STEM at the Elementary Level

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"[Science] is more than a school subject, or the periodic table, or the properties of waves. It is an approach to the world, a critical way to understand and explore and engage with the world, and then have the capacity to change that world...“

— President Barack Obama, March 23, 2015
PROJECTED PERCENTAGE INCREASES IN STEM JOBS: 2010-2020

- All Occupations: 14%
- Mathematics: 16%
- Computer Systems Analysts: 22%
- Systems Software Developers: 32%
- Medical Scientists: 36%
- Biomedical Engineers: 62%
Regional High Demand and High Wage Job Opportunities for students.

Top Kid Wants

1. Arts and AV technology (3,000 stu.)
2. Health Sciences (1,600 stu.)
3. STEM Careers (1,205 stu.)
4. Human Services (800 stu.)
5. IT & Business and Marketing (273 stu.)
6. Architecture
7. Sustainable Design & Business
Regional High Demand and High Wage Job Opportunities for students.

National Job Opportunities:

1. Manufacturing and Aerospace
2. IT Tech Jobs
3. Engineering Jobs
4. Health Care Jobs
5. Human Service Jobs
6. Arts & Digital Communication Jobs
2030
Engineering
Robotics
Computer Science
What are 21st Century Skills? These four C’s:

**COMMUNICATION**
Sharing thoughts, questions, ideas & solutions

**COLLABORATION**
Working together to reach a goal. Putting talent, expertise and smarts to work.

**CRITICAL THINKING**
Looking at problems in a new way and linking learning across subjects and disciplines.

**CREATIVITY**
Trying new approaches to get things done equals innovation and invention.
Communication
Collaboration
Critical Thinking
Creativity
K-12 Computer Science: Creating Paths, Setting the Pace
Alternative Spaces

Da Vinci Studio

Espresso Studio

Jamie Oliver Studio

Black Box Theater
Alternative Spaces

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Black Box Theater
Key Elements

Shared Spaces

Test Ideas

Power/Water

Outdoor Access

Presentation
Key Elements

Shared Spaces
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Power/Water
Outdoor Access
Presentation
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Presentation
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Presentation
Key Elements

Shared Spaces
Test Ideas
Power/Water
Outdoor Access
Presentation
What needs to shift (or continue) to support elementary learners?

ONLINE
WORDLE

TEXT

Share
What needs to shift (or continue) to support elementary learners?

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STEM at the Elementary Level
Case Study: Enatai Elementary School
Enatai Elementary School

Enatai Neighborhood

STEM at the Elementary Level
Enatai Elementary School

ENATAI
NEIGHBORHOOD

WHERE THE WOODS MEET THE WATER

STEM at the Elementary Level
Enatai Elementary School
Enatai Elementary School
Enatai Elementary School

BIORETENTION

STEM at the Elementary Level
Enatai Elementary School

Photo Voltaic SOLAR PANELS

STEM at the Elementary Level
Enatai Elementary School

SOLAR HOT WATER

STEM at the Elementary Level
Enatai Elementary School

OUTDOOR LEARNING

STEM at the Elementary Level
ENATAI means... WHERE THE WOODS MEET THE WATER...
STEM at the Elementary Level
STEM at the Elementary Level
Question + Answer
Resources for Further Research

- Blue Print for Tomorrow – Redesigning Schools for Student-Centered Learning
  - By Prakash Nair

- STEM teaching tools
  - www.STEMteachingtools.org

- Digital Media & Learning Research Hub
  - www.dmlhub.net

- Spigot – Aggregate news, research, and info for those working at the intersection of learning, technology, and youth
  - www.spigot.org

- Connected Learning Research Network
  - Clrn.dmlhub.net

http://www.sciencepioneers.org/parents/why-stem-is-important-to-everyone

- https://www.ed.gov/Stem