ENGINEERING + DESIGN THINKING

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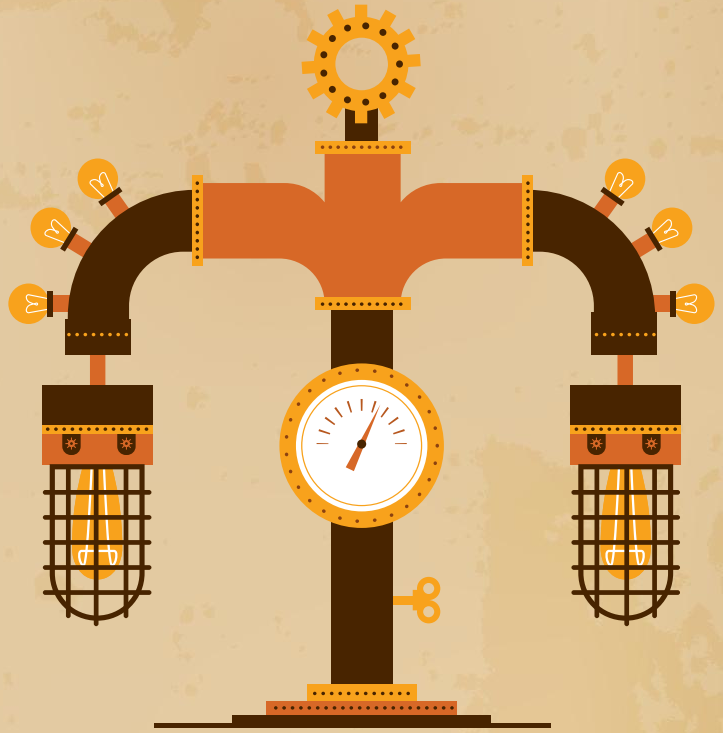
GET ALL THE RESOURCES!

JOIN.NEARPOD.COM to follow along

BIT.LY/3JKXCZ 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

Web Content

Resources for Engineering and ...

PBS LearningMedia

Teaching Strategies

Corporate-Sponsored Curriculum

Life-long Learning Begins Here

Resources for Engineering and Design

DIY Activities, Design Thinking, and Project-based Learning

GPB Education ∘ PBS LearningMedia

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PBS LearningMedia
gpb.pbslearningmedia.org

PBS LearningMedia offers a searchable repository of digital collections (150K +) based on PBS shows. All resources can be streamed, shared, saved, and curated for an efficient and engaging instructional experience.

PBS Collections

PHYSICS IN MOTION (GPB)
https://gpb.pbslearningmedia.org/collection/physics-in-motion/
This new digital series for high school physics is comprised of seven units of study divided into segments with support materials designed to provide practice and reinforce concepts.

GEORGIA TECH LIVE EXPLORATION (GPB)
https://gpb.pbslearningmedia.org/resource/5ec5884a-131d-4cf0-bb83-2b26c65338ce/georgia-techs-invention-studio-live-exploration/

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Click Edit This Slide in the plugin to make changes.

