

# <sup>1</sup>INTRODUCING ENGLISH LEARNERS TO THE LANGUAGE OF SCIENCE: ONE DISCOURSE PATTERN AT A TIME

Attention to **scientific discourse patterns** is crucial in getting English learners to recognize and understand the differences between expository and narrative text. Students read and process fiction and nonfiction differently. Students need to get practice reading, listening to the material, and using common discourse patterns used in science, such as “if \_\_\_\_\_, then \_\_\_\_\_”. The table below includes some of the common patterns used in science discourse.

One way to introduce the patterns of language used in talking and writing about science is to use children’s trade books on scientific topics such as weather, environmental concerns, or the water cycle. A list of outstanding science trade books is featured annually in the March issues of *Science & Children*, *Science Scope*, and the *Science Teacher* (NSTA periodicals) each year. Additionally, a web resource for a comprehensive list of alternative written materials for science is found at the California Department of Education website at: <http://www.cde.ca.gov/ci/sc/ll/>

Following small group reading and discussion of parts of the book, students are guided into restating the information in the text and expressing the information in the sample discourse patterns in the table below. Each pattern represents a different function of language within the science classroom.

This focused structured discussion forms part of a broader discussion of the book’s topic. It serves to move EL beyond description and retelling to challenging, expanding on, and going beyond what has been presented by the author. By using these patterns, teachers are both likely to cover language functions beyond those most commonly presented such as describing, and to ask more varied types of questions.

Step-by-step:

1. Read the book as with a small group.
2. Begin with a general discussion about the topic.

3. Focus on a specific aspect of the topic.
4. Present one discourse pattern and check for EL understanding.
5. Ask students to complete the pattern with information from the reading.
6. Read the completed sentence as a group.
7. Students rewrite the completed sentence.
8. Students use a series of the completed sentences to begin to write on the topic.

For Example, after having read a book about how pollution can ruin a river and how people can save it, the discourse pattern labeled “predicting,” might be used by the teacher to prepare students for answering the question, “What do you think will happen to the river?” and completed as follows:

I think \_\_\_\_\_ will \_\_\_\_\_. (*I think the river will remain a clean river.*)

Or the teacher may adapt the sentence and ask the students to complete it as below:

From the reading, I now think that the river near the school will \_\_\_\_\_.

(From the reading, I now think that the river near the school will one day be cleaned up so we can swim in it.)

Once the patterns are completed, they reveal a wealth of topic specific vocabulary and diverse ways of answering questions and explaining the text. Student responses are written down and shared with all. As students read and reread the completed sentence patterns, they develop confidence and fluency with the new structures. Eventually, with repeated practice, these patterns will become comfortable for the students and will be added to their talk about science and other subjects.

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<sup>1</sup> Developed by Fred Dobb, PhD, California Science Project 4/20/2005

## SAMPLE SCIENTIFIC DISCOURSE PATTERNS

SCIENTIFIC LANGUAGE FUNCTIONS	PATTERNS
Describe	The _____ has____, and_____.
Disagree	I don't think the evidence supports _____ because_____. I don't agree with that statement because _____.
Cite information	Here we see that_____.
Estimate	Looking at the _____, I think there are _____.
Retell	First, _____, next_____, and then_____.
Make predictions	I think _____ will _____.
Give and support opinions	I think _____ is _____ because.
Cause and effect	The _____ had _____ so _____.
Draw conclusions	The _____ is _____ because_____.
Compare	This _____ is similar to that _____ because both _____.
Contrast	This _____ is different from that _____ because one has _____ and the other doesn't_____.
Sequence	We saw that first, _____, then, _____ and at the end, _____.

Hypothesize	If _____ had _____, then _____ would have _____.
Persuade	As we just saw in the experiment, _____ does _____ due to _____.
Measure	A _____ is _____ cm. long, _____ cm. wide and _____ cm. tall.  This _____ holds a volume of _____ ml.  Before we _____, the liquid _____, but now it _____.
Construct charts, tables and graphs	Plot _____ and _____. Plot _____ as _____. Graph the independent variable _____ as a function of _____.
Distinguish fact from opinion	Although you say _____, the table says that _____.
Summarize	The main idea from this observation is that _____.
Identify relationships	This _____ is necessary for _____ because it _____.