



Driving Innovation, Opportunity, and Prosperity

Mark Lewis, STEM & CTE Policy Director
Chief Education Office



"I asked you a question, buddy. ... What's the square root of 5,248?"

ONLY IN MATH PROBLEMS CAN YOU BUY
60 CANTALOUPEs AND NO ONE ASKS
WHAT THE HELL IS WRONG WITH YOU.



SCHULZ

PEANUTWEETER.COM

@KARIMI





1. Pour some milk on a plate so it covers the bottom, about $\frac{1}{4}$ " in depth.
2. Gently add one or two drops of colors at a few spots around the middle of the plate.
3. Dip a cotton swab in detergent, then push it through the center of the milk to the bottom of the plate and hold it there.



2025

40-40-20... What outcomes matter?

A world that doesn't exist...



What will it take to thrive?

What are the skills, attitudes, and dispositions necessary to be successful in a rapidly changing, complex, technologically-rich, global society?






If these are the outcomes that we value, what are the implications for how we educate our children and youth?

60% of students lose interest in science and mathematics between 1st and 8th grade with a precipitous drop in 5th grade.



~1/3 Oregon students do not graduate in 4 years.



*School was eternity – a quiet pool of imagination
where we sat together and dreamed... interrupted by
teaching.*

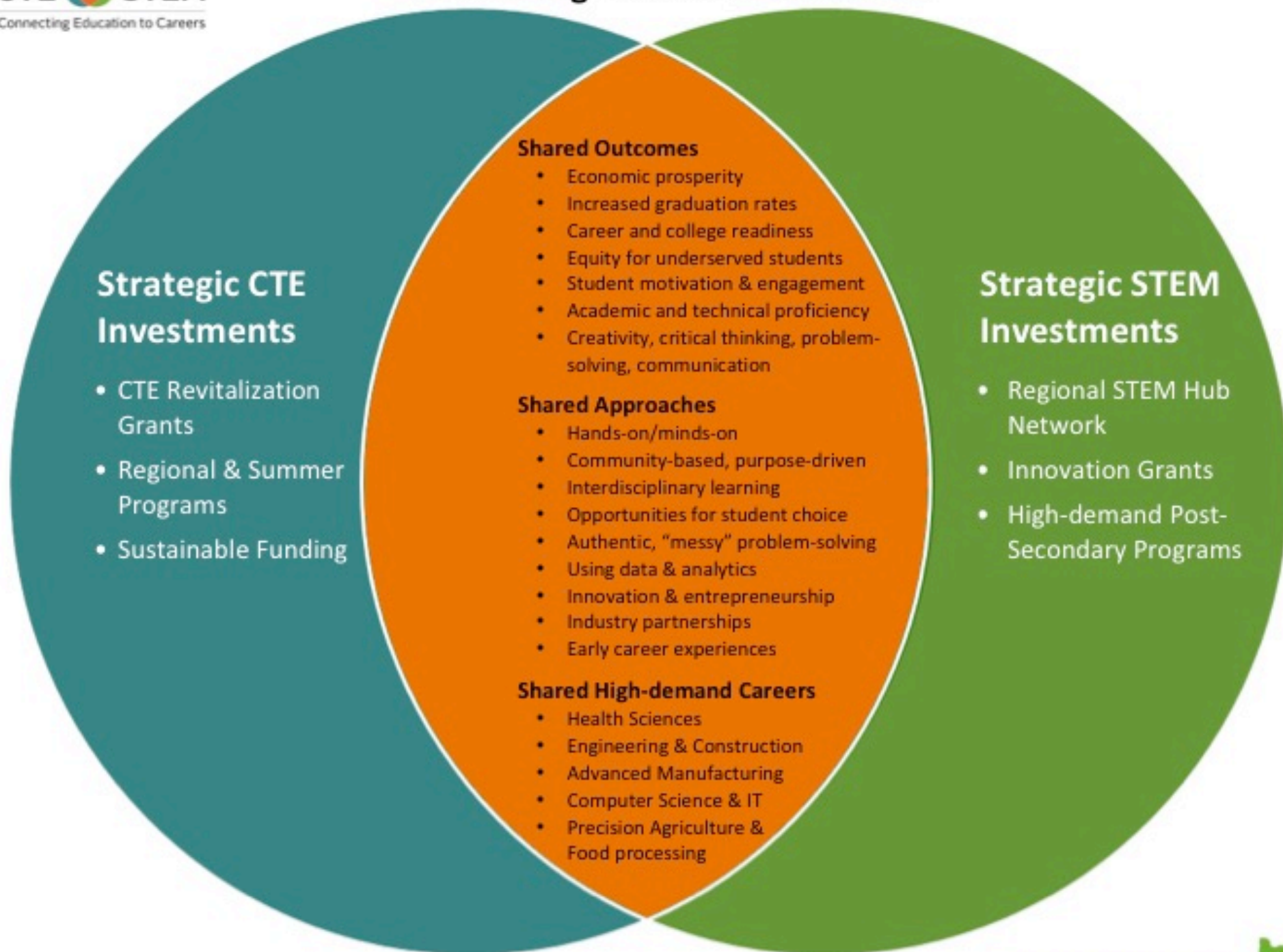
- Garrison Keillor

STEM/CTE = Engagement

- High-risk students are eight to 10 times less likely to drop out in the 11th and 12th grades if they enroll in a CTE/STEM program.
- 81 percent of dropouts say relevant, real-world learning opportunities would have kept them in high school.
- The average high school graduation rate for students concentrating in CTE programs is 90.2 percent, compared to national graduation rate of 74.9 percent.
- East Syracuse STEM School has a 94% attendance rate... in HS!



Connecting Education to Careers



S²TEM

ST²REAM

e-STEM

STEAM

STREAM

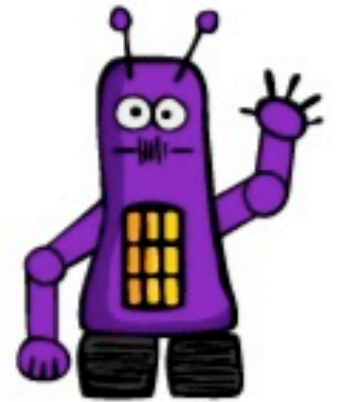
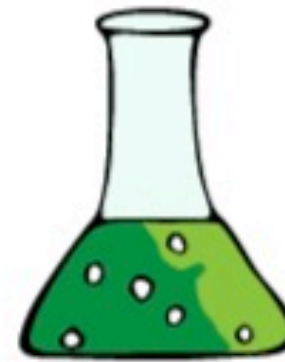
STEM

