The *Art* of Science:
The Power of Creativity in the Science Classroom

by Merrie Southgate

A young child discovers a feather lying on the ground. She* instantly picks it up and begins to tickle her face with it. She then smells it, studies its color patterns and reflections, maybe even tastes it. She will then also surely wonder what it feels like to *be* a feather, carried freely and lazily along by the whims of the breeze. When asked to describe her treasure, she may use words like soft, smooth, shimmery, and "tickly." Asked to draw a picture of the feather, she will scrutinize its properties of line, shape, pattern, texture, and color – arriving at a keen understanding of what "featherness" IS. She may even do experiments with her precious plume. Does it sink or float in water? Is it heavier than a penny? If its barbs are pulled apart, will it fall differently than before?

While making all these observations and discoveries, the child does not think about whether she is doing science or art – only that she now has new knowledge and understanding of something in her world. She is just as excited about naming the parts of a feather as she is about drawing a picture of it or pantomiming its movement. She has no preconceived ideas about science and art; they both stimulate her imagination and cause her to wonder…..

Whether it is immediately apparent or not, the fact is that art and science are **connected** as expressions of human creativity. Separated one from the other, only the most rudimentary levels of understanding are possible. A plant uprooted from the soil has little chance of surviving. Likewise, children (small and big), deprived of the chance to exercise the muscles of their creativity have little chance of ever maximizing their potential. Our most influential scientists have been among the most creative, inventive people ever to live!

Fortunately, in this new millennium, more and more educators are realizing the importance of teaching through creative means, be it through language arts, graphic arts, creative drama, storytelling, bookmaking, computer technology, etc. The "trick" is to choose the means of creative expression that best fits the science content you're trying to teach. Leonardo da Vinci, scientist and artist *par excellence*, taught us over 500 years ago that the best way to observe something is to draw it; for in the process of drawing, one gains both knowledge and understanding. The extra time spent in your classroom is well worth the investment. Also, drawing has helped many scientists evolve ideas. Such "idea sketching" was a valuable precursor to invention and discovery by the likes of inventor Thomas Edison, geologist Marie

Tharp, and of course, Leonardo da Vinci, artist, scientist, inventor, architect, and even musician.

Without imagination, problems would never be solved. Jacob Bronowski has said that "we need to use all our facilities to the full – to assimilate with the scientist's brain, the poet's heart, the painter's eyes." Failure to spark the creativity and imagination of science students will severely impair their ability to see beyond the "facts" in their textbooks, leaving them with only the lowest form of cognition in the most exciting arena of learning there is!