Process Skills Developed by Naturalist

A process skill is a basic tool in the world of learning and problem solving. The process skills needed to develop the naturalist intelligence are those that encourage exploration, discovery, creativity, and innovation. Most scientists would identify these skills as part of the scientific method. The logical progression of this method begins with observation of the world around us, which means simply stopping and taking in information through the senses when appropriate.

As the foundation of these experiences builds, the questions being to flow. Why does this happen? How did that work? The *whys* and *hows* can be answered through data collection, which is a way of recording the information: drawing, writing descriptions, and graphing to name a few. *Data collection* simply means that the experiences are not just consumed but measured in a way that can be remembered and later investigated. One can count on all sorts of estimating, measuring, counting, sorting, and classifying activities in this book.

Eventually, from the collected data, students can predict something or solve a problem to possibly answer the original question. On occasion the question goes unanswered because the students needs to observe more, collect more data, and predict and analyze further.

Following are brief definitions of the process skills used in this book. Many contain suggestions of activities that are appropriate to develop those skills.

- **Observing:** Using one or more of the five senses to gather information, often aided by the use of scientific equipment
- **Collecting data:** Gathering information through observation and measurement in a systematic manner
  - **Drawing and sketching:** Creating visual images of observations
  - **Describing:** Using words to record qualities
  - **Recording:** Documenting what has been observed
  - **Measuring:** Comparing objects to arbitrary units that may or may not be standardized
- **Predicting:** Forming an idea of an expected result based on inferences; guessing an outcome based on experience or evidence
  - **Estimating:** Calculating an approximate quantity or value based on judgment
- **Analyzing:** Looking at the data and trying to discover what it means
  - **Comparing:** Pointing out similarities of and differences between two or more things
  - **Classifying:** Grouping or ordering objects or events according to observed common characteristics
  - **Graphing:** Converting numerical quantities into a diagram that shows the relationship among them
  - **Calculating:** Adding things up
  - **Ordering:** Ranking, separating, or grouping
- **Communicating:** Giving or exchanging information orally or in writing to discover answers
  - **Cooperating:** Working together to share knowledge and create a better understanding
  - **Problem solving:** With the help of others, using observations, collected data, and analysis of information to draw conclusions or answer a question

Source: Zephyr Press publications, Discovering the *Naturalist Intelligence: Science in the Schoolyard,* by Jenna Glock, Susan Wertz, and Maggie Meyer.