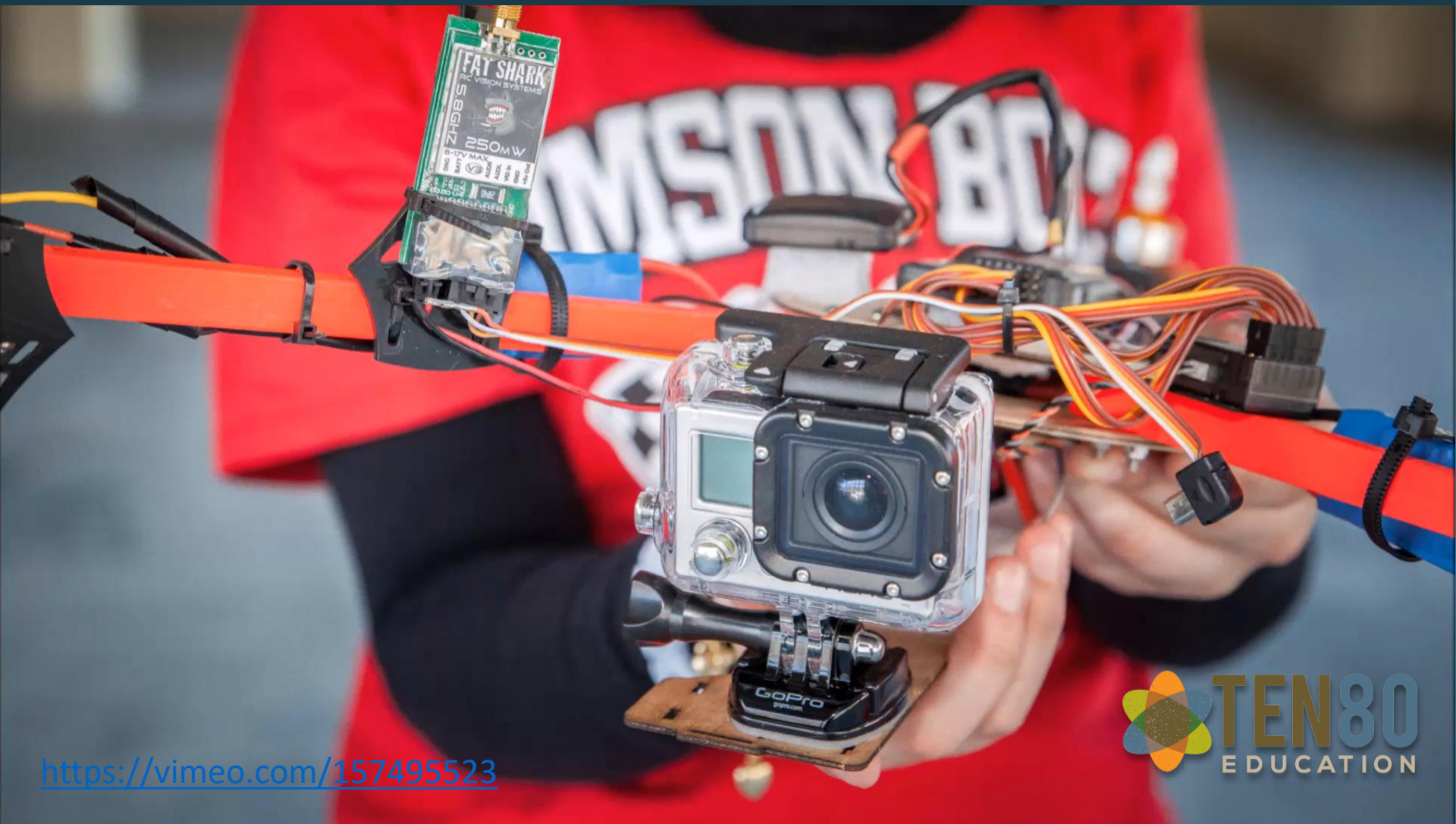


Innovation is a Process

Collaboration, Creativity and Mathematical Modeling
Yields Solutions to Real-World Problems, Big and Small

