



## 3.0 DASH COMPONENTS

**Inventors' Box.** The *Inventors' Box* is a materials distribution and storage technique. It is basically a box or other container that holds activity supplies. DASH uses primarily recycled materials. The collection of recyclables and stocking of the Inventors' Boxes is up to the students as directed by the teacher. Boxes with similar materials can be given to each group for a particular activity. Labeled boxes or containers can be used to store often used materials. If the whole class is to retrieve materials from the same box or boxes, the role of material or supply engineer is suggested for each group.

**Science Record Book.** The creation of a *Science Record Book* (SRB) for each student is likely one of the first activities to be done. The SRB is simply a place for the students to store their notes, data, plans, and other work. It can be as simple as a manila filing folder with the student's name on it or as complex as a binder with indexed sections. The particular format is left to each teacher's discretion.

**Responsibility Chart.** The *Responsibility Chart* is an efficient way to assign classroom jobs and responsibilities and to quickly see that they have been done. Responsibilities are listed using real-world job titles to enhance career education efforts. For example, use *ichthyologist* rather than *fish feeder* for the person who is to feed the fish. The Responsibility Chart can be teacher- or student-made. When students participate in the Responsibility Chart's design and construction, more classroom ownership usually results. The chart design needs to include a method to add and remove jobs as classroom requirements change, a procedure to rotate student responsibilities, and a way to see when jobs are completed. Spring clothes pins and library pockets with index cards have been successfully used to accomplish these criteria.

**Wonder and Discover Book.** The *Wonder and Discover Book* is used to record student questions. Their questions may be about the topic being studied or something else entirely. This technique provides a way to acknowledge *good* student questions, even when asked at an inopportune time. It also can provide an introduction to independent student research. Research on particular questions may be left to the students to tackle independently, assigned by the teacher as homework, or addressed in any way the teacher sees fit. This book can be a class book in a binder, a section in each student's Science Record Book, a file on the computer, or whatever the teacher decides. It is suggested that each question have its own page to allow room for recording discoveries. Be cautious of over using this strategy. It should be an *honor* to record a question in the Wonder and Discover Book. One alternative to using the Wonder and Discover Book is to record student questions on the appropriate concept map if available.

**Working Definitions.** *Working Definitions* are definitions constructed by students to describe their current understanding of a particular term. A working definition includes the category, form, and function of the term described. It may also include illustrations and/or examples. Initially, definitions are constructed by the whole class, then in small groups and compared, and finally by each individual student as they become more expert.

**Working Dictionary.** Working definitions are recorded and stored in the *Working Dictionary*. This can be a class book such as a binder, a file on the computer, or a section in each student’s science record book. The particular format is again left to the teacher’s discretion.

**Concept Maps.** Concept mapping in DASH is an instructional strategy. A more complete description of techniques and the developmental levels is found in “Concept Mapping in Science” located in the *DASH Instructional Guide*. The students first map their prior knowledge of the concept to be studied. This informs the teacher of what the students already know, where they need to construct new knowledge, and of misconceptions or *alternative explanations* they may hold. This same map is revisited periodically to summarize progressing study on the topic. Information, ideas, and questions may be added, removed, and/or corrected. At the end of the study, the concept map provides a picture of what has been accomplished during the topic study. These concept maps are often used to construct assessment instruments. In DASH, concept maps are saved as they are often revisited at a later date for reference or updating.

### Connections and Reflections

Often students have a difficult time associating what they are learning in school to their home and to other outside-of-school environments. The purpose of this activity is to provide a stimulus to reflect on their learning in science and to look for connections, relationships, and applications. Connections can be recorded on concept maps, in a special *Connections Book*, or in a special *Connections* section in the student’s own Science Record Book. Some connection-making questions you might ask include:

- Why is *this* important for you to know?
- Who else needs to know *this*?
- Where else could *this* be used in school? At home? In the community?

### Inquiry and Questioning

There are three basic questions that go with the inquiry process. The exact wording may vary based on the activity or situation but the ideas remain consistent. Likewise inquiry is often not a 4 step process. It often moves back and forth between steps.

Inquiry Processes	Basic Questions
Problem, need or student question.	
Hypothesis	What do you think?
Test	How could you find out or test your idea?
Conclusion	What did you find out or learn?