STEMM

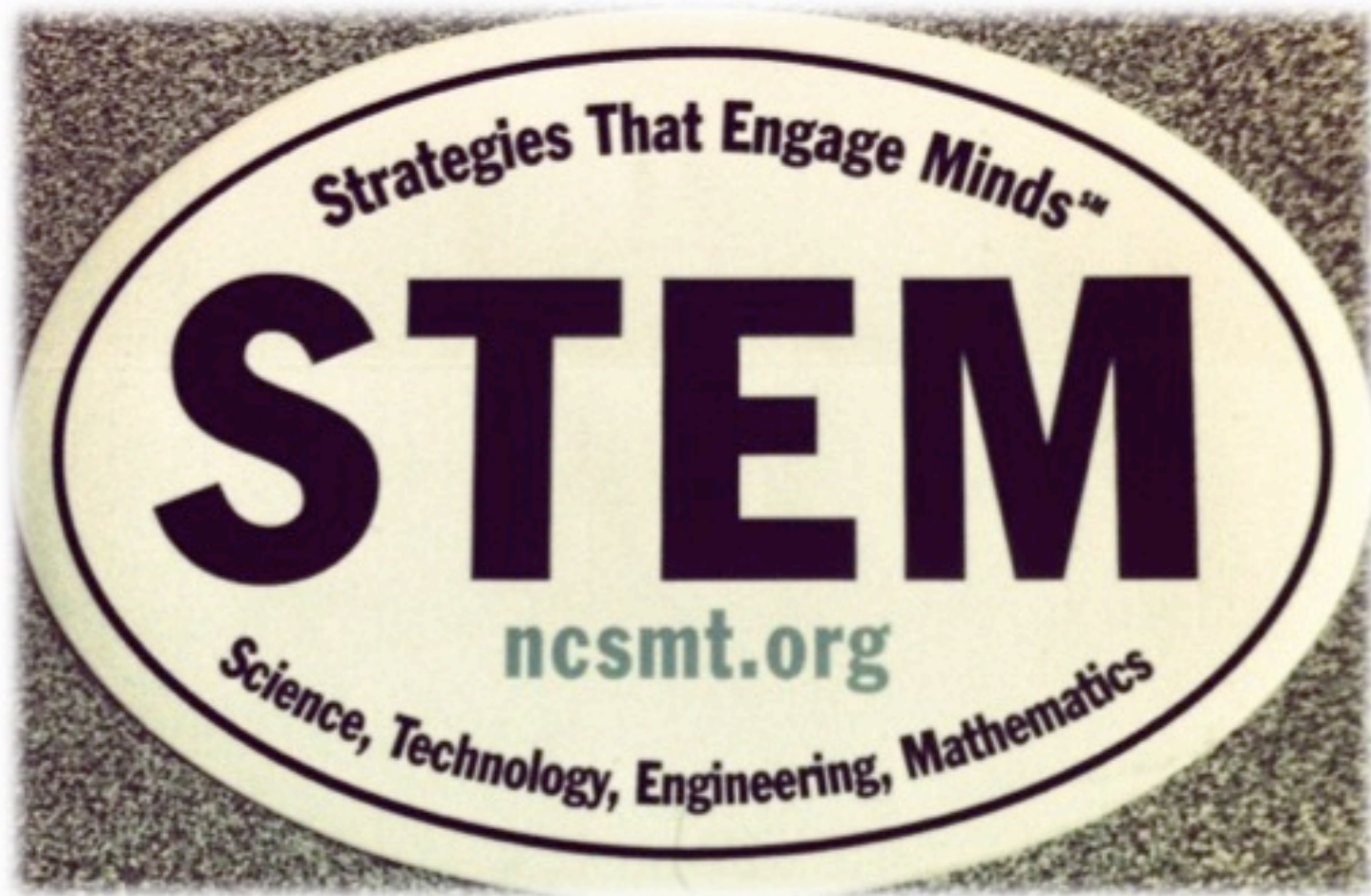


What is STEM?... beyond the acronym.

- **Science:** Exploring the underlying rules, systems, and interactions of the natural world.
- **Technology:** Extending human capabilities.
- **Engineering:** Designing solutions to meet human needs.
- **Mathematics:** The language in which the laws of nature are written.



Another definition...