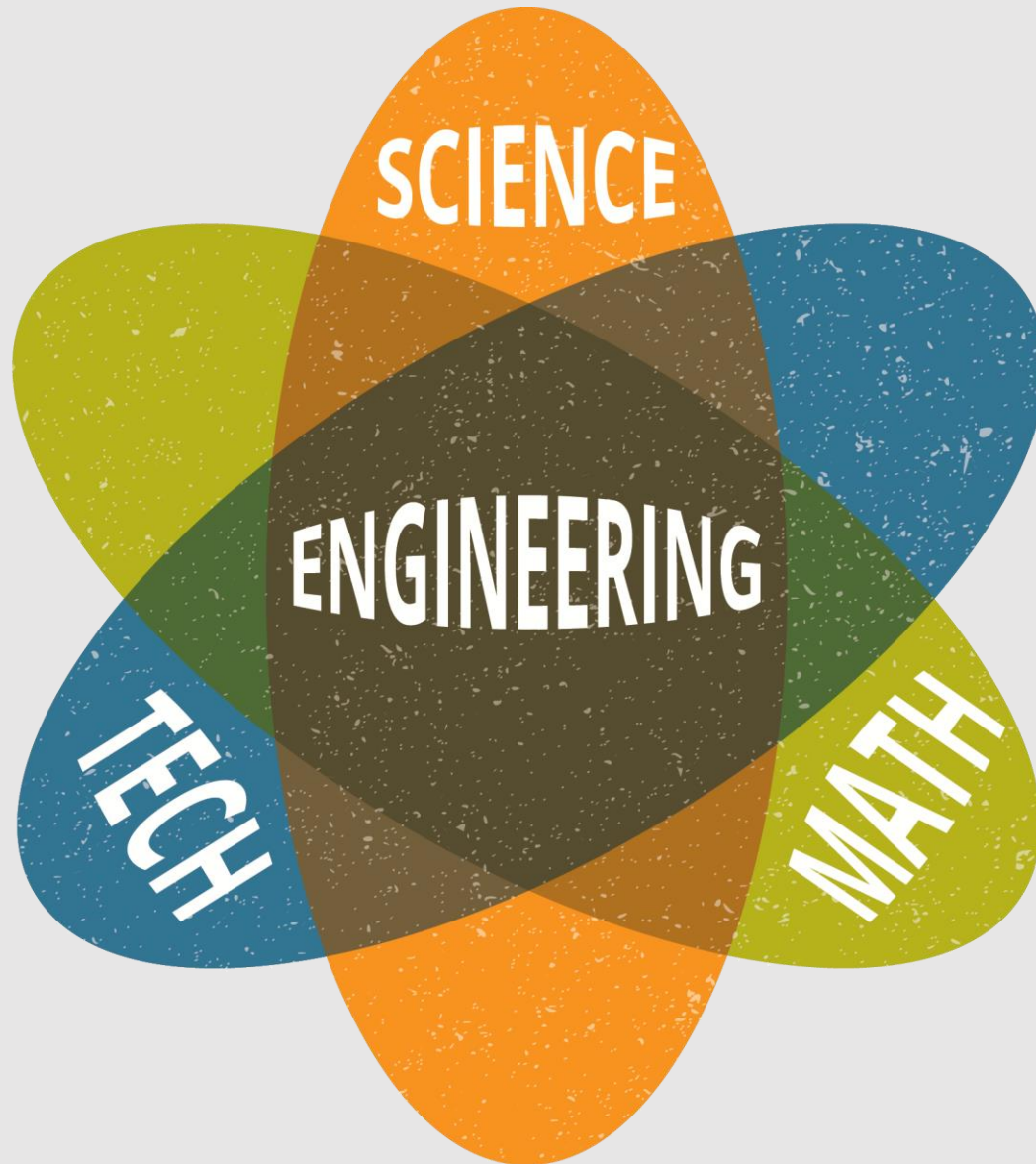


<https://vimeo.com/157495523>

Innovation is a Process

Collaboration, Creativity and Mathematical Modeling
Yields Solutions to Real-World Problems, Big and Small









But what about YOU?

Invention is an idea.

The creation of a product or introduction of a process for the first time.
It is patentable.

Innovation is the creation of value.

