Accurate

Self-sufficient  
In my own words

### Summary:

DGGE is a popular method of denaturation-driven DNA separation that results in banding patterns that represent microbial communities.