Virgin Islands Department of EDUCATION

STEM Workforce Development at the K-12 Level

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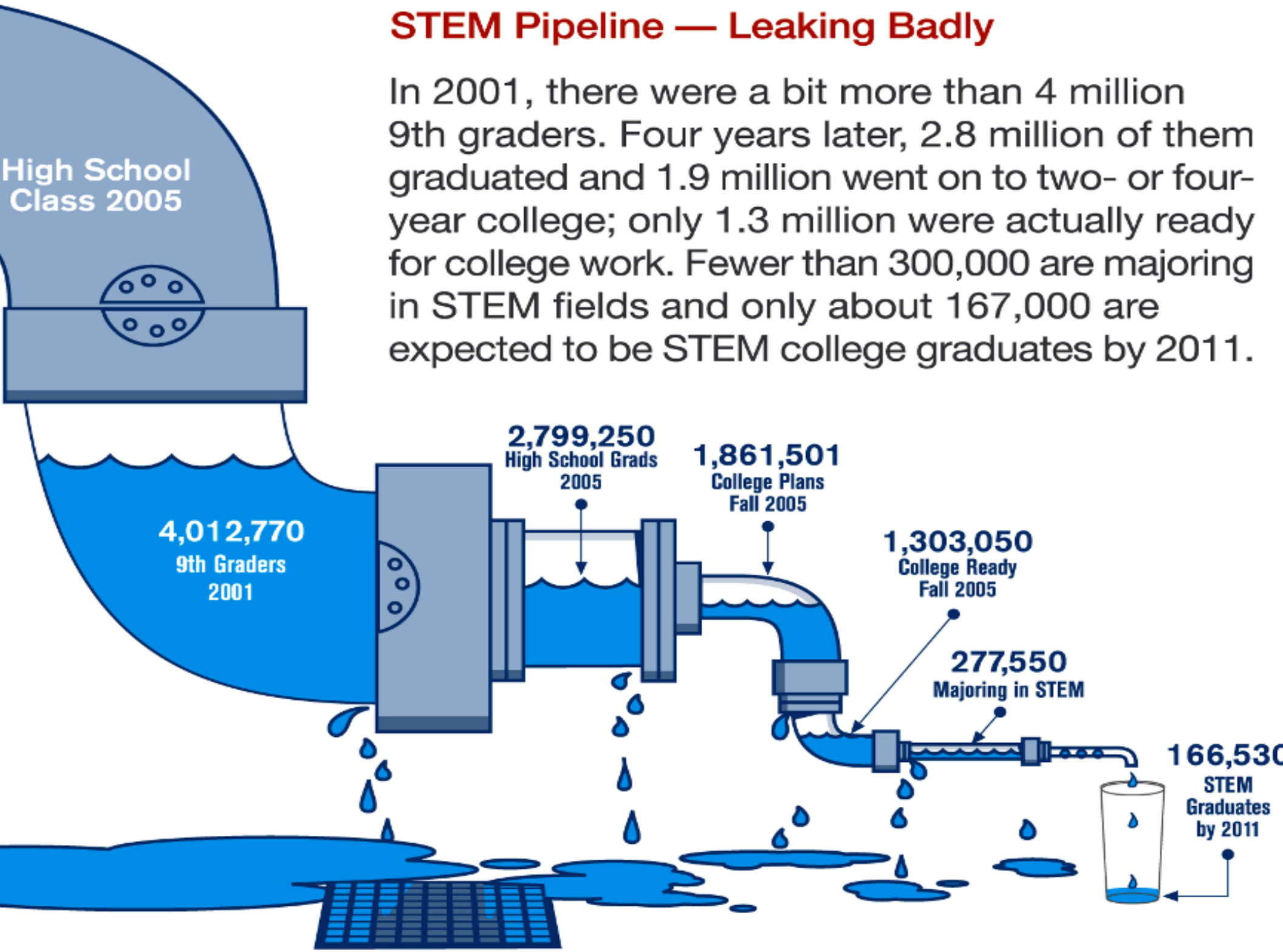
STEM Pipeline — Leaking Badly

In 2001, there were a bit more than 4 million 9th graders. Four years later, 2.8 million of them graduated and 1.9 million went on to two- or four-year college; only 1.3 million were actually ready for college work. Fewer than 300,000 are majoring in STEM fields and only about 167,000 are expected to be STEM college graduates by 2011.



Today's students are moving beyond the basics
and embracing the 4C's – "super skills" for the 21st century!

Communication

aring thoughts, questions,
ideas, and solutions

Collaboration

Working together to reach a
goal – putting talent, expertise,
and smarts to work

Critical Thinking

Looking at problems in
a new way, linking learning
across subjects & disciplines

Creativity

Trying new approach
to get things done equ
innovation & inventio

- ✓STUDENTS
- ✓ EDUCATORS
- ✓CURRICULUM
- ✓STRATEGIC ALLIANCES
- ✓SUSTAINABILITY

All Virgin Islands learners will achieve college and career readiness in order to meet the workforce demand for innovative problem-solvers, who are prepared to achieve success with the STEM challenges of our global society.