An improvement or significant contribution to an existing product, process or service.
It is valuable to the world.

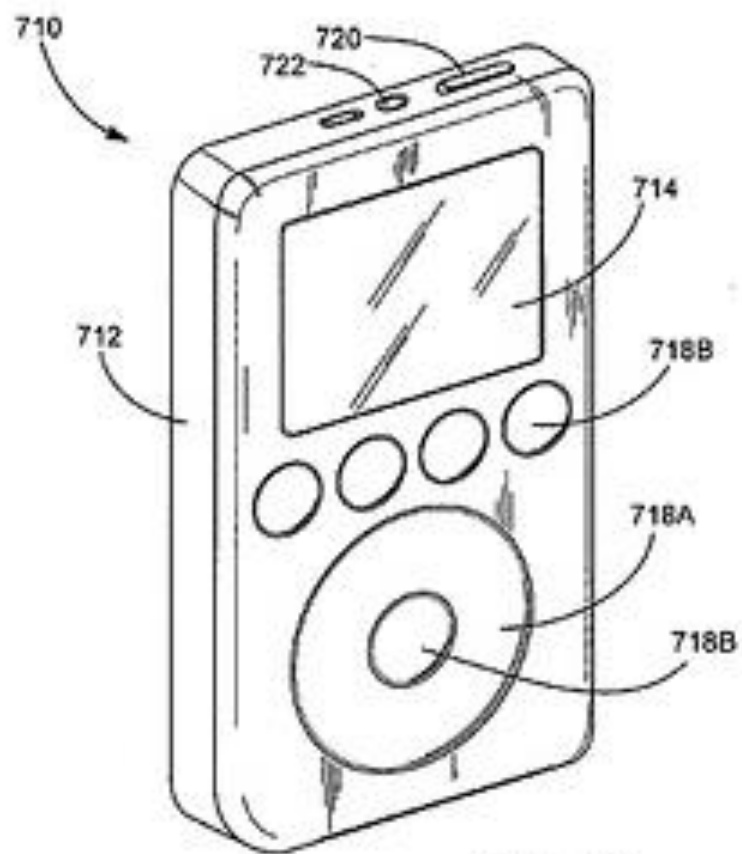


FIG. 18

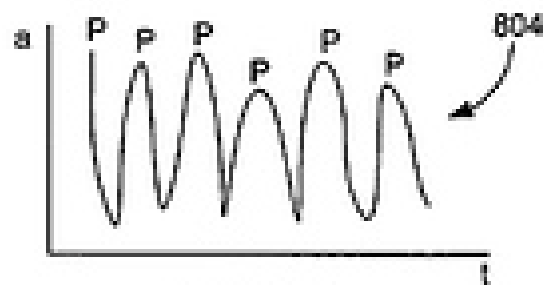


FIG. 21



FIG. 19

*“If **invention** is a pebble tossed in the pond,
innovation is the rippling effect that pebble causes.
Someone has to toss the pebble. That’s the inventor.
Someone has to recognize the ripple will eventually
become a wave. That’s the entrepreneur.”*

