

- I. For those who haven't been paying attention: How did we get here?
 - a. A Nation At Risk – 1983 / Reagan

"If an unfriendly foreign power had attempted to impose on America the mediocre educational performance that exists today, we might well have viewed it as an act of war."
 - b. No Child Left Behind – 2001 / G. W. Bush

"...setting high standards and establishing measurable goals could improve individual outcomes in education"

"requires states to set "one high, challenging standard" for its students."

"Standardized Tests, Annual Yearly Progress, Vouchers & Punishment"

"Teaching to the test"

"Just change the test!"

"2/3 of elementary school teachers indicated that they were not familiar with national science standards."
 - c. Race to the Top – 2009 / Obama – more TESTING
 - d. Indiana adopts Common Core 2010 – change everything
 - e. Indiana dumps Common Core 2014 – change everything, again
 - f. Every Student Succeeds – 2015 / Obama

"Specific revisions include providing funds for states to implement a broader range of assessments to evaluate advanced academic skills, including students' abilities to conduct research, use technology, engage in scientific investigation, solve problems, and communicate effectively."
 - g. Vouchers, Charters, Common Core, Confusion, Politics, "Insanely Independent"
 - i. *"...uncertainty and anxiety" for teachers who have spent the past few years rewriting lesson plans and undergoing training. "I don't think this current slapdash effort to create new standards serves anyone, especially kids, very well."*
 - ii. Trump appointed Amway heir as Secretary of Education
 - h. 2021 results: <https://in.chalkbeat.org/2021/7/14/22576050/look-up-your-indiana-2021-ilearn-and-istep-test-scores>
 - i. Fewer than half pass both Math & English tests; Urban schools < 10%
 - ii. but during COVID: "poor results won't affect accountability measurements such as school A-F grades, teacher evaluations, or identifying low-performing schools for intervention."
 - i. [Career Technical Education \(CTE\) excels.](#)
 - j. Indiana spends \$8B/yr for K12 schools on 1.12M students. About \$7K/student.
 - i. Indiana average teacher pay: \$52,06-\$68,869.
 - ii. Masters degree [average \\$66K.](#)
 - iii. Lawmakers attempt to pass [Parental Control](#) Bill (like Florida just did)
 - k. [Lilly isn't impressed.](#)

- II. A 19th Century model doesn't fit in a 21st Century world – Cautions & Alternatives.
 - a. Google, YouTube, Lynda, Reddit, ad infinitum
 - b. Sir Ken Robinson: [Do schools kill creativity?](#)
 - c. [Success in the New Economy](#)
 - d. [Plumber vs Doctor: What's the Better Financial Decision?](#)
 - e. [Educational Sloyd](#) – Wisdom of the Hands Blog – *Roots of Manual Training*
 - f. [The Brain Science of Making](#) – School Library Journal
 - g. [Systems Based Learning](#) (MarionBrady.com)
 - h. [Agency by Design](#) – Harvard
 - i. [MakerEd.org](#)
 - j. [Shop Class as Soulcraft](#) – Matthew Crawford, The New Atlantis
 - k. [Froebel](#) – Garden of Children Documentary, use [1STMAKERKB](#) at checkout. <https://www.froebelusa.com/offers/Hhkl8RDX/checkout>
 - l. Blickstein: [Efficacy of Maker Ed: It's About Process, Not Products](#)
 - m. Kim's whitepaper: [Children Are Born Powerless – Making something gives them power & hope](#)

- III. What can 1st Maker Space do about it?
 - a. How did we get here: 3D Parts Mfg - an industrial 3D printing startup
 - i. See Techpoint [Lecture October 2013](#) for our founders' story
 - ii. Build Arsenal Tech High School Makerspace 2014
 - iii. 1st Maker Space formed in March 2015
 - iv. Summer Camps, 1000+ kids, 2015-2017
 - v. IBJ reports "[His 3D-printing summer camps failed, but this tech veteran still thinks kids need to tinker](#)" October 2017
 - vi. Kim & Adam swap their 3D Parts stock to go 'all in' in 1st Maker Space, 2017
 - vii. We recruit Mary Rinehart from IN Dept of Education, ultimately as President & CEO, March 2018
 - viii. 2020: Hire HSE 5th grade Math & Science Middle School teacher to become Education Director
 - ix. 2021: Hire Former Principal, Boys & Girl Club Exec Dir as Sales VP
 - x. *Rocky Road* until March 2022
 - xi. \$800K check from Gary School District April 2022

- b. What: 'Design, Build & Sustain' K12 makerspaces – see our [brand Video](#)
 - i. What is a makerspace? A 'problem garden' and 'field of metaphors' that help students discover their talents, build confidence, and develop the [maker mindset](#) they will need for 21st Century [robot proof jobs](#).
 - ii. Developing 'Chefs' not 'Cooks'
 - iii. Makerspace Taxonomy (modeled after [Bloom's Taxonomy](#), sort-of)
 - Materials
 - Measurement (includes design)
 - Tools
 - Fabrication
 - Control (includes coding & robotic)
 - c. Why: To help children become Powerful Problem solvers
 - i. Making = Problem solving + Persistence + Pride = Power
 - ii. Economic Power – *Powerful on their own behalf (Agency)*
 - The first problem children need to solve is for their own existence and prosperity.
 - iii. Also: Play, Prosperity & Patriotism
 - iv. Fulfilment: [Shop Class as Soulcraft](#)
 - d. Success = Expectations + Tools + Opportunity
 - e. How do we get students to persist? A combination of Pride, Joy & Shame.
- IV. The Future: Every school will have a makerspace, STEM Lab, Innovation hub, etc.
- a. Computer labs replaced by makerspaces
 - b. Teachers will become facilitators – they will help students learn how to learn
 - c. Students will be rewarded for innovation, creativity, persistence not memory.
 - d. Hands-on learning will give every child hope in their future