Engaging Gifted and High Ability Learners in Science: Journeys to Inspiration
Mrs. Leah Parker, MAEd
The Caepe School, Anthem, Arizona
Leah@JourneysAcademy.com OR Leah@TheCaepeSchool.org 602-443-4848

Gifted Learners and Science
Many gifted learners report that science is the subject in school that most intrigues them. However, they often report frustration with science education. Unfortunately, many schools leave the needs of these students unmet—either by neglecting to spend enough time on the subject or by presenting material that does not engage or inspire them.

Key Components to a Science Curriculum for Gifted Students Identified by the Center for Gifted Education at the College of William and Mary
A. An emphasis on learning concepts
B. An emphasis on higher-level thinking
C. An emphasis on inquiry, especially problem-based learning
D. An emphasis on the use of technology as a learning tool
E. An emphasis on learning the scientific process, using experimental design procedures

NSTA Supports These Components
“The National Science Education Standards envision change throughout the system. The science content standards encompass the following changes in emphases:”

<table>
<thead>
<tr>
<th>Less emphasis on</th>
<th>More emphasis on [Aligned with Key Components]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowing scientific facts and information</td>
<td>Understanding scientific concepts and developing abilities of inquiry [A, C]</td>
</tr>
<tr>
<td>Studying subject matter disciplines (physical, life, earth sciences) for their own sake</td>
<td>Learning subject matter disciplines in the context of inquiry, technology, science in personal and social perspectives, and history and nature of science [C, D]</td>
</tr>
<tr>
<td>Implementing inquiry as a set of processes</td>
<td>Implementing inquiry as instructional strategies, abilities, and ideas to be learned [C]</td>
</tr>
<tr>
<td>Emphasis on individual process skills such as observation or inference</td>
<td>Using multiple process skills—manipulation, cognitive, procedural [B]</td>
</tr>
<tr>
<td>Private communication of student ideas and conclusions to teachers</td>
<td>Public communication of student ideas and work to classmates [E]</td>
</tr>
</tbody>
</table>

(Center for Science, Mathematics, and Engineering Education, 1996)

It’s time to think outside the box, and by that I mean the confines of your classroom!
• Experience Math and Science at www.adaptivecurriculum.com.
• Find a rich variety of resources and activities at www.nasa.gov.
• Keep up with Dr. Amber Straughn, NASA astrophysicist, at http://cosmicdiary.org/blogs/nasa/amber_straughn/.
• Kids fly for free with the Young Eagles program. Find out more at http://www.youngeagles.org/.
• Find science landmarks, observatories, science museums and centers, planetariums, and Imax theaters in your area.
• Look for amusement parks and other (safe) extreme sources of fun in your area. They probably use science to create the fun!
• Find experts in the field through your local university, professional organizations, science organizations, etc.
• Contact organizations related to science to borrow technology and other resources.
• I encourage families to come along on field trips to foster a family love of learning.
• When students present research, I invite family, friends, administration, all staff, and community members. If it is important enough to research, it is important enough to share!
• Give families information about talent searches and other accelerated programs. Check out programs at Johns Hopkins University, Duke University, Stanford University, Northwestern University, and University of Minnesota.
• Look for exciting science summer camps like the Young Eagles camp.
• Sponsor a Science Club for students hungry to learn and explore.
• Assist students as they prepare for and engage in academic competitions.

What about cost?
• You can find many free resources. We have highlighted research activities, online resources, local universities, experts in the field, and organizations, such as Young Eagles.
• Continually network and utilize members of your community—students’ families, friends, business people, local outreach programs, anyone you can think of—to find opportunities for your students. Who can get you where you want to go? Who can help you gain admission to important places?
• Ask for the very best deal possible. Tell people about your amazing students and your exciting goals.
• Ask for further discounts in exchange for free advertising in your yearbook, newsletter, or other school publication.
• Engage families in fund raising.
• Apply for educational grants.

References

For more information on gifted education see the National Association for Gifted Children: http://www.nagc.org/.

“The cure for boredom is curiosity. There is no cure for curiosity.” ~Ellen Parn