

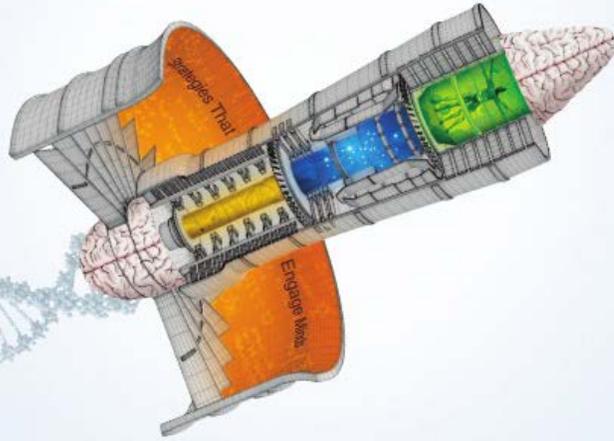


+ CONTENT & CHARACTER

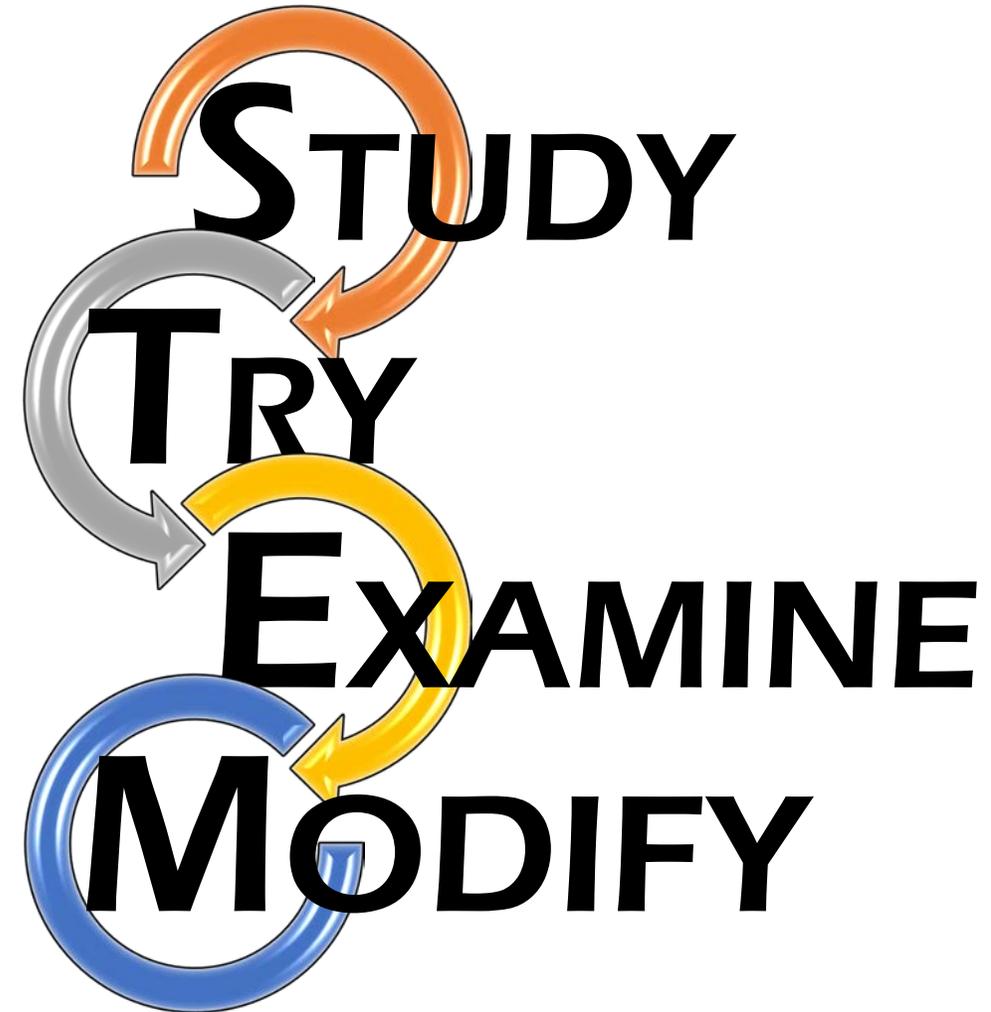
21st Century Skills

Strategies That Engage Minds®

Empowering North Carolina's Economic Future



SMT North Carolina Science,
Mathematics, and Technology
Education Center



- ~ STEM has been defined as Science, Technology, Engineering and Math.
- ~ Excluding (unintentionally) in middle school those that could do it but aren't calculus tracking.
- ~ Pre-engineering classes in HS have primarily the top math and science kids in them. Some have AP credit attached.
- ~ We took the kids already tracking towards careers in technology areas and gave them a label and kicked others out.
- ~ In an attempt to make the tent bigger, it is now an umbrella.

WHAT ARE WE GETTING vs. WHAT DO WE NEED

Test Passer vs. Learner

Task Completer vs. Problem Solver

Answerer vs. Researcher

Grown vs. Growing

-
- ~ We have established – as a greater measure of “success” than ever before – that tests are THE measure.
 - ~ Not just the student (bad enough) but the teacher and the school, suboptimizing learning to a test based process.
 - ~ Teachers over time will/have morphed to structure that grades success around similar measures (content, tests, etc.).
 - ~ Further, technology in an ironic twist makes using tests easier as a measure (auto-creates and auto-grades the test).
 - ~ It is easier than ever to memorize your way through school, the antithesis of what a business needs in an employee.

Collaboration depends on topic knowledge mastery and executing in the generational or background/skill/educational/experiential gaps

In business, they are the only one of them at the table representing an aspect of the issue (engineer, quality, scientist, business manager, etc.). In class/school, they all have the same content. So, why not explore cross grade, cross school, incorporate industry reps on the project teams. Make it look like work will look when the graduate.

Being in charge of someone your mom's age is tough, in how they deal with authority and how they absorb information – for example. We are in a four generational workforce now. In school, authority and age/experience are tied together at school. The teacher or principal is also older than the student and in charge. What happens when they are in charge of someone older? Flip a class or forcing kids into situations where they are running meetings, etc. Or bring industry in and let us be directed by the students on a project or effort or collaboration of some sort. Students conducting an adult band. You get the idea.

Blue collar and white collar (leverage expertise vice “roll in” as the engineer). This is hard in part because they've been told engineers are important and decision makers. You never get a second chance to make a first impression and the artisan workforce is ready to break in the new engineer. Not in a combative way . . . They want the help and partner. But not in a way that reflects how smart that new hire is or isn't. The competitive nature in school has elevated a subset of kids to compete with their knowledge (I'm smarter than you) . . . and it is starting to spill into non-engineering workspaces.