— Tom Grasty, PBS Idea Lab

Innovation =

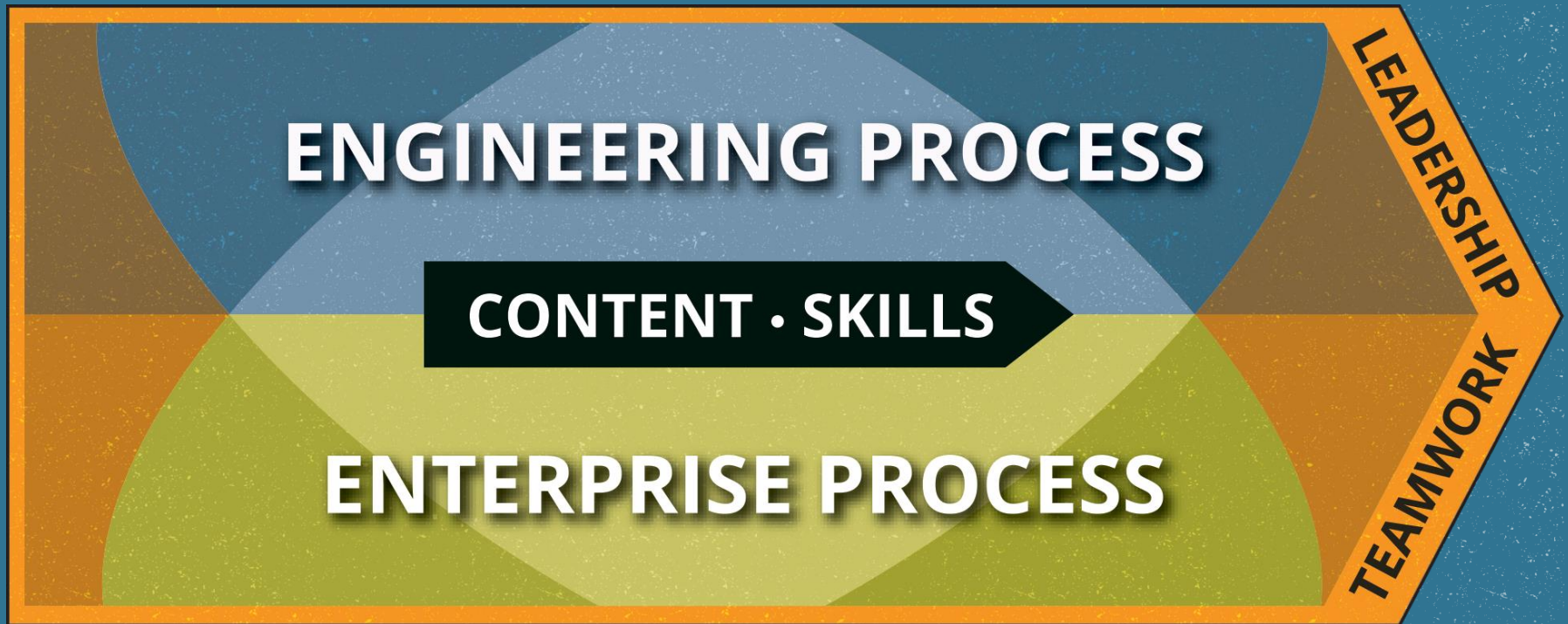
Invention x Commercialization



Innovation Culture

Foster it.

The Innovation Process





Enterprise

Model · Manage · Market

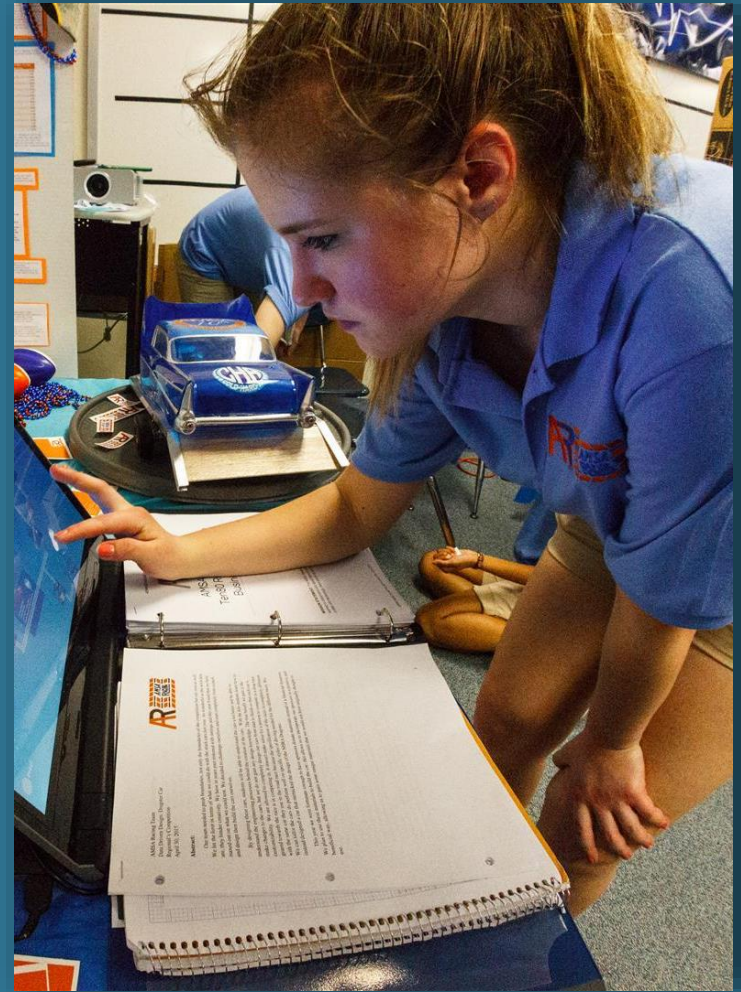
WHAT KIND OF LEADER ARE YOU?