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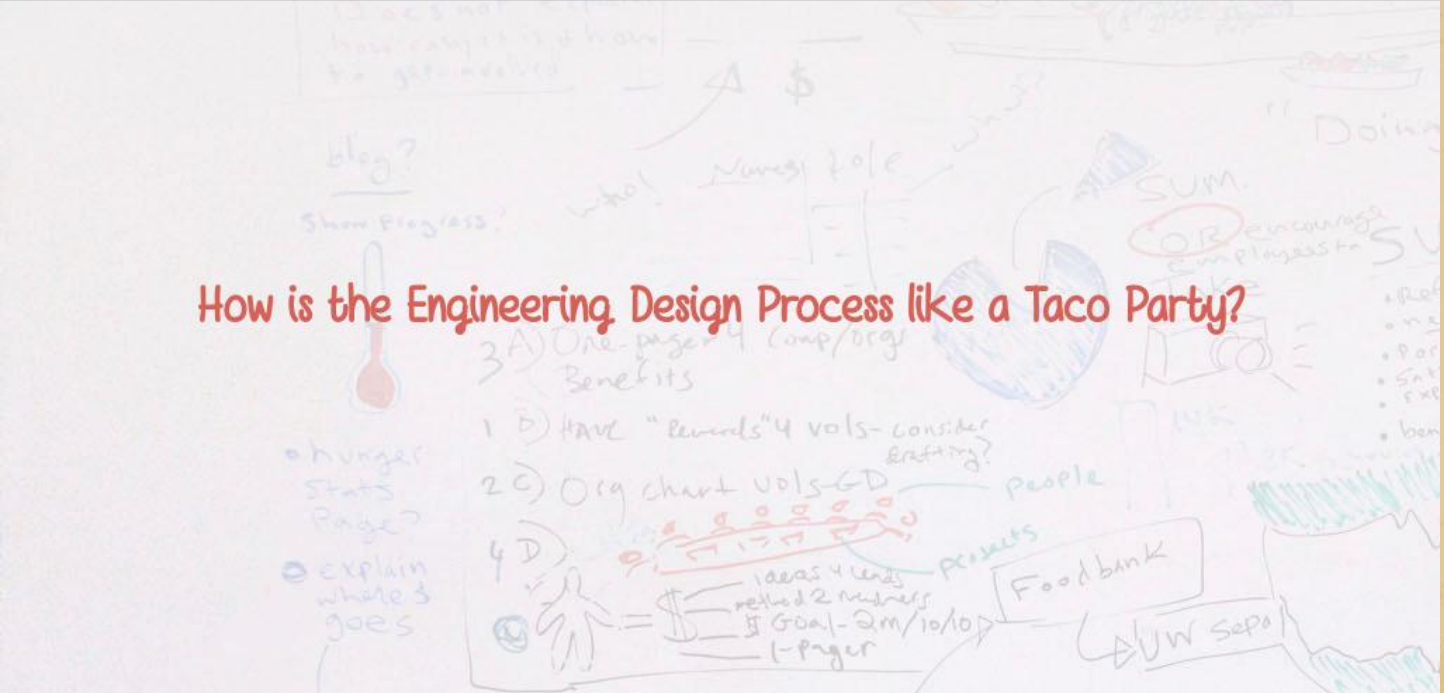
How is the engineering design process like a taco party?

LETS POST OUR INITIAL THOUGHTS

Collaborate Board



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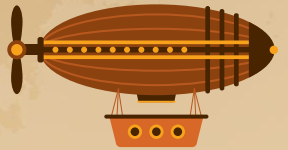
01

