

The curious kid is a budding scientist

Parents must 'light fire' early on



Dr. Stephanie Wright is founder of the Delaware AeroSpace and Education Foundation, which strives to create an exceptional learning environment that inspires children and their families with a sense of appreciation for the Earth and its place in the universe. She agreed to be interviewed by editorial board member Rhonda Graham on what's at stake for improving U.S. students' attraction to and performance in science related subjects.

What does it take to hardwire American kids with a comfort level for science?

American children, in fact all children, are already hardwired for science and engineering. We know that toddlers at the very earliest ages have an inborn curiosity that drives them to manipulate and adjust just about anything that they touch.

This natural curiosity and fascination can be channeled into meaningful experiences that build practice in investigating, constructing and innovating. Children need to be exposed to and participate in interactive activities and scenarios that will harness their curiosity and motivate and inspire them to investigate the world around them.

The key to molding the young scientist into one who knows how to use and apply the formal scientific and technological methods is to present interactive programs that present kids with problem-solving situations. We must continue to bring good science and technology, based on investigation and conceptual learning, to all children beginning at the elementary level. This foundation can provide the building blocks for a community of adults who are comfortable with science and technology.

How much is self-discipline a factor in comprehension of the fundamental concept of deductions and investigation?

For children, innate investigation does not require a great deal of self-discipline beyond the ability to focus on something for a brief period. We need to engage students, educators, families and the

general public by creating meaningful, applied learning experiences which can lead to increasing science and technology literacy to the benefit of the nation as a whole.

Children are investigating whenever they stop to watch a natural event or interact with their environment for brief periods of time. The self-discipline needed to keep returning to an event to try to understand what is happening develops when we nurture a child's natural curiosity about the world.

In order to encourage these skills, adults need to encourage creativity, questioning, invention, innovation and imagination. These characteristics are internal to the learning of the fundamental concepts of deduction, investigation and critical thinking.

Young people need continuous opportunities to develop their talents and demonstrate what they know and can learn. Each child's untapped potential is waiting to be unleashed.

If enjoyment of subject matter is an important hurdle to academic competence, how can that be best achieved in science and math, which have reputations of being boring?

In order to develop future scientists, engineers and technologists, we need to provide experiences and activities that excite young kids enough to want to be part of these fields. If those same kids get to middle school before having developed an interest, it is less likely that they will want to be scientists or engineers.

What is needed is a progression of applied learning experiences for Delaware's rich and diverse students which capitalize on the imagination, passion, inspiration and creativity of America's innovative spirit. Academic competence is not solely based on the level of enjoyment of the subject matter in a classroom. Science, mathematics and engineering can be difficult but that does not mean that they cannot be enjoyed.

What can a parent do now to light that fire in a child? What if the parent wasn't "good" at science or math?

Children should embrace education at an early age through example. They should be shown the importance of education, hard work and academic excellence by their parents and adults in their lives from an early age.

Whether or not a parent excelled in science or math is not the issue; the key is that parents have the power to light the first fires of learning in their own child. Parents can instill a passion in their children for asking questions, looking for answers and exploring their world.

In time, teachers can, with the knowledge, patience and creativity, continue to develop our future scientists, engineers and mathematicians. Preparing students to be quantitative thinkers able to reason, solve problems and create new knowledge will enable them to follow any path they might choose as they become tomorrow's citizens.