Project-Based Learning Through Science: EVERY Day for EVERY Child!

Presented by Stephanie Lester, MA

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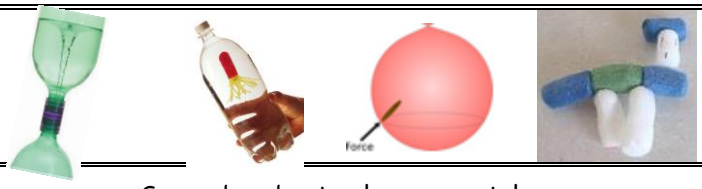
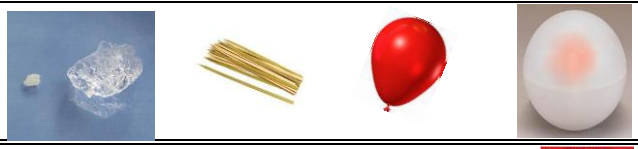
Experience first-hand how Project-Based Learning through science activities will bridge the gap between all curricular areas while offering highly engaging activities in which every student will experience SUCCESS!

Introduction – Project-Based Learning	**Law of Gravity activity**
	Tornado tubes - Cartesian Divers Water gel - Centripetal force (balloon/penny) Cornstarch peanuts
Superabsorbant polymer crystals Rainbow tubes - Color mixing Balloon/skewer – Energy ball	

Resources to Support PBL:

Year Round Project-Based Activities for STEM grades 1-2 (Lester,Stephanie, 2013,ISBN 1420630253)
Teaching STEM in the Early Years (Moomaw, Sally, 2013, 978-60554-121-1)
Young Investigators: The Project Approach in the Early Years, 2nd Ed,(Harris Helm, Judy & Katz, Lillian)
Science Through the Year (Lester, Stephanie, 2007, 978-1420687705)
Buck Institute for Education: www.bie.org

Commit to introducing your students to at least one PBL experience each week!

Project-Based Learning

Children are naturally full of curiosity and love to investigate. The Project-Based Learning (PBL) approach to teaching is inquiry-based which is defined as the process of asking questions and trying to find answers for those questions. Using this teaching approach effectively requires a combination of introducing engaging materials yet balancing the fun with the purposeful integration of connective activities that encourage the development of high level critical thinking skills.

Project-Based Learning, simply put, is *learning-by-doing and* tends to be deeper learning that is more relevant to students and thus remembered longer. We need to educate students to be global competitors and to do so, we must require them to think creatively, to take risks, and put what they are learning into practice.

Project-Based Learning spells SUCCESS!

- **S**elf-Selected activities – develops decision-making and increases engagement
- **U**tilize Resources - uses for technology as a tool to develop digital literacy—performing tasks effectively in a digital environment by incorporating interactive white boards; Skype; videotaping; publishing to create props such as labels, signs and charts. Uses for a wide variety of materials to encourage exploration and discovery.
- **C**reativity — activities that allow for innovative strategies or solutions to be shared; (a reminder that creativity is not for the select few—we can all be creative with practice)
- **C**ritical Thinking — open-ended questions or prompts that lead to higher level thinking, risk-taking, and investigation (solving problems versus finding the one correct answer)
- **E**ngaging Relevant Learning Experiences — activities related to students' lives make the concepts being taught more meaningful, and thus more memorable (global awareness activities)
- **S**kills for Organization — self regulation, planning, and sequencing to use the information provided or researched (learning how to implement ideas and use all the information gathered)
- **S**ocial Learning - in a classroom and via technology (helps students internalize their observations, initiate higher level thinking, and see the bigger picture) **collaborations, practice communicating** — **sharing** ideas, theories, discoveries; using appropriate vocabulary; demonstrating understanding through drawings, graphs, charts, etc. (developing social skills necessary to work in groups)

Collaborate and identify <u>at least three ways</u> that you can provide Project-Based Learning opportunities for the students in your classroom to develop these life skills.

Self-Selected Activities	**Utilize Resources**	**Creativity**
Critical Thinking	**Engaging Relevant Learning Experiences**	**Skills for Organization**
Social Learning	**Project Based Learning is**	

Project Based Learning spells:

S elf-Selected

U tilize Resources

C reativity

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S ocial Learning