Terminology for Variables

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Much of scientific endeavor revolves around the use and understanding of variables. Consequently there are many terms used to describe variables in science. Many of these terms have common or overlapping definitions. To help in stabilizing these concepts and standardizing our references to them, the Florida Department of Education has established definitions for three terms that will appear in the FCAT Science whenever any reference is made to scientific variables.

In the *Science Test Item and Performance Task Specifications, Appendix D, FCAT Science Glossary* the following definitions are given.

- *Variable – an event, condition, or factor that can be changed or controlled in order to study or test a hypothesis in a scientific experiment*

- *Independent variable – the factor that is changed in an experiment in order to study changes in the dependent variable*

- *Dependent variable – factor being measured or observed in an experiment*

When we talk about variables with our students we should be using this common terminology. Because other terms are also in use in the broader field of science, there will be times when we should introduce and use those other parallel terms. Independent variables are often referred to as controlled variables or causal variables. Dependent variables are often called responding or respondent variables. As we define and describe the concepts of variables, these other terms could be helpful in establishing comprehension and in making transitions to other science resources using the alternate terminology. In general usage, however, we should use the terms that students will be exposed to in the FCAT Science: *independent* and *dependent*.

The grade level at which to introduce these concepts is yet another question. From the narrow perspective of FCAT Science, the terms will first be encountered in the grade 8 test. We should, however, be introducing students to the concepts of variables at much lower grades. Whenever we talk about variables we should focus on the use of *independent* and *dependent* as the standard qualifiers of variables.