FOUNDATIONS

Background materials + explanatory videos

RESOURCES FOR ALL AGES



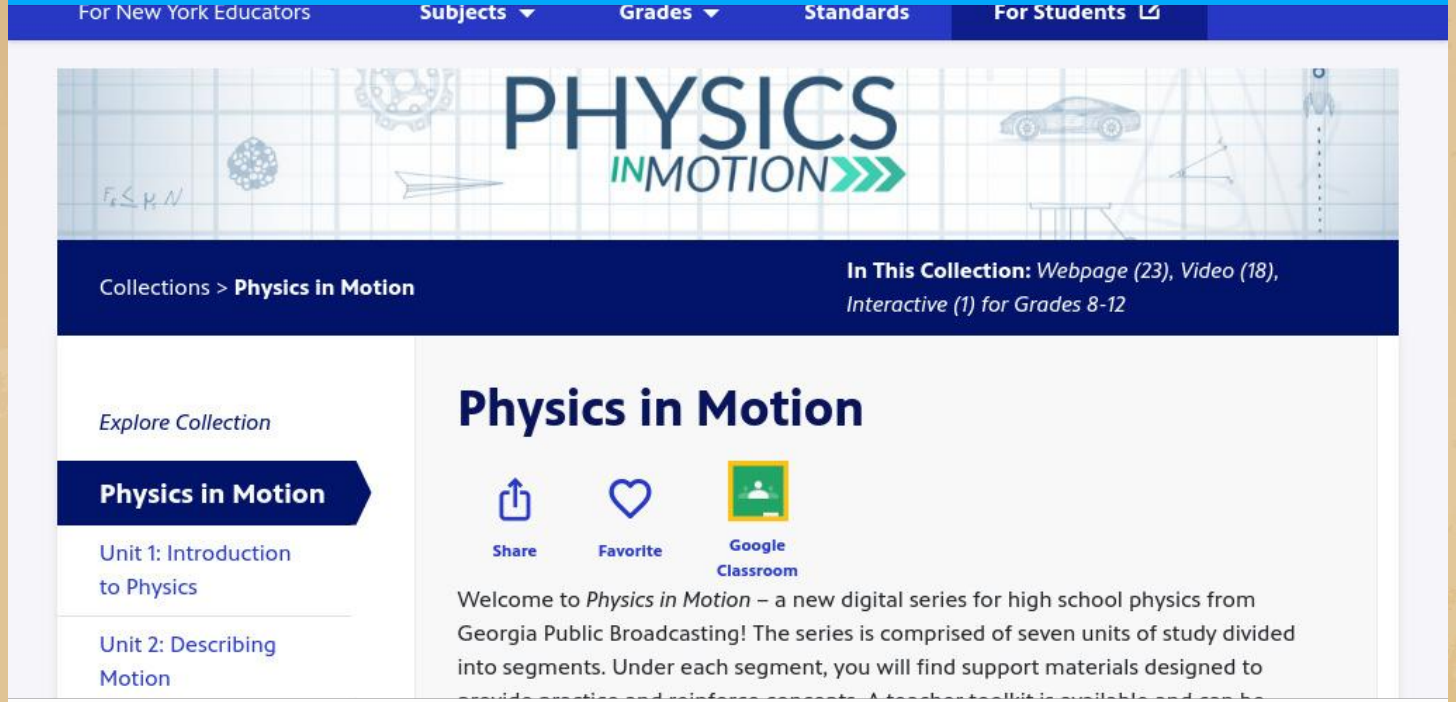
MIDDLE + HIGH

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

Web Content



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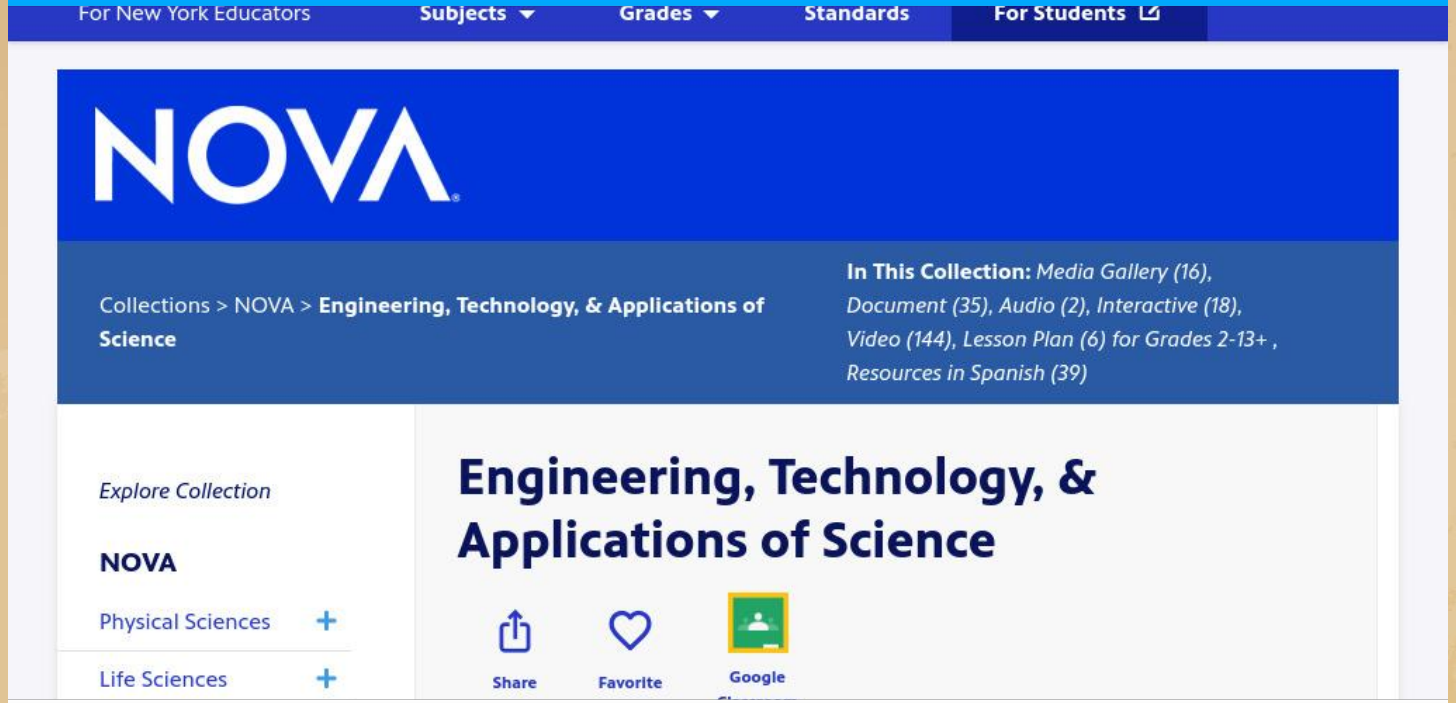