STEM trained learners will be the foundation of a workforce that will maintain and attract employers as the territory competes in the global market.

STEM literacy for all

and

STEM majors and/or career pathways

New Content Standards – Sci/Math

College

Career

&

Citizenship

Sci. Inquiry vs. Engineering Design

2 different processes:

- Understand through inquiry
- Apply though engineering design

This a major shift in Science Education via NGSS from grades K-12!

NEXT GENERATION SCIENCE STANDARDS

Professional Learning Communities (PLCs)
Sci/Math grades 7-12

- Mentor Teachers

- Model Classrooms

NGSS & CCSS Instructional Shifts

- ✓ Content
- ✓ Strategies
  - Inquiry-based
  - Project-based
- ✓ Reflection
- ✓ Authenticity

Summer Institute

STEM Teaching and Learning

"...focuses on authentic content and problems, using hands-on, technological tools, equipment, and procedures in innovative ways to help solve human wants and needs"

Merrill. (2009)

Publicly Presented Product
Driving Question or Challenge
Feedback & Revision
PBL
PROJECT BASED LEARNING
Need to Know
Student Voice & Choice
Inquiry & Innovation
21st Century Skills

Apply Strategies & Design Curriculum

Engage
Explore
Explain
Elaborate
Evaluate

Model Classrooms

When you walk into a classroom, every student should be able to say what it is they are figuring out.

