Today's Presentation  

GoSoapBox.com  
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An audience poll-- tell us what you want to get out of today's session, let us know if you are confused & ask your questions

Feedback Survey  
https://kahoot.it/
STEM
Science, Technology, Engineering, and Mathematics

STEAM
Science, Technology, Engineering, Arts and Mathematics
“STEAM is a popular movement that was founded by Georgette Yakman in 2007 to promote and integrate design and art in STEM fields. She defined the movement as ‘Science and Technology, interpreted through Engineering and the Arts, all based in elements of Mathematics.’”
“As STEAM focuses on integration of content, pairing STEAM with PBL can hit not only STEAM content, but also content outside of the core STEAM subjects. English can be integrated, as well as foreign languages and social studies. It's all about designing effective PBL that targets these content areas... these two approaches can capitalize on each other's strengths and fill each other's potential gaps.”

From Andrew Miller’s PBL and STEAM Education: A Natural Fit
“Project Based Learning is a teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to a complex question, problem, or challenge.”
Oscar’s Ocean

Science Observation Journal

The animal that I learned about was: Eels

3 Interesting things that I learned about the animal were:

1. Some eels don’t have any teeth.
2. They have babies.
3. They live in fresh water and they also live in salt water.

Over in the ocean in a coral reef lived

3 = Brkundu
2 = Srdfish
and 2 = Eles

Wow, I can’t believe all the amazing animals living in the ocean!

3 + 2 + 2 = 7 ocean animals

Lesson Plan for Unit
Drought Unit

The Water Clerk

- Tube gets the dirt and water from the sewer and the other pipe gets clean water out. The bag is where the water gets clean.
What Should 2nd Graders Eat for Lunch?
The second graders were challenged to think about the frame, what should second graders eat for lunch, and designed a game in Scratch that would help other students learn what is healthy and what is not.
Leatherback PBL Unit

2nd Grade: How can I, as a citizen of the world, design a way to protect the leatherback sea turtle?

Students were tasked to create a product that answered this driving question.
Advice on creating integrated units

Time
- Planning
- Implementation

Organization
- Short-Term
- Long-Term

Content Knowledge
- State Content Standards/Common Core
- NGSS/Engineering Standards
- VAPA (Visual and Performing Arts) Standards

Collaboration
Tips for Implementation

• Limitations are self-imposed
• Think outside of the box
• Failure is an option
• Talking is not just allowed, it’s encouraged
• Use what’s out there—no need to recreate the wheel
• Time is your friend
STEAM Resources

- STEM to STEAM: Resource Roundup (Edutopia)
- STEAM resources and connections (StemtoSteam.org)
- PBS LearningMedia – The Design Process Poster (with short videos)
- STEM to STEAM: Resources Round-Up (Edutopia)
- Dive into the Maker Movement (Edutopia)
- 7 STEM Apps for Higher Order Thinking (Common Sense Education: Graphite)
- Arts Media (KQED)
- KQED Art Show
- How to Start a Makerspace at Your School (Mindshift)
- Getting Excited About Engineering (Mindshift)
Other Resources

Integrated STEM Education through PBL (Diana Laboy-Rush)

Project-Based Learning Resources
Buck Institute for Education (BIE)
BIE Youtube Channel
Gold Standard: Essential Project Design Elements
Gold Standard: Project Based Teaching Practices
PBL World (in Napa, June 22-26, 2015)
PBL Project Template (via Edutopia & New Tech High)
Bullis Resources

STEAM PBL Template
Kindergarten Oscar’s Ocean
1st Grade Kidstown Unit
1st Grade Drought Unit
2nd Grade Nutrition Unit
We’d really appreciate your thoughts.

Please take a few moments to complete the our feedback form. It’s available both digitally and in print.

Contact Us

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