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MUDDIEST POINT

What was the most confusing or least clear past of that vide to you?

Web Content

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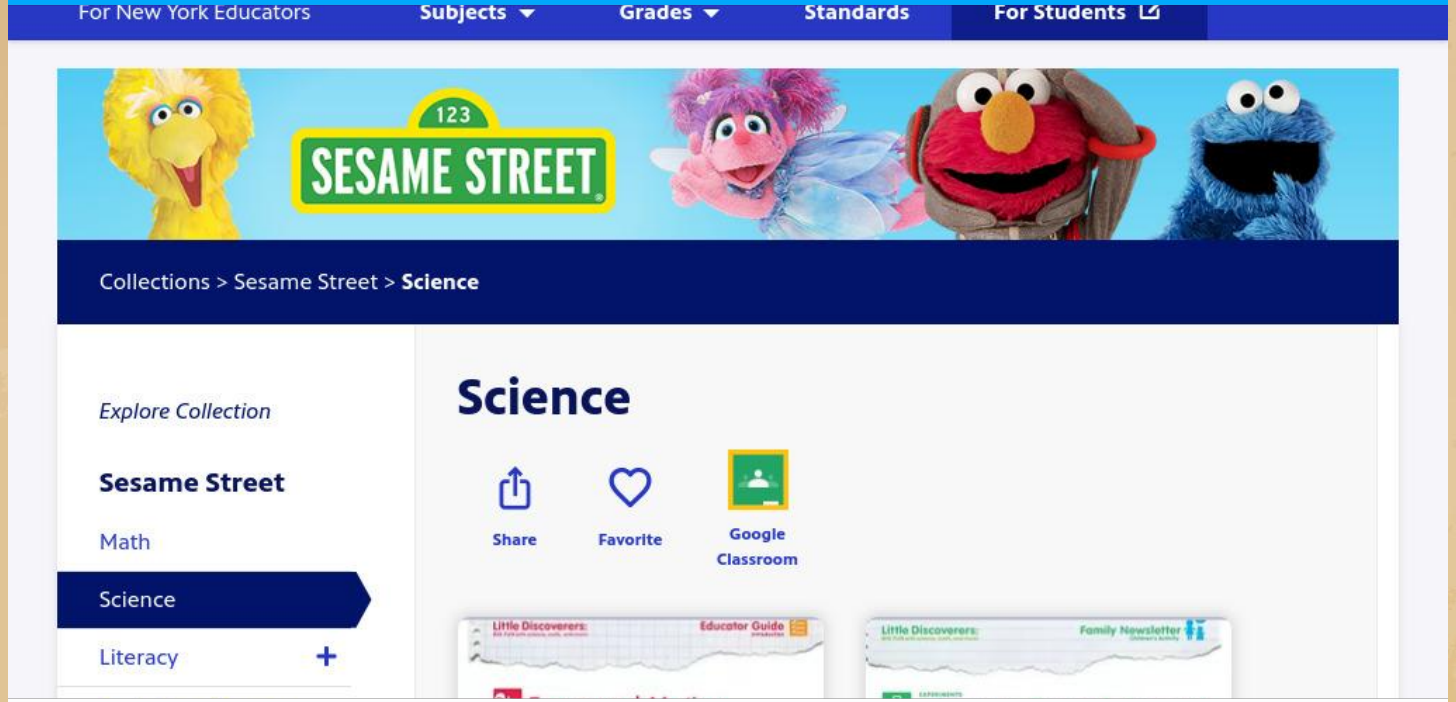

