STEM FUSE

K-12 DIGITAL STEM CURRICULUM

The STEM:IT Series Overview

WWW.STEMFUSE.COM

ABOUT US

STEM Fuse was founded in 2009 with a simple goal in mind of promoting and improving STEM Education. We've achieved this by developing high-quality, easily taught STEM curriculum with two major features:

- **We must engage and inspire our students**
- **Our content must be affordable**

AND WE'RE SUCCEEDING!

"EVERY WEEK I COUNTDOWN THE MINUTES UNTIL COMPUTER CLASS WITH MR. YERDON TO USE HIS **STEM FUSE CURRICULUM**. I WAS INSPIRED THE FIRST DAY TO MAKE MY OWN GAMES...I HAVE NOW CREATED FOUR ORIGINAL GAMES! USING **STEM HAS INSPIRED ME TO BE A COMPUTER SOFTWARE PROGRAMMER WHEN I GROW UP.**"

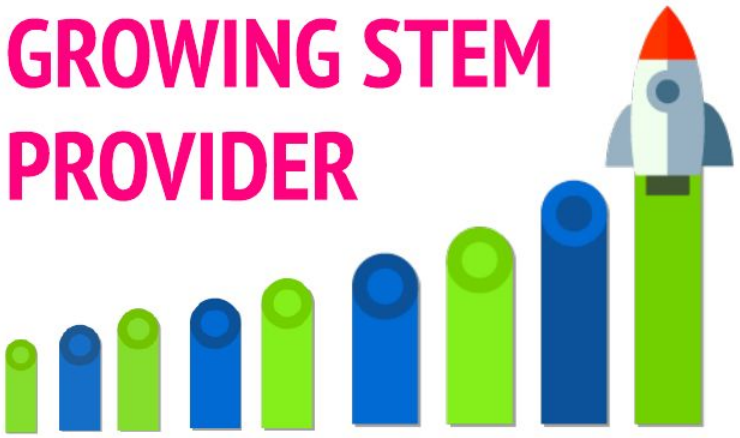
ALEX D. - 5TH GRADER, DR. N.H. JONES ELEMENTARY SCHOOL

WHY STEM FUSE?

Since 2011 experienced **150%** year over year growth.

20+ Courses Available

WE'RE THE *FASTEST* GROWING STEM PROVIDER



REACHING **1.9** MILLION STUDENTS

"WE ARE CURRENTLY COMPLETING THE CELL PHONE **STEM:IT CHALLENGE AND THE STUDENTS ARE HAVING A GREAT TIME WITH IT**! STUDENTS HAVE MADE PERSONALIZED CASES, CASES THAT HAVE CLIP-ON CORDS TO PREVENT DROPPING, PROJECTORS TO SLIDE PHONES INTO, PILLOW-TOPPED CASES, AND EVEN A POP-UP SHADE TO ALLOW YOU TO SEE YOUR SCREEN BETTER WHEN OUTSIDE IN THE SUN! THESE ARE JUST A FEW OF **THEIR CREATIONS THAT HAVE SOLVED PROBLEMS PERSONAL TO THEM.**"

SHELLI M. - MS STEM TEACHER, BALLINGER ISD

WHAT IS STEM:IT?

The **STEM:IT series** is a K-12 library of digitally interactive projects designed to reinforce core subject matter through STEM (*science, technology, engineering, and mathematics*) practices and project-based learning activities.

We understand the questions you might have when selecting a digital curriculum solution for your institution and we're ready to field those questions. To make the process even simpler, we've created this resource to lay out some of the questions your district or school may have. To navigate the document, scroll or click on the tabs below to discover the following about the STEM:IT program: research behind the program, alignment and scope of the content, case studies and testimonials, and frequently asked questions.

SECTION 1

Foundational Research Behind the Program

The STEM Fuse Curriculum Development Team, comprised of former teachers, curriculum writers, and STEM industry professionals, spent years researching and identifying proven educational frameworks and digital curriculum design. Take some time to learn more about what all went into STEM:IT's design.

