Science Unit: ***The Earth Around Us: Air, Water & Soil***
Introductory Activity – Thinking Like a Scientist

School year:	2007/2008
Developed for:	Carnarvon Elementary School, Vancouver School District
Developed by:	Linda Hanson (scientist)
Grade level:	Presented to Grade 2; appropriate for grades 1 – 7 with age appropriate modifications.
Duration of lesson:	1 hour and 15 minutes

THINKING LIKE A SCIENTIST: The scientific method

Start with a Brainstorm: What does science mean to you?
What do scientists do?
How/why?
Ask the students if they do/use science.

Discuss how science is all around us and how it improves our every day lives: cooking, textiles, engineering, medicines, nutrition, etc. Why is science important?

Introduce the concept of thinking like a scientist

- Have the teacher write the steps on the board as the scientist discusses each one
- Use the observation experiment to provide examples and aid understanding

Thinking like a Scientist

a) Have a **question** – what do you want to study.
b) Pick your test **factors** – what part are you testing.
c) Make your **hypothesis** – predict what you think will happen, why?
d) Do an **experiment** – to test your hypothesis.
Be sure your experiment will **only test one factor** and have a **control** with which to compare your results. This will make your results clear.
e) Record your **observations**.
f) Perform **replicates** of your experiment. (Reasons to repeat the experiment: the first result may be due to chance, there are differences between test items, especially if you are using living organisms, make your results stronger and more applicable)
g) Summarize your observations – use a graph or table.
h) What **conclusions** can you make about your hypothesis?

Use a simple observation experiment as an example:

a) who is taller, girls or boys?
b) gender

c) I think…are taller
d) Measure heights of students (pick one tall girl and one short boy)
   Shoes? Hats? Keep all things equal, measure only one variable.
e) record heights of two students (have teachers have other info ready)
f) Ask if this means that girls are taller than boys. Introduce concept of replicates.
g) Summarize class results (can have teacher measure students before the lesson or can measure all students at this point)
h) Discuss conclusions – applicable to this class only etc.

Finish up the class by introducing the upcoming unit.