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02

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

Web Content

For New York Educators | Subjects | Grades | Standards | For Students

Collections > **Zoom**

In This Collection: *Video (172), Document (68) for Grades K-13+ , Resources in Spanish (26)*

Explore Collection

- **Zoom**
- Chemistry
- Engineering
- Physical Science

Zoom

Share | Favorite | Google Classroom

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,

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Web Content

For New York Educators | Subjects | Grades | Standards | For Students

DESIGN squad Nation

Collections > **Design Squad Nation**

In This Collection: *Video (96), Document (86) for Grades 1-8*

Explore Collection

Design Squad Nation

Electricity

Force/Energy

Design Squad Nation

Share | Favorite | Google Classroom

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

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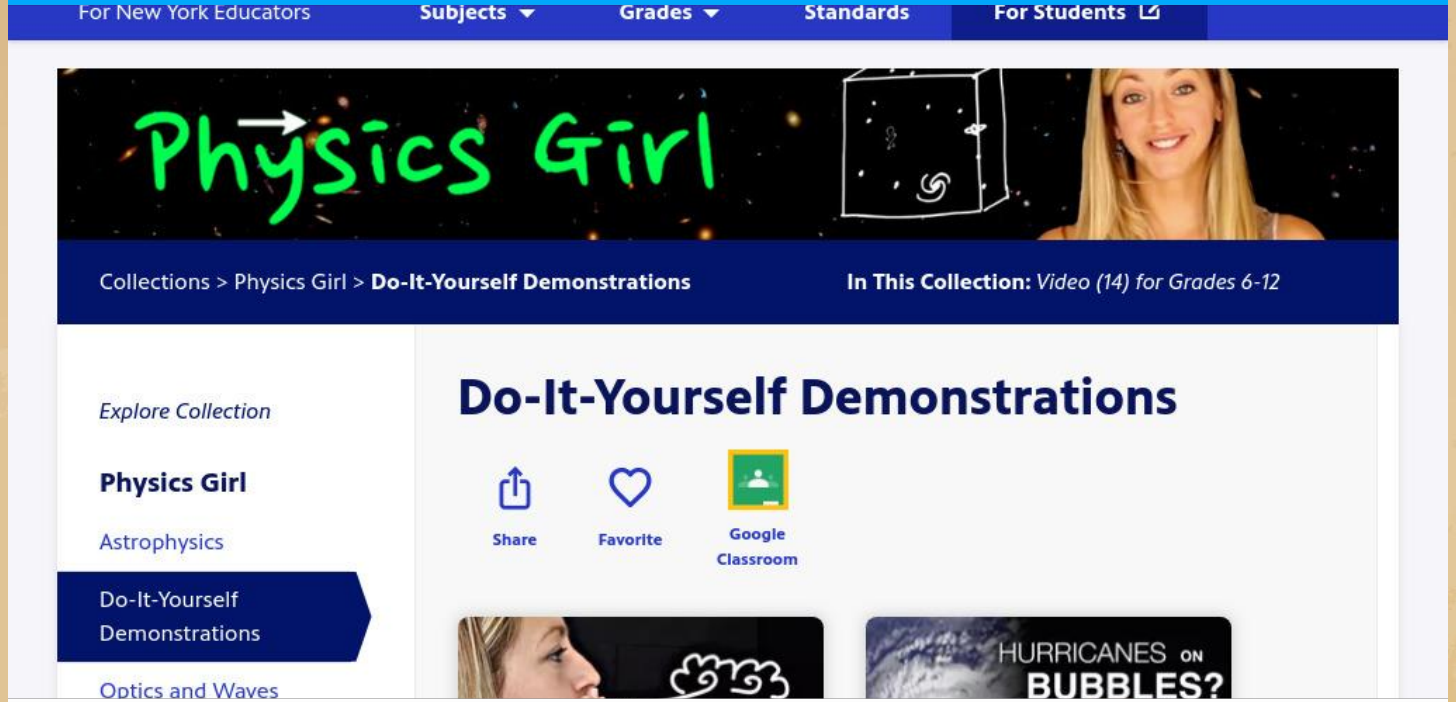

