



APPENDIX C WORKING DEFINITIONS

OBJECTIVES

The students

- Review the components of a working definition—form, function, and category.
- Practice making working definitions.
- Start to compile a working dictionary.

BACKGROUND

In this activity students review the concepts of form, function and category introduced in Appendix C Classification. They then use these ideas to identify the components in working definitions and to write some of their own.

Working definitions

Scientific progress relies on *working definitions* or operational definitions that describe the current understanding of a concept or term. These definitions are called *working* because they allow the work of science to go on, understanding that the definition may be changed or modified in the future.

Students' definitions

Research on children's development of definition indicates that the ideas they have about the world are constantly changed or modified by experience. DASH has called on these findings for guidance and therefore uses working definitions to support the students' continual shaping and reshaping of concepts and ideas.

A record of working definitions gives the students a way to keep track of their evolving thinking and learning. Working definitions provide teachers a window into the student's or the class's grasp of ideas. There should be a review of previous definitions whenever an already-defined concept re-emerges. When reviewed, a definition can be added to or changed.

Evolving definitions

A beginning working definition may include only a category name and the thing's functions. For example: *A living thing grows, reproduces, and is a user of water.* Just as common a beginning working definition may include only a category name and the thing's forms. For example: *A living thing is made of wood or meat.* A more advanced working definition would join these pieces. *A living thing (category name) is made of wood or meat (forms) and grows, reproduces, and needs water (functions).* Beyond this simple model, a maturing working definition may also include examples, synonyms, pictures or diagrams, and other information. Pictures and drawings in particular greatly enhance deeper understanding of a working definition.

The Working Dictionary

The Working Dictionary is most often a book with blank pages, frequently loose leafed or a big book format, used to keep a record of definitions. It is suggested that a single page be devoted to each concept or term defined so that ideas can be added or changed. Entries should be dated. Initials of major student contributors can be added to help the teacher in assessment of student understanding. Working definitions *can include incorrect information* since definitions will undergo regular re-evaluation at which time corrections can be made. This is how science operates—it is always changing, growing, and refining.

STUDENT ROLE

Lexicographer

MATERIALS

master collection from Appendix C CLASSIFICATION
chart paper
markers

PRODUCTS

Working definitions

PROCEDURES

1. **Review the ideas developed in Appendix C CLASSIFICATION with the students.**

Ask such questions as these:

- What does *category* mean? Can you give some examples.
 - ✓ Work for the name for the group to which something belongs.
 - ✓ Use the master collection from Appendix B to help students come up with concrete examples.
- What is meant by *form*? Can you give some examples?
 - ✓ Work for the physical characteristics of the thing, the materials from which it is made, and the parts of which it is made up.
- What is meant by *function*? Can you give some examples?
 - ✓ Work for the use of the thing or what it does.

- 2. Introduce the students to the idea of a working definition by reading some and having them identify the three parts. Working definitions include a category or name; a function or what the thing does or how it is used; and its form or physical properties, materials it is made of, and its parts or components.**
Use such definitions as these:
 - A refrigerator is an appliance used for keeping things cold and making ice. It is usually box-shaped, comes in many colors, has a door with a handle and shelves, and needs electricity to operate.
 - Markers are writing tools that come in many colors. They have different sized tips and usually look like pens. They can be washable or permanent and often have special smells. They can be used for writing or drawing on all sorts of things such as paper, clothing, and people.
 - Spoons are kitchen utensils used for eating, serving, measuring and stirring. They can usually be held in one hand. They are made from metals, ceramic materials and plastic. They usually have a handle to hold on to with a bowl-shaped part at one end.
 - 3. Help the students write a working definitions for one of the items in the master collection from Appendix C CLASSIFICATION. Record their definition on chart paper. Have them identify the category, form, and function by circling each in a different color.**
 - 4. Have the students work in small groups to write working definitions for other items in the master collection from Appendix C CLASSIFICATION. Have the groups exchange papers and identify the category, form, and function in the other group's definition by circling each in a different color.**
 - 5. Introduce the Working Dictionary to the students when writing class working definitions.**
 - 6. At the end of the school year store the Working Dictionary for the students to build on the next year.**
-