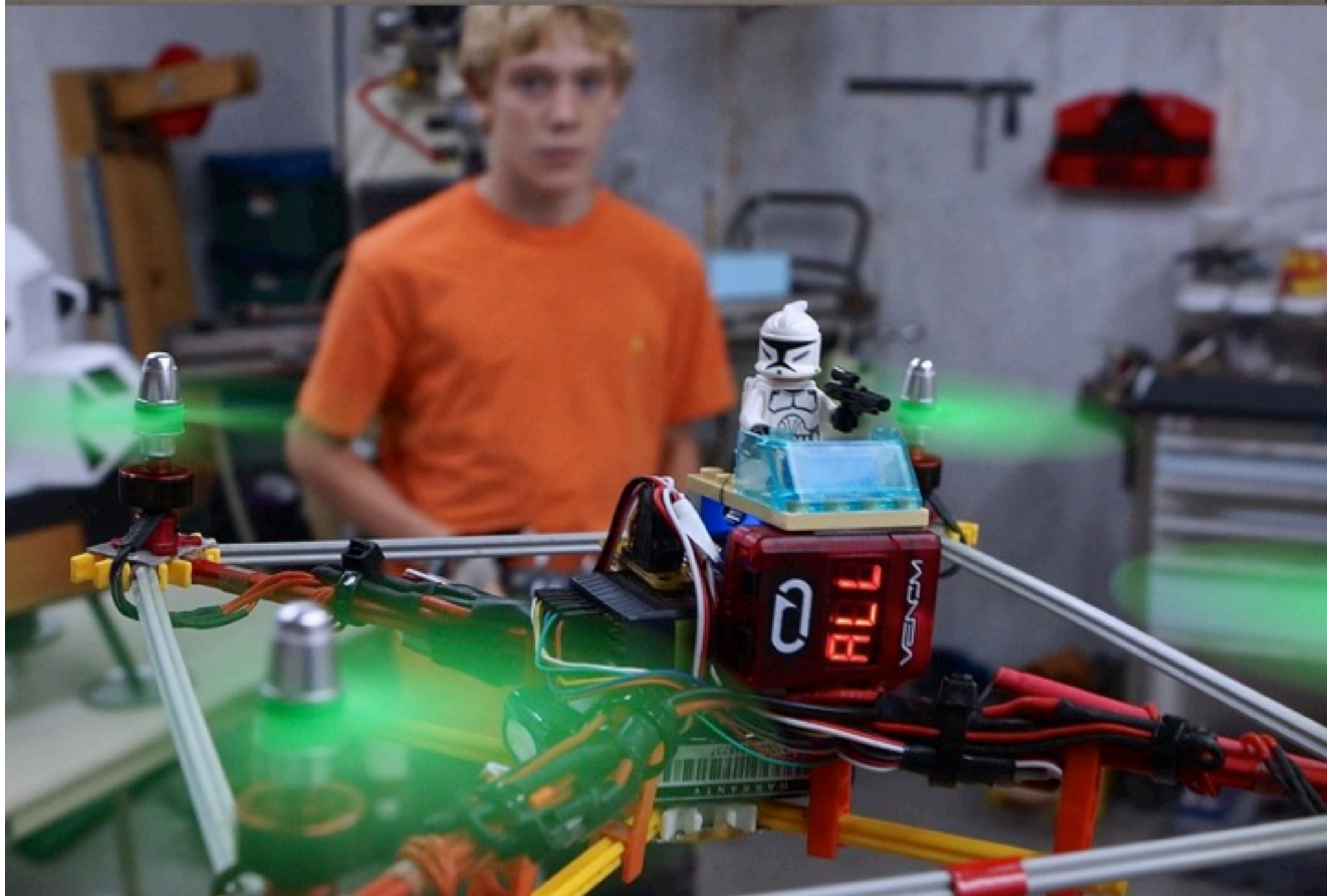
What does engagement look like?

**I THINK.
I QUESTION.
I DESIGN.
I CREATE.
I STRUGGLE.
I COLLABORATE.
I TRY.
I SOLVE.
I INVENT.
I REFLECT.
I LEARN.**

**The best way to learn STEM,
is to DO STEM.**



Creators of knowledge, not consumers of it.