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CLAIM. EVIDENCE. REASON.

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

Web Content

Instructional Strategy

m, Evidence, Reasoning (CER)

r | *Published: September 16th, 2020*

Whole Class, Individual

6th, 11th, 12th

20 - 30 Minutes, 10 - 20 Minutes

Downloads

Download PDF

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03

DESIGN THINKING + APPLICATIONS

How do engineers solve problems?

Video

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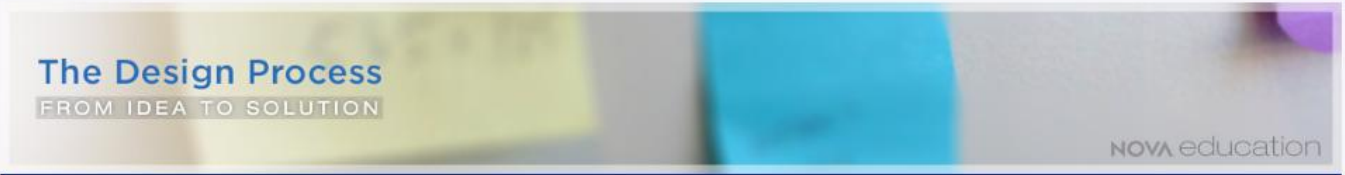
For New York Educators | Subjects | Grades | Standards | For Students



Collections > **NOVA: The Design Process**

In This Collection: *Video (4), Lesson Plan (4) for Grades 6-13+*

Funded by

U.S. DEPARTMENT OF ENERGY | Office of Science

For over 40 years, NOVA has been educating and entertaining millions of television viewers with media

