ENGINEERING + DESIGN THINKING

MICHAEL KUENLEN
mkuenlen@gpb.org
GET ALL THE RESOURCES!

JOIN.NEARPOD.COM to follow along

BIT.LY/3JKXCCZ to access the agenda

*I’ll email all attendees afterwards*
01 FOUNDATIONS
Physics and Engineering

02 DO-IT-YOURSELF
Simple hands-on activities

03 DESIGN THINKING
Processes + approaches

04 PROJECT-BASED
Curriculum resources
How to Edit
Click Edit This Slide in the plugin to make changes.
Don’t have the Nearpod add-on? Open the “Add-ons” menu in Google Slides to install.
How is the engineering design process like a taco party?

LET'S POST OUR INITIAL THOUGHTS
How is the Engineering Design Process like a Taco Party?
01

FOUNDATIONS

Background materials + explanatory videos
RESOURCES FOR ALL AGES

MIDDLE + HIGH
Full physics curriculum with materials as well as hundreds of videos from NASA + NOVA

ELEMENTARY
Exploration of Ga Tech plus PD resources for bringing engineering into the classroom
Welcome to *Physics in Motion* – a new digital series for high school physics from Georgia Public Broadcasting! The series is comprised of seven units of study divided into segments. Under each segment, you will find support materials designed to provide variety and reinforce concepts. A teacher’s guide is available and can be downloaded for free.

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MUDDIEST POINT

What was the most confusing or least clear past of that vide to you?
Georgia Tech's Invention Studio | Live Exploration

You May Also Like
- Atlanta Symphony Orchestra | Live Exploration
- Okefenokee Swamp | Live Exploration

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DO-IT-YOURSELF!

Easy crafts and activities at home
FROM THE BASIC TO THE COMPLEX

IDEAS FOR KIDS
Easy crafts and fun activities

SIMPLE PROJECTS
Build, hack, and test your creations!

EXPERIMENTS
Find out why things in nature do what they do
Zoom

ZOOM is packed with fun and engaging activities for students to do independently or as part of a group. Using a multidisciplinary, content-based format, these resources teach children how to take an active approach to learning—to ask questions, create, experiment, and have fun!

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Students can explore the world of science and engineering with this collection from DESIGN SQUAD NATION. Use these resources to help your students gain a stronger understanding of the design process and the connection between engineering and the things we use in everyday life. The DESIGN SQUAD NATION Collection equips students with the tools and lessons they need to develop their own ideas and projects. This collection includes videos, documents, and interactive activities that can be used in the classroom or at home. It's a great resource for educators who want to incorporate science and engineering into their curriculum. 

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Do-It-Yourself Demonstrations

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CLAIM.
EVIDENCE.
REASON.

THE GOLF BALL BOUNCING SUPER HIGH HAS TO DO WITH...
Instructional Strategy

Claim, Evidence, Reasoning (CER)

Published: September 16th, 2020

Whole Class, Individual
6th, 11th, 12th
20 - 30 Minutes, 10 - 20 Minutes

Downloads

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How do engineers solve problems?
THE ENGINEERING DESIGN PROCESS

DEFINE the problem
IDENTIFY constraints on your solution (e.g. time, money, materials) and criteria for success

COMMUNICATE your solution

BRAINSTORM multiple solutions for the problem

ITERATE to improve your prototype

SELECT the most promising solution

TEST and evaluate

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NOVA: The Design Process

What does innovation look like, and how can one generate innovative ideas in the classroom? This collection is built around "design thinking" and is intended to help educators and learners explore the invention of real, practical solutions to some of the world's most pressing problems.

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ROSE, THORN, BUD (POSITIVE, MINUS, NEW)

**ROSE**
List something that you like about Amy’s career

**THORN**
List something that you are uneasy about or dislike

**BUD**
What new ideas come to mind?
04
PROJECT-BASED LEARNING
Real ideas for the classroom
How to Edit

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Marshmallow Challenge is Easy!

Step 1: Schedule a Meeting
Find 45-60 minutes when your team can fully engage in the challenge. I've run challenges with groups containing as few as four people to as many as 800 people. Ensure that you have tables for each team.

Step 2: Assemble a Kit for each Team
In advance of the meeting, create a marshmallow challenge kit for each team, with each kit containing twenty sticks of spaghetti, one yard of masking tape, one yard of string and one marshmallow. These ingredients should be placed into a paper lunch bag, which simplifies distribution and hides the contents, maximizing the element of surprise.

- Spaghetti: Ensure that you use uncooked spaghetti. Avoid spaghettini as it is too thin and breaks easily. Fettucini is too thick.
- String: Include string that can be easily broken by hand. If the string is thick, include scissors in your kit.

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Project Credits:

We are incredibly grateful to the following educators for offering their expertise, and for providing valuable input and feedback during the development of Engineering for Good.

Engineering for Good is a three-week, project-based learning unit for middle school science classrooms focused on developing solutions for negative impacts of plastics on the environment.

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THANK YOU FOR ATTENDING!

Stay in touch!

Michael Kuenlen
mkuenlen@gpb.org
@mkuenlen