**In order to think
outside of the box,
you have to know
what is inside of it.**

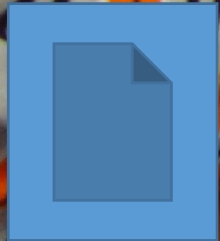
Major General Peggy C. Combs

Commanding General of
U.S. Army Cadet Command





**Simplicity after
the Complexity**

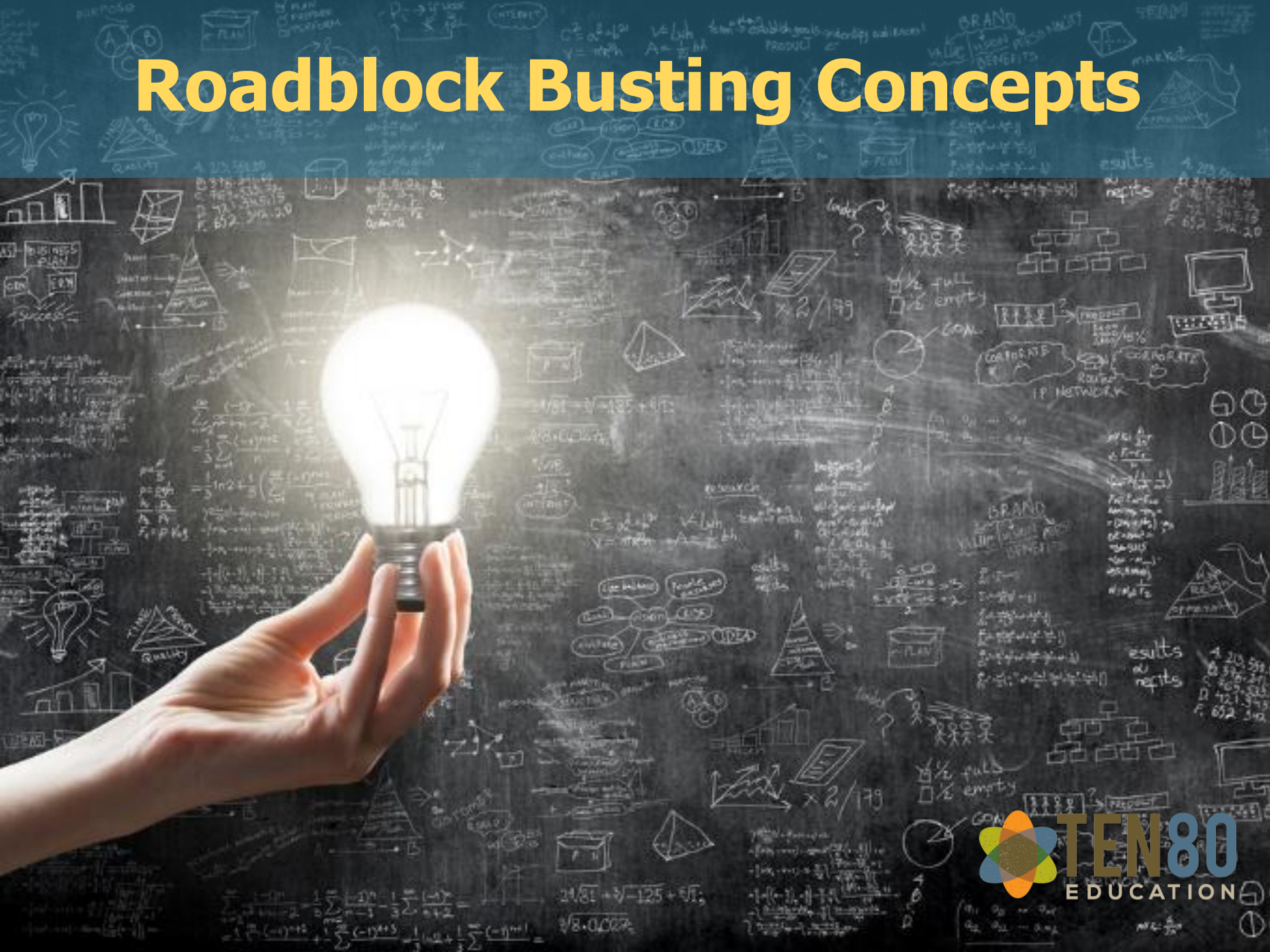


Data Collection

Run 1	Run 2	Run 3	Run 4	Run 5
Time	Time	Time	Time	Time
Temperature	Temperature	Temperature	Temperature	Temperature
Run 6	Run 7	Run 8	Run 9	Run 10
Time	Time	Time	Time	Time
Temperature	Temperature	Temperature	Temperature	Temperature
Run 11	Run 12	Run 13	Run 14	Run 15
Time	Time	Time	Time	Time
Temperature	Temperature	Temperature	Temperature	Temperature

Ms. Olatunde

Roadblock Busting Concepts



Roadblock Busting Concepts

DATA.SPARKFUN.COM 

data.sparkfun.com
a place
to push
your data.

Why are you building this?

We want to bring a dose of reality to the Internet of Things hype.

data.sparkfun.com is a free, robust service for use with all of your projects. The underlying engine is open source so if you don't want to use our servers you can install [phant](#) on the server of your choice.

Wait, this is totally free? What's the catch?

Yep. There are limits, but we wanted to give our users a good, free place to store data and give data scientists more fun things to analyze. Our hope is that you buy a SparkFun widget to connect your next beehive.

How do I use it?

We thought data storage should be as easy as string concatenation. First, create a stream and you'll receive a public url and a private key. Then, using the hardware of your choice (Ethernet shield, RasPi, BBB, Electric Imp, WiFly) simply create a string with the data you want to post. Here's a simple example:

https://data.sparkfun.com/input/Jxyjr7DmxwTD5dG1D1Kv?private_key=gzgnB4Vazklg7GN1g1qA&brewTemp=33.4

