MISSION

In order to accomplish our vision, it is the mission of the Ephrata Area School District to provide all students a secure learning environment and exemplary academic programs that inspire all students to reach their full potential.
IMPORTANCE OF STEM

- An increasing number of STEM jobs exist at all levels.

- Individual and societal decisions increasingly require some understanding of STEM.

- Employers highlight that applicants lack needed mathematics, computer, and problem-solving skills to succeed.

(National Research Council, 2011)
IMPORTANCE OF STEM

- 3.6 unemployed individuals for every open job listing, yet there is a clear shortage of qualified applicants for STEM jobs.

- International students fill an increasing portion of elite STEM positions in the United States.

- By 2018, there could be 2.4 million unfilled STEM jobs.

(National Research Council, 2011)
STEM

Science  Technology  Engineering  Mathematics

- YET -

STEM is crucial for innovation in the U.S.

Businesses are struggling to find qualified STEM employees
FUTURE IS NOT BRIGHT, OR IS IT?

“You can have all the latest technology you want, but if you don’t have the talent behind it, your business is not sustainable.”

Ed Gordon, author of "Future Jobs: Solving the Employment and Skills Crisis"

**Expected Job Growth 2008-2018**

- **STEM**: 17%
- **NON-STEM**: 9.8%

Causing **2.4 million** unfilled job vacancies in the most influential occupations

**STEM Jobs Needed by 2018**

- **Computer Careers**: 51%
- **Engineers & Technicians**: 28%
- **Life/Physical Scientists**: 13%
- **Architects & Surveyors**: 6%
- **Mathematical Sciences**: 2%

75% of the fastest growing occupations require significant mathematics or science preparation.
The Job/Student Gap

Computer Science Students
- 2%
- All other math and science students: 98%

Computing Jobs
- 60%
- All other math and science jobs: 40%

Sources: College Board, Bureau of Labor Statistics, National Science Foundation
EFFECTIVE STEAM INSTRUCTION

- Capitalizes on students’ early interests and experiences.
- Engages students in science, technology, engineering, arts, and mathematics throughout their schooling.
- Creates a deeper thought process ensuring students have the ability to become innovators.
- Gives students the opportunity to be problem solvers.
- Connects students with the “real world.”
STEAM PROGRAMS AT EASD

K - Grade 4

• Math and Science instruction/projects
• Foss Kits in Science
• LEGO Coding in 4th Grade (2 buildings)
• Science Explorers After-School Club
• Hour of Code (once per year)
• 2016 Coding Contest (after school)
STEAM PROGRAMS AT EASD

Grades 5-8

- Science Fair
- Envirothon (after school)
- You Be the Chemist Challenge (after school)
- Robotics Seminar (Gifted)
- Makerspace Design Challenge (after school)
- Hour of Code (once per year)
STEAM PROGRAMS AT EASD

Grades 9-12

• Six Project Lead the Way courses that engage students in Computer Science and Engineering
• STEM Summit (April 2016)
• Science Fair (part of a science course)
• Hour of Code (once per year)

Ephrata Area School District
Achieving Success, One Student at a Time
5TH GRADE COMPUTER

30 Days for Each Student in 5th grade

Topics Covered

- Keyboarding
- File Management, Workflow & Productivity
- Excel Basics and Basic Formulas
- Internet Safety & Cyberbullying
- PowerPoint Basics and Presentation Software

Ephrata Area School District
Achieving Success, One Student at a Time
7TH GRADE COMPUTER

30 Days for Each Student in 7th grade

Topics Covered

- Keyboard Shortcuts & Tool Tips to Improve Efficiency
- MLA Style Reports
- Punctuation Marks and Spacing Rules
- Creating and Editing Tables
- Desktop Publishing/Design Elements in Word
- Creating Spreadsheets/Charts in Excel
- Internet Usage/Research/Safety/Ethical Use
# CURRENT STAFFING

## EIS/EMS COMPUTER INSTRUCTION

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<tr>
<th>Teacher</th>
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<th>EMS</th>
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<tr>
<td>Mary Reimold</td>
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<td>.30 (Teaches one 7th grade computer class per day)</td>
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<tr>
<td>Lisa Keeley</td>
<td>.30 (Teaches one 5th grade computer class per day)</td>
<td>.40 (Teaches one 7th grade computer class per day)</td>
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<tr>
<td>Scott Fairchild</td>
<td>.15 (Teaches one 5th grade computer class per day)</td>
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EASD FUTURE

- Computer Science expansion (6-12)
- *Project Lead the Way* Middle School Program (Gateway)
- More STEAM Integration K-6
- More clubs/activities that promote STEAM
POSSIBLE FUTURE:
EASD COMPUTER SCIENCE

- **6th Grade**: Introductory Computer Science (developed locally) - 30 days/student
- **7th Grade**: MS Computer Science II (developed locally) - 60 days/student
- **8th Grade**: MS Computer Science III (developed locally) - Elective
- **9th Grade**: Intro to Computer Science (PLTW)
- **10th Grade**: Computer Science Principles (PLTW)
- **11th Grade**: Computer Science A - PLTW (Option 2016-2017) or (2017-2018)
- **12th Grade**: SEC (Cybersecurity) - PLTW (Option 2017-2018) or (2018-2019)
CONSIDERATIONS TO MAKE FUTURE A REALITY

- Creation of one computer science teaching position in grades 6-8
- More club advisors to promote STEAM activities and problem solving
- Support of PLTW expansion to the EIS and EMS Tech Ed programs (This can be budgeted for internally.)
- Strategic and focused professional development (planned for and budgeted internally)