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EDUC6819
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SCIENCE PROCESSES WORKSHEET
Based on Martin, Elementary Science Methods; A Constructivist Approach (Fourth Edition)

1.What is the scientific method? Is there a "right way" to do science? What is science and how do scientists do science? (page 16, 17)

*The scientific method is a body of techniques used for investigation and acquiring new knowledge. It is based on gathering observable, empirical, measurable evidence, subject to specific principles of reasoning.

*There is no right way of doing science. Scientists need to identify and control variables they believe may contribute to an effect. They need to collect data and interpret this data through reasoning. They must also communicate the results.

*Science is the process of obtaining and verifying knowledge. Scientists do science through the processes of science. They do science through careful and appropriate application of the scientific processes to questions that were generated as a result of wondering about something.

2. THE BASIC PROCESSES
Define each of the scientific processes listed below and give an example of an activity that can be used in a science lesson. Please use your own examples and not ones from the book.

Observing (p.69):
*It is the act of using all of our senses to investigate and gather information. Observation is the essence of all science. Observation determines the procedures and the outcome of any scientific inquiry. Observation is not only the expected things but also the unexpected things.
*An activity I have done in the classroom I am in requires students, as a group, to fill a cup with water and accurately label the cup with ticks in ML. These cups then sit on the window sill for one week and each day students observe how much water has evaporated.

Classifying (p.82):
*Classifying is the process of taking numerous items and then placing them into groups according to the characteristics one would group them as. This is a skill needed by children to put together facts to form concepts and is essential in identifying variables as children form hypotheses and design.
*An activity for this process would be to have students write down their favorite animal and then have them, in groups, classify these animals and give each classification a name/title.