CORE: STEM literacy for all

and

ELECTIVE: STEM majors and/or career pathways

School-Within-A-School

Hospitality

Information Technology

Finance

Biotechnology

Digital Media

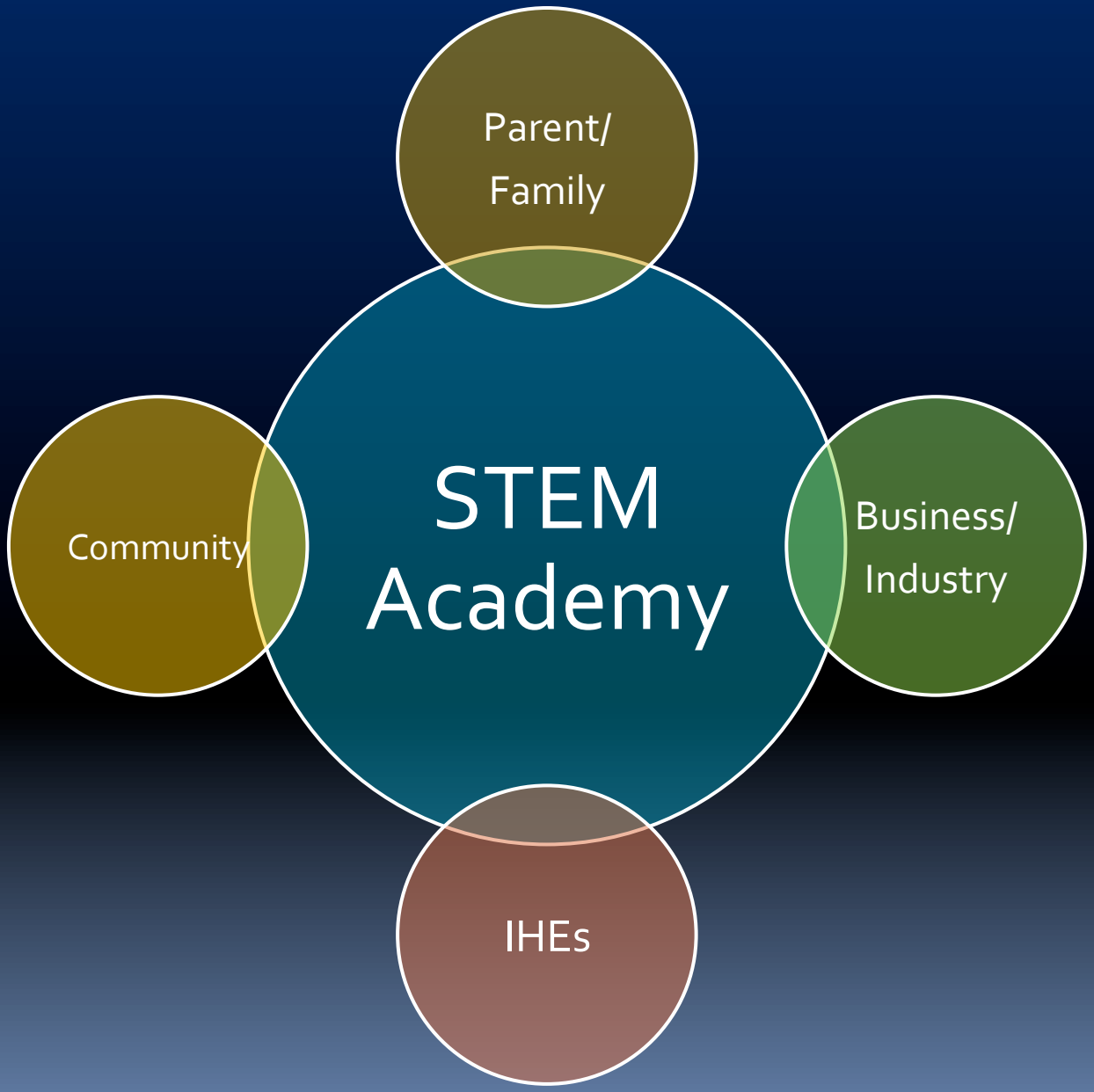
Engineering

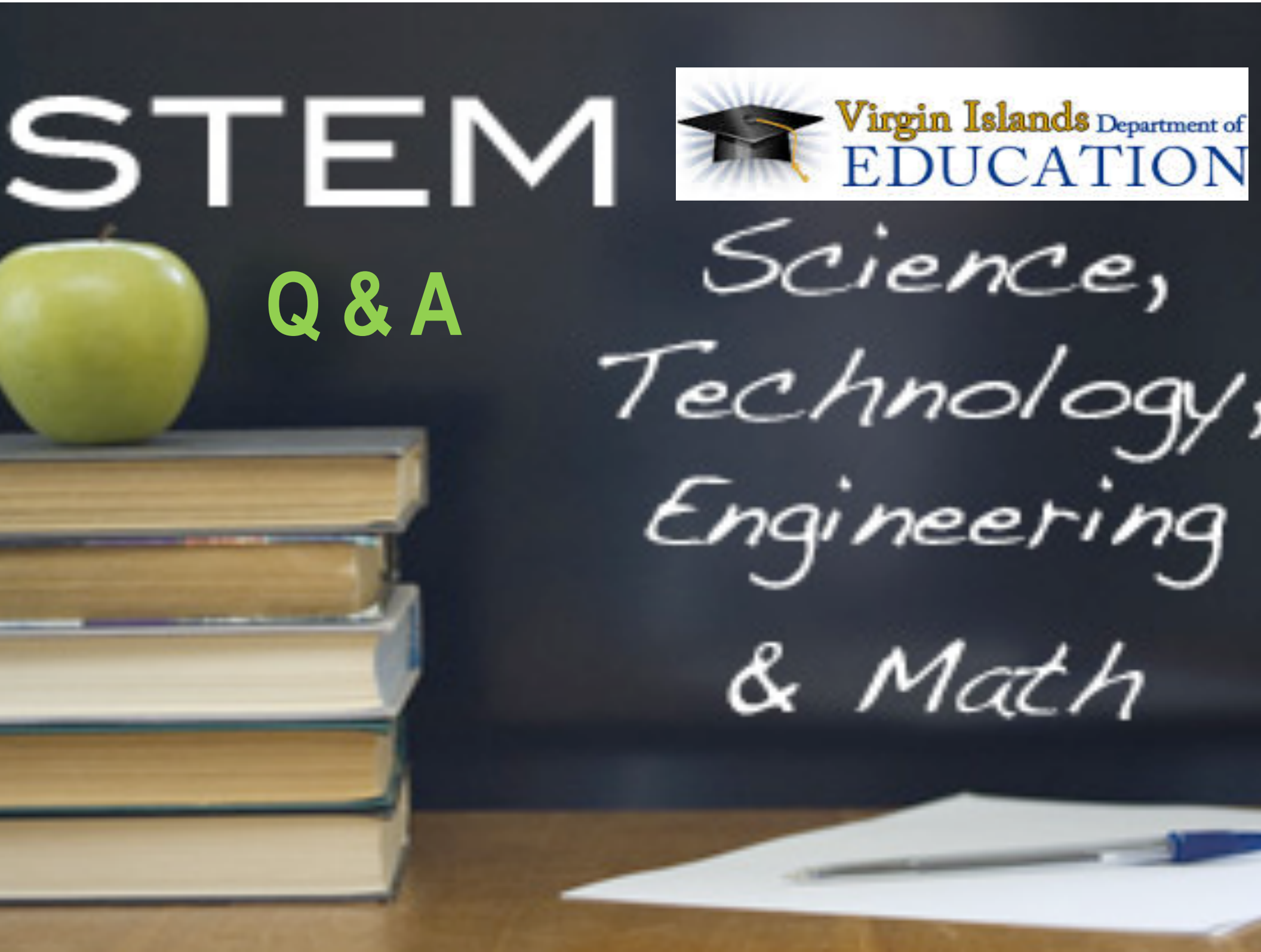
STEM & CTE

- STEM Education requires academic and career/ technical to merge
- STEM education must incorporate both simultaneously for all students

College AND Career Readiness

Partnerships




STEM
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