

About

Mobile Science Education Consulting Services

Dr. Diana Wehrell-Grabowski, AKA Dr. Diana, owner of Mobile Science Education Consulting Services has been successfully conducting “hands-on” science programs and teacher workshops/in-services throughout the state of Florida, nation, and world since 1987. The business was created by Diana to provide progressive and quality “hands-on” science programs to students of all ages, and “hands-on” science inservices for teachers, administrators, and parents.

About The Owner

* Dr. Diana Wehrell-Grabowski received her Ph.D. Science Education from Florida Institute of Technology in 1994. She also has a Master’s degree in Curriculum and Instruction in Science Education.

* Diana has provided over 650 teacher in-services for public and private educational institutions, corporations, and educational organizations. Additionally, she has trained over 5000 individuals in the implementation of family science programs.

* Diana has been a keynote speaker, guest speaker and presenter at over 70 conferences throughout the nation and world.

* Diana has presented over 13,500 “hands-on” science programs to pre-K-12th grade students at hundreds of public and private educational institutions.

* Her business has been awarded several prestigious grants. Additionally, she has worked collaboratively with other organizations in writing grants and providing training in major grants.

* Her business has received the attention of the media on 40+ occasions. Additionally, she has written articles that have appeared in many publications.

* Diana has written 15 curriculum training manuals used in her teacher training workshops.

* Diana is a member of NSTA, FAST, NAEYC, NAAEE, FRA, ASEE, LEEF, COPUS, National Afterschool Assoc.

Structure Of Workshops



- All workshops meet the requirements of the National Science Education Standards (K-12th Grade).
- All workshops meet national and regional STEM standards.
- All workshops incorporate a “hands-on” inquiry approach to the teaching and learning of STEM concepts.
- All workshops are inquiry-based.
- All workshops engage the participants in challenging explorations and discourse.
- All workshops help to develop and strengthen critical thinking skills.
- All workshops incorporate reflective journaling.



Florida Rates

- Two Hour Workshop.....\$500.00
- Three Hour Workshop.....\$700.00
- One Day Workshop (5-6 hrs).....\$1,000.00

Rates Outside Florida

- National rates vary according to travel required. Rates outside Florida for 5-6 hr workshop *\$1,300.00 and up* according to travel requirements, and specifics of workshops. Individual quotes given for national inquiries.

- Additional fees will be charged for auto or air travel, and lodging as required.

Fees include one manual per student participant or family and all the supplies required to conduct the workshop.

HANDS-ON-MINDS-ON SCIENCE, TECHNOLOGY, ENGINEERING & MATH (STEM) WORKSHOPS

For Girls & Their Parents



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Engineering, and Architecture

Looking for an educational interactive, and exciting keynote presentation for your next conference? Contact Dr. Diana for details, view her keynote speaker website@



What is STEM Education?

STEM education refers to the areas of science, technology, engineering, and mathematics. STEM initiatives were brought about as a means to educate and prepare today's students to enter STEM fields in college. K-12 STEM programs strive to motivate and encourage students to pursue careers in STEM-related fields. The majority of STEM programs have been successful in reaching their goals. However, the "down-side" is that there are too few STEM programs available to meet the needs of the growing number of students that could benefit by a STEM-based education. I have designed a series of *hands-on-minds-on* STEM-based workshops for girls and their parents. These workshops provide a wide-array of hands-on-minds-on-inquiry-based STEM explorations and investigations. The explorations and investigations undertaken during the workshops use readily available and relatively inexpensive materials and supplies. This allows participants to replicate the explorations easily on their own. The following STEM workshops are ideal for those schools and organizations seeking opportunities to introduce girls and their parents to STEM explorations and careers in a fun, exciting, educational, and meaningful manner. All workshops are conducted via inquiry-based practices. Participants will be actively engaged in exploring STEM concepts throughout the entire workshop. What a great way to encourage girls in STEM, and involve parents in the education of their children.



The following workshops are available in 2 to 6 hour sessions, and multi-day sessions. Concepts and explorations will vary according to grade levels in attendance and length of workshop.

Developing Critical Thinking Skills via Exploring Science, Technology, Engineering, and Math (STEM) Concepts

During this workshop participants will learn how to develop and strengthen their critical thinking skills by incorporating science, technology, engineering, and math (STEM) concepts. Participants will conduct numerous hands-on-minds-on explorations that integrate STEM concepts that will help to develop and strengthen critical thinking skills. The use of writing and journaling in the science classroom will be incorporated throughout the workshop. Great foundational workshop for girls of all ages and their parents.



Aristotle

Introducing and Applying the Principles of Biomimicry via STEM-Based Explorations

To introduce the concept of biomimicry (from bios, meaning life, and *mimesis*, meaning to imitate). Participants will be asked to share their ideas of what man-made inventions they believe are based on models from nature. Biomimicry is a relatively new science. Engineers, scientists and inventors examine models, systems, processes, and elements found in nature, and try to imitate these models in the design of innovative new products. We will begin with exploring many of Leonardo da Vinci's ideas, sketches, models, and inventions that were based on his observations of nature's models.

Throughout the workshop participants will be introduced to many examples of how models from nature have been used by man-kind in designing, building, and manufacturing modern-day inventions to include:

- Air, and sea vessels
- Design in automobile shape, structure, & design
- Sonar and radar
- Material science (building)
- Designs for living (homes & buildings)
- Defense
- Movement and motion
- Tools
- Energy systems
- Inventions based on bio-chemistry models in nature.



Participants will observe examples of all of the above models through hands-on explorations, using simple to complex scientific and mathematical tools to observe and analyze the models.

Participants will make models during the workshop to reinforce concepts and explorations presented during the workshop. These models are based on using readily available materials, including objects from nature. Thus, participants will be able to replicate the explorations on their own within their home at ease.

This workshop is appropriate for grades 3-12. *STEM explorations and content varies according to length of workshop and grade levels.*

Scheduling lengthier and multiple-day workshops allow for more in-depth coverage of STEM content and STEM explorations.

STEM Discovery Workshop

Participants will become immersed in exploring science, technology, engineering, and math concepts and principles as they observe, analyze, compare, and contrast objects and organisms from nature, and man-made objects. Participants will use simple to complex scientific tools in their observations and analyses of natural and man-made materials. A major goal of this workshop is to introduce STEM explorations that are built on project-based and problem solving investigations, and real-world application.



Explorations and investigations to be undertaken, but not limited to include:

- Exploring mathematical patterns in nature including geometric patterns and Fibonacci Sequence. Emphasis is placed on analyzing why these patterns exist and how STEM disciplines borrow from nature in designing new technology.
- Explorations in materials science.
- Building 3-D geometric structures to explore nanotechnology, behavior of soap film, light waves, and minimum surface area phenomena. These structures will also be used in engineering explorations to test for weight load capacities.
- Exploring the molecular structure of DNA by making models, using simple materials.
- Extrapolating DNA from fruits and vegetables, using simple materials.
- Constructing solar ovens—emphasis on structure and materials used.
- Constructing structures (bridges, geodesic domes, etc. out of readily available materials including recyclable items. Participants will test structures for strength and durability.
- Reverse engineering & gadget anatomy.
- Designing and building models that will stay aloft. These models will be made out of readily available materials. Models will be tested for time aloft and aerodynamics.
- Exploring sound waves & transfer of energy via analyzing the design and engineering of musical instruments. Participants will make an instrument and explain the energy transfer mechanism.



This workshop is most appropriate for grades 3-12. *STEM explorations and content varies according to length of workshop and grade levels.*