NOVA: The Design Process

Share | Favorite | Google Classroom

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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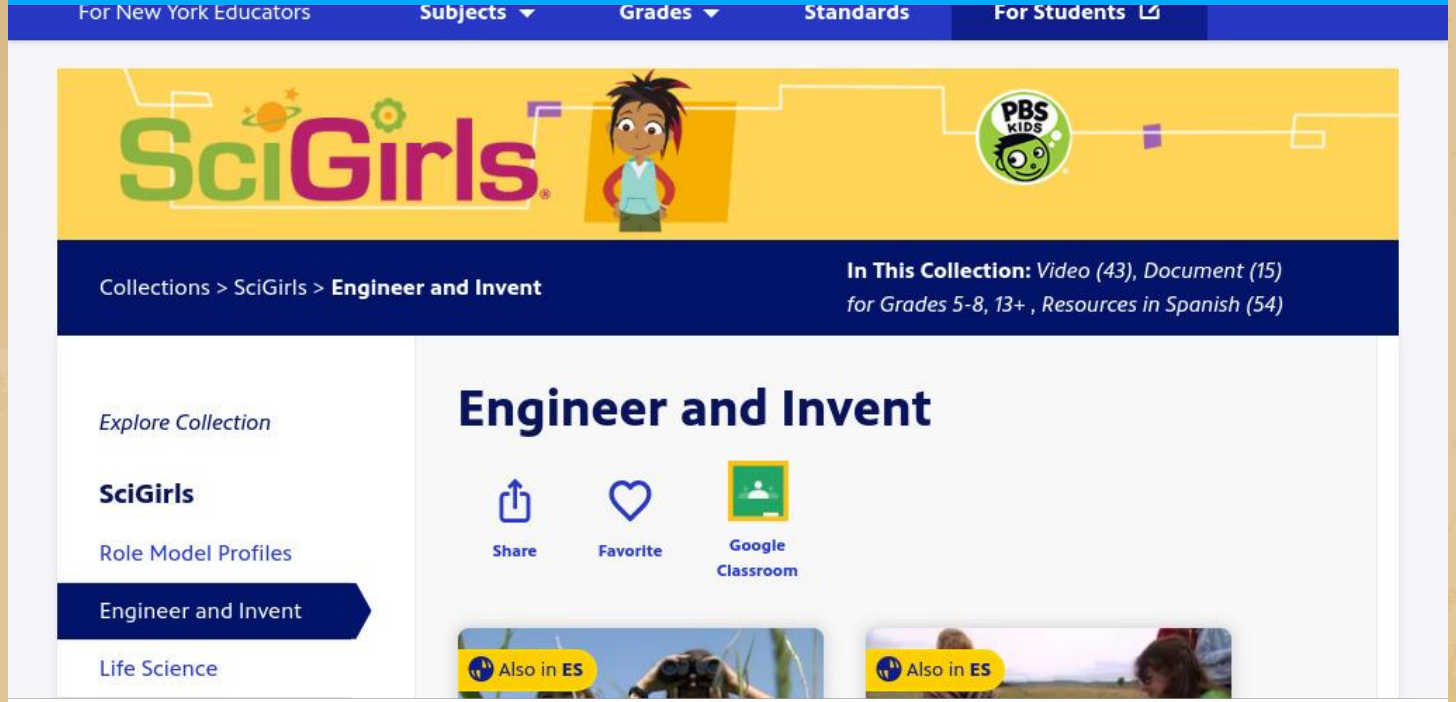

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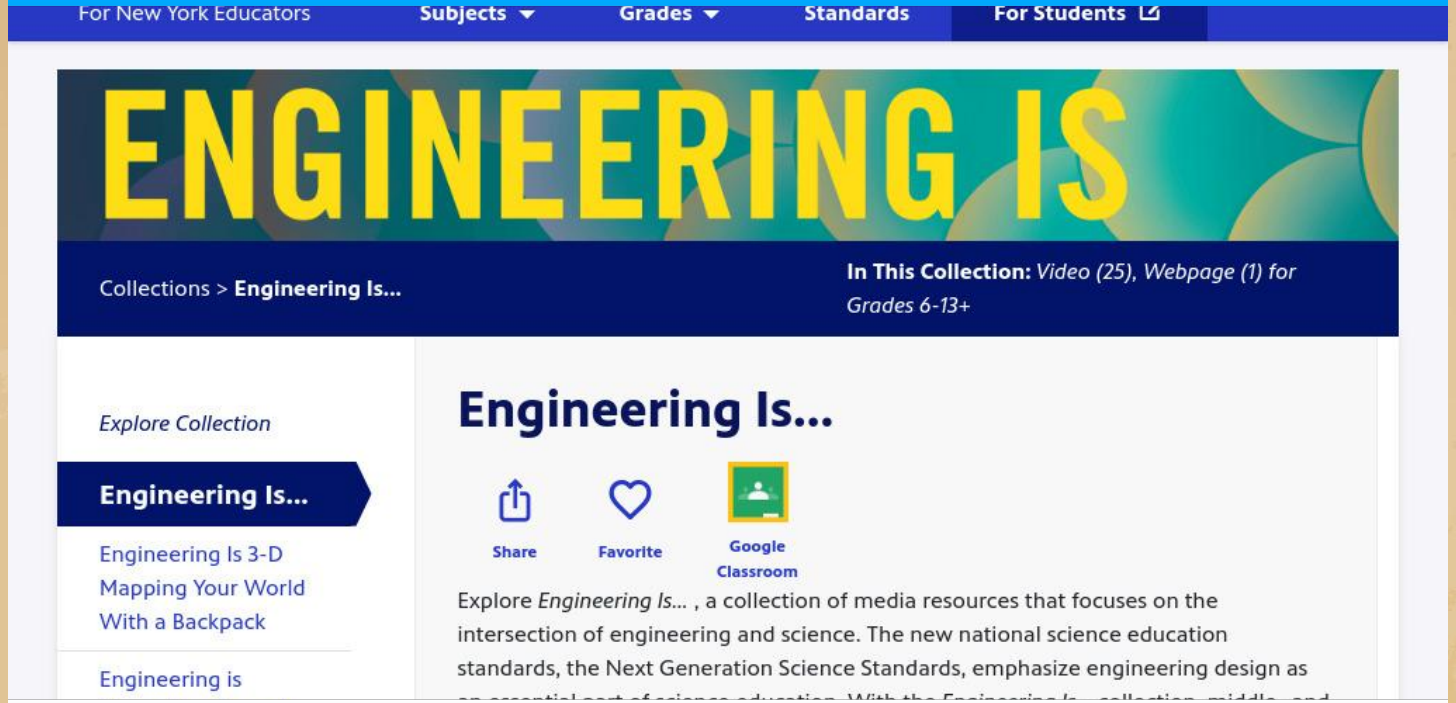