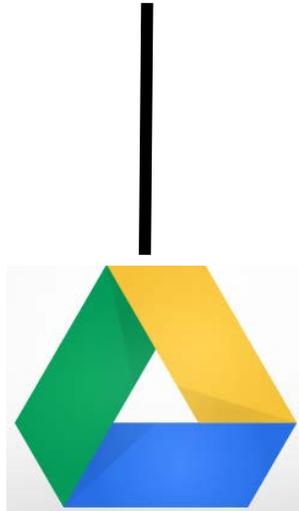
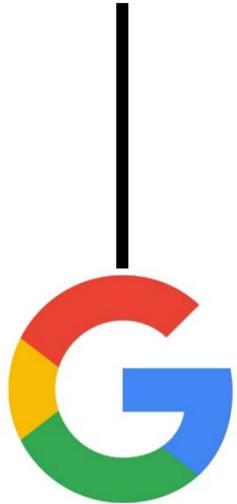
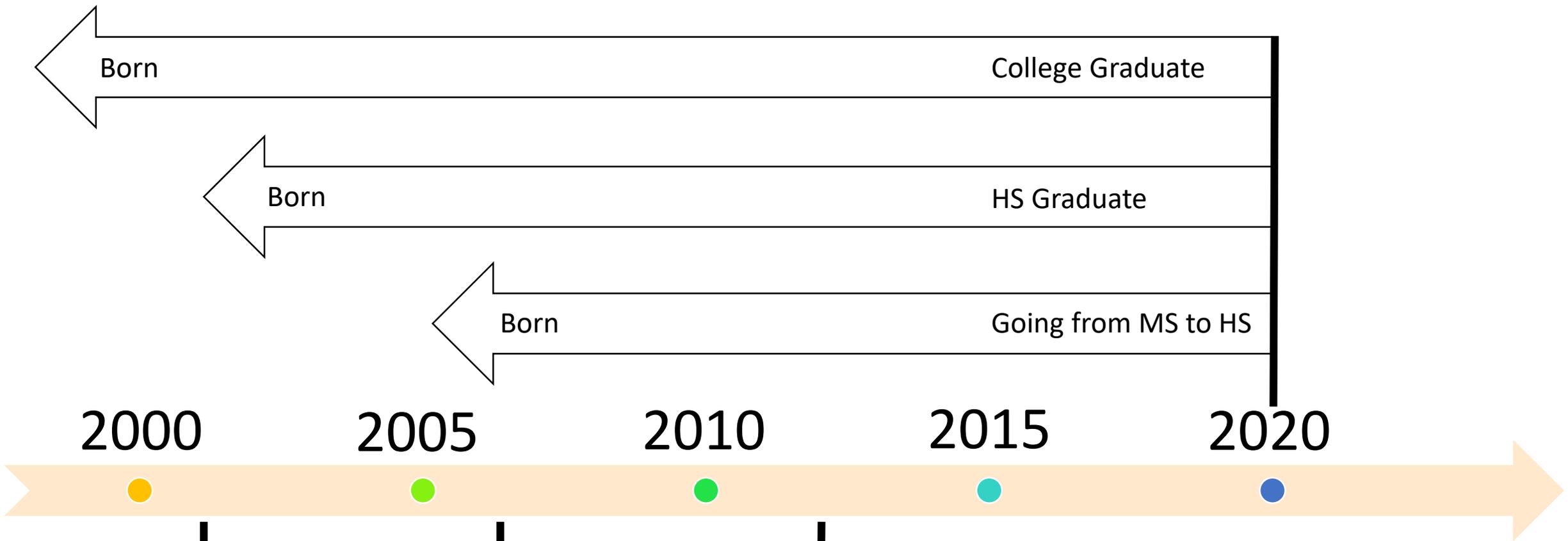
Then -----



And Now

ENGINEER GEEK

- ~ Communication isn't public speaking . . . Or presentation skills.
- ~ Business used to, not even a decade ago, have a marketing department. We put engineers behind a door and slid pizzas under the door to feed them . . . Or in a cubical and dropped candy bars over the wall. But what they didn't do is talk to anyone outside the company or frankly even anyone other than engineers.
- ~ Now, everyone is connected and therefore in marketing. Their contact info is available. They are connected in two or three ways minimal (e-mail, desk phone, cell phone). And therefore anyone can call anyone.
- ~ PRACTICE . . . How about projects where the "problem" is from industry? Real or mock. Someone they DON'T know. Not a teacher or another teacher or a principal or a parent or a friend. Someone from industry. Takes an hour of our time. But starts the kids on the journey to learn how to communicate past all of the wrong ways to do it. From skills (don't talk to the screen, don't rock, don't fig leaf) to the professionalism ones (how to dress).



~ New hires only demonstrated go-to method is performing a search for the information.
 ~ The beauty of that is if it exists or pieces of it do, we get an answer to the problem faster than we ever would have.
 ~ The downfall, they don't know what to do when it doesn't. They need to know what to do when the DON'T know what to do. They haven't developed – from our observation – the creativity components necessary.



UNITY OF EFFORT

Organizational Confusion between the language of business and that of education

Oppportunity to Start Fixing it is NOW (as it'll take years to realize the investment)

Responsibility is on US in business as much (or more) that it is on YOU in education

Adjust our thinking (on the 4C's and on the resulting output of education)

Help students connect their skills, passions & talents to a future (on US to help YOU)

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