www.oit.edu/strategic-partnerships/stem-partnership/educators



CATALYZING SUCCESS FOR THE NEXT
GENERATION OF OREGONIANS

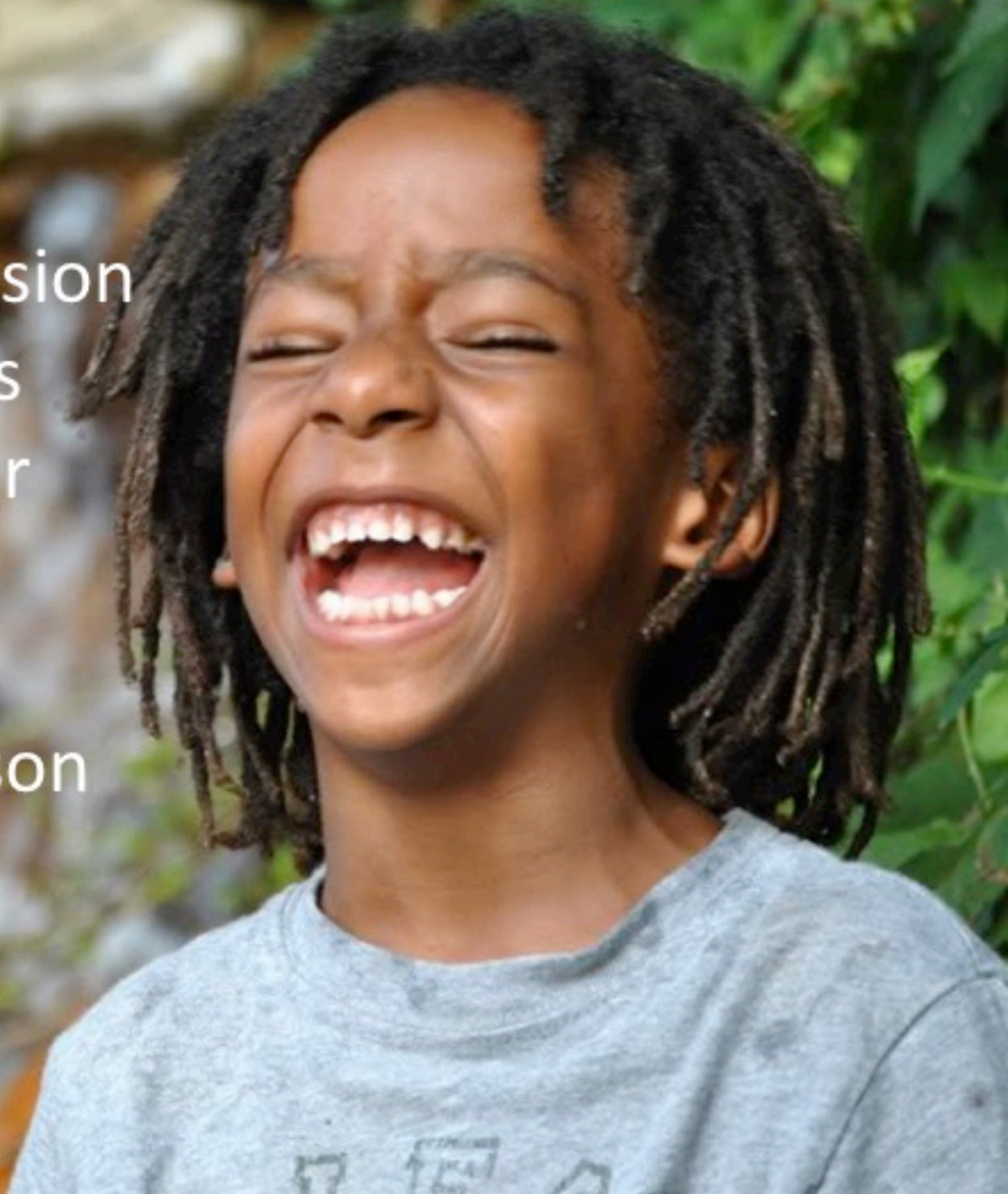
What is STEM?

Applied curiosity: an insatiable desire to know and a drive to create.



Imagine if the mission
given to educators
was to “make your
students feel fully
alive.”

- Sir Ken Robinson





Some favorite sites:

- STEMOregon.org
- KQED MindShift
- Edutopia.org
- Brainpickings.org

Mark Lewis - mark.lewis@state.or.us

Be curious... and remain playful!