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ROSE, THORN, BUD (POSITIVE, MINUS, NEW)

ROSE

List something that you like about Amy' 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

Video

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PDF Viewer

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 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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Web Content

For New York Educators | Subjects | Grades | Standards | For Students

Engineering for Good

KQED Learning

Collections > **Engineering For Good**

In This Collection: *Video (2), Document (2), Lesson Plan (10), Webpage (1) for Grades 5-13+*

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

Engineering For Good

Share | Favorite | Google Classroom

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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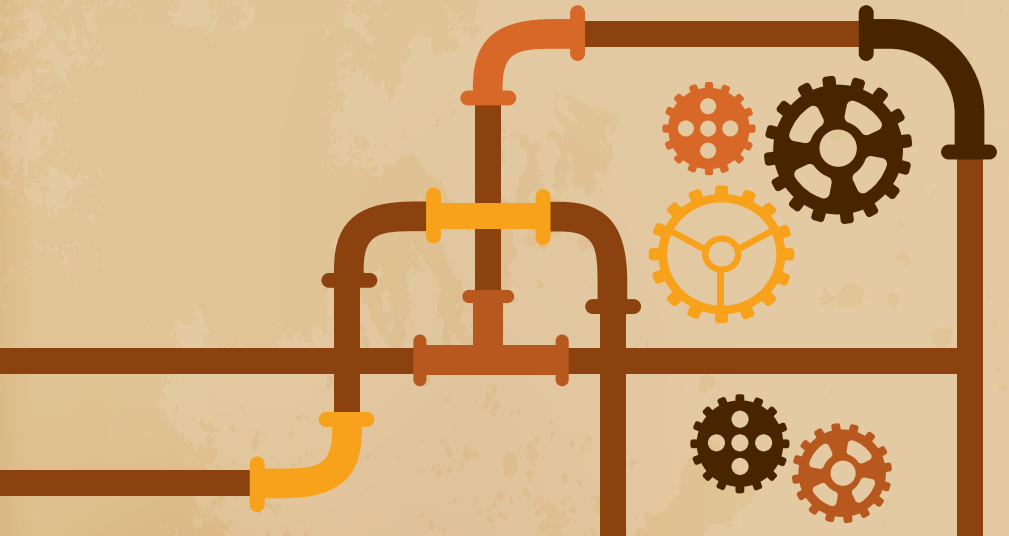
THANK YOU FOR ATTENDING!



Stay in touch!

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