Go ahead and try it! Paste [the string above](#) into a browser window and hit return. You should see a confirmation message. Then view the results on the [the public stream](#). Congrats! You just added some data to the internet.

What types of projects would benefit from this service?

Create a free data stream immediately
at data.sparkfun.com

CREATE

Explore all of the public data
streams on data.sparkfun.com

EXPLORE

Learn how to create data streams and
post data to them.

DOCS

Configure and deploy your own copy
of the [phant](#) server.

DEPLOY

Help improve the service by reporting
any issues you encounter.

BUGS

MindBug Busting Concepts

How many Twizzlers
Does it take to
get from

San Diego
CA



Fairfield
CA

Assumptions:

- Every twizzler has 9 strands that can be peeled apart.
- Every strand is 9 inches long.
- Google is accurate and we can lay the twizzlers on the road the whole way.
- We need at least enough Twizzlers to surpass the goal.

Math:

- SD \rightarrow Fairfield = 517 miles
- 63360 inches = 1 mile
- $517 \times 63360 = 32,757,120$ in.
- Twizzlers = 9 strands \times 9 in = 81 in per real-world twizzler

$$\frac{32,757,120}{81}$$

= 404,409

Twizzlers

You can solve a problem with more
“unknowns” than knowns.

A large flock of birds, possibly starlings, is captured in mid-flight against a clear blue sky. The birds are concentrated in the upper half of the frame, creating a dense, textured pattern of white and grey. Below them, a landscape features several bare, dark trees with intricate branch structures. The foreground is a flat, grassy field. The overall scene conveys a sense of natural complexity and movement.

**Simplicity after
the Complexity**



Conversation Time?