

## Puzzles and a Sense of Mystery

### What are puzzles and the sense of mystery?

We are more familiar with puzzles, and how they can engage students' imaginations if we choose well. What state in the U.S.A. is named after Julius Caesar? This is a good puzzle, in that it has an answer, and it pulls together two well known areas of knowledge that nevertheless seem quite alien. The answer is New Jersey, because the word "Jersey" was transformed through centuries from the name of some islands that used to be called Caesar's Islands, or Insulae Caesareae. Caesareae gradually changed over the centuries and the Jersey Islands are thus, really, Caesar's Islands, and New Jersey is properly New Caesar. The sense of mystery is less commonly used in teaching, but is perhaps even more powerfully engaging if used well. It is an important tool in developing an engagement with knowledge that is beyond students' everyday environment. It creates an attractive sense of how much that is fascinating remains to be discovered. All the subjects of the curriculum have mysteries attached to them, and part of our job in making curriculum content known to students is to give them an image of richer and deeper understanding that is there to draw their minds into the adventure of learning.

In the imaginative classroom we will expect to see much greater emphasis on puzzles and mysteries. These can indeed involve the more sensational kinds trumpeted by popular papers, but should also move constantly in the direction of the deeper puzzles and mysteries beyond our range of knowledge. Even when learning simple counting, the idea of infinity can be brought forward for even young children to butt their heads against. (One of our children became quite puzzled early in his school career when he was told he wouldn't be able to learn to count to the end.) When learning about prime numbers, students can be invited to find some pattern in the appearance of primes, and then can be told that this is one of the most persistent puzzles mathematicians have grappled unsuccessfully with for centuries. These different ways of seeing the familiar constantly open up puzzles and mysteries surrounding our small and insecure space of knowledge

### How can we engage students' sense of puzzle and mystery in teaching?

**Topic:** Vowels and consonants

**Subject Area:** English/Language Arts

**Cognitive Tool:** Puzzles/Sense of Mystery

We can quite easily teach students which letters in the English language are vowels and which are considered consonants. But it seems a shame to stop there when one can easily engage students' sense of mystery by digging a little deeper. We can pose questions that ask students to consider why, exactly, certain letters are called consonants and others vowels. Why are there so many more consonants than vowels and why do the vast majority of words have at least one vowel in them? Why is "y" only "sometimes" a vowel? What, exactly, do vowels do? It might be interesting to mention that neither Arabic nor Hebrew use vowels in common use. Are they really necessary then? Some suggest too, that the human brain can identify

words with the vowels missing—but not the consonants so easily. The teacher could write a few words missing vowels (dg = dog; prk = park) or a simple sentence on the board and see how many students can read it: Th dg rn ftr th ct. (The dog ran after the cat.) Why are some words easy to identify without a vowel and others are not?

**Topic:** Verb Tenses

**Subject Area:** Language Arts/Second Language Learning

**Cognitive Tool:** Puzzles/Sense of Mystery (and Mental Imagery)

The imaginative teacher might engage students' sense of mystery by creating a Harry Potteresque story line. He can bring students with him through the creaking door of the dilapidated old shed hidden in the woods of a nearby park. Inside, through the sunlight that managed to penetrate the solitary window, thick with dust, mildew, and cobwebs, one can see shelves of rusted tins and glass jars of all shapes and sizes. In the corner, slowly rocking back and forth, twisting her hands, is a grizzly old woman wearing a long, torn, black cloak. Her face is shrouded with thick layers of greasy grey hair, her face deeply lined and covered with black and brown moles each sprouting three or four coarse black hairs. It is this repulsive person who has the magic spells required to move through time. For those who have the nerve to enter her lair – a shed, I might add, that is only visible on certain cycles of the moon and at exactly six minutes before dawn – she can provide the spell required. The spell required to move back in time is a little more complicated than most. It requires a steady hand and a sober head. In this example that teaches the basic components of past tense in French, we could describe for the students how she throws three items into the cauldron that bubbles in the centre of the room – a subject of some kind, either avoir or être, and a verb in past form. When cast in the proper way, this spell, allows one to express the past. I think you get the picture – through creating this image—one that evokes a sense of mystery not only in relation to this spooky character, but also the puzzle of verb tenses, our students become emotionally engaged, perhaps a little spooked, by the power of a verb tense. This particular approach may also draw out the mystery behind a form of language that can, symbolically anyway, move us through time.

### **Why do puzzles and a sense of mystery engage our imaginations?**

Puzzles are sufficiently familiar to not need much in the way of further exposition. We all recognize how we can be so engaged in a puzzle that we go crazy unless we can either solve it or we are given the answer. That engaging power can be used in all curriculum areas, if only we select appropriate puzzles. We don't want to drive our students crazy, of course, but we do want that engagement. The sense of mystery is much less commonly mentioned in education, so a few more words about that might be appropriate. Mind you, there may be some risk in including "mystery" among this list of cognitive tools. Apart from any other reason, it might seem just plain odd to call the recognition of mystery a "cognitive tool." There is also a problem with the popular sensationalism that is associated with the use of the word, as in "mysteries of the Bermuda triangle" or "mysteries of the ancient world," though perhaps less objectionable is "mysteries of nature." But we can see ways in which a sense of the mystery of things is an

important component in the growth of understanding. It is a tool that allows us to recognize that whatever we learn about is at best only a tiny fragment of what is to be known. The sense of mystery makes this realization not disabling or depressing, but creates a kind of excitement about the vast riches of understanding that remain available to us. So rather than simply dismiss that sensational aspect of “mystery” as it might appear also in the headlines of such publications as *National Inquirer*, we want, rather, to work out how it may be turned to educational purposes.

At one level the sense of mystery is a part of developing intellectual humility. One of the best-known expressions of this came from perhaps the greatest scientific mind of all time. Sir Isaac Newton (1642–1727) wrote to his nephew that while people might think him so knowledgeable as a result of his work in mathematics, optics, physics, and astronomy, and his discovery of the law of gravitation, the formulation of the basic laws of motion, the development of the calculus, and the analysis of the nature of white light, and so on, he himself took the view: I seem to have been only like a boy playing on the seashore, and diverting myself in now and then finding a smoother pebble or a prettier shell than ordinary, whilst the great ocean of truth lay all undiscovered before me (in David Brewster, 1855).

Mystery enables the mind increasingly to recognize that the world around us that we can see and hear and learn how to behave within, is only the immediate surface under which, or behind which, or beyond which are intellectual riches and experiences barely guessed. Mystery is our sense that there is more than we can see and hear and experience in our environment. By opening our minds to this wider, stranger, and less easily accessible world we create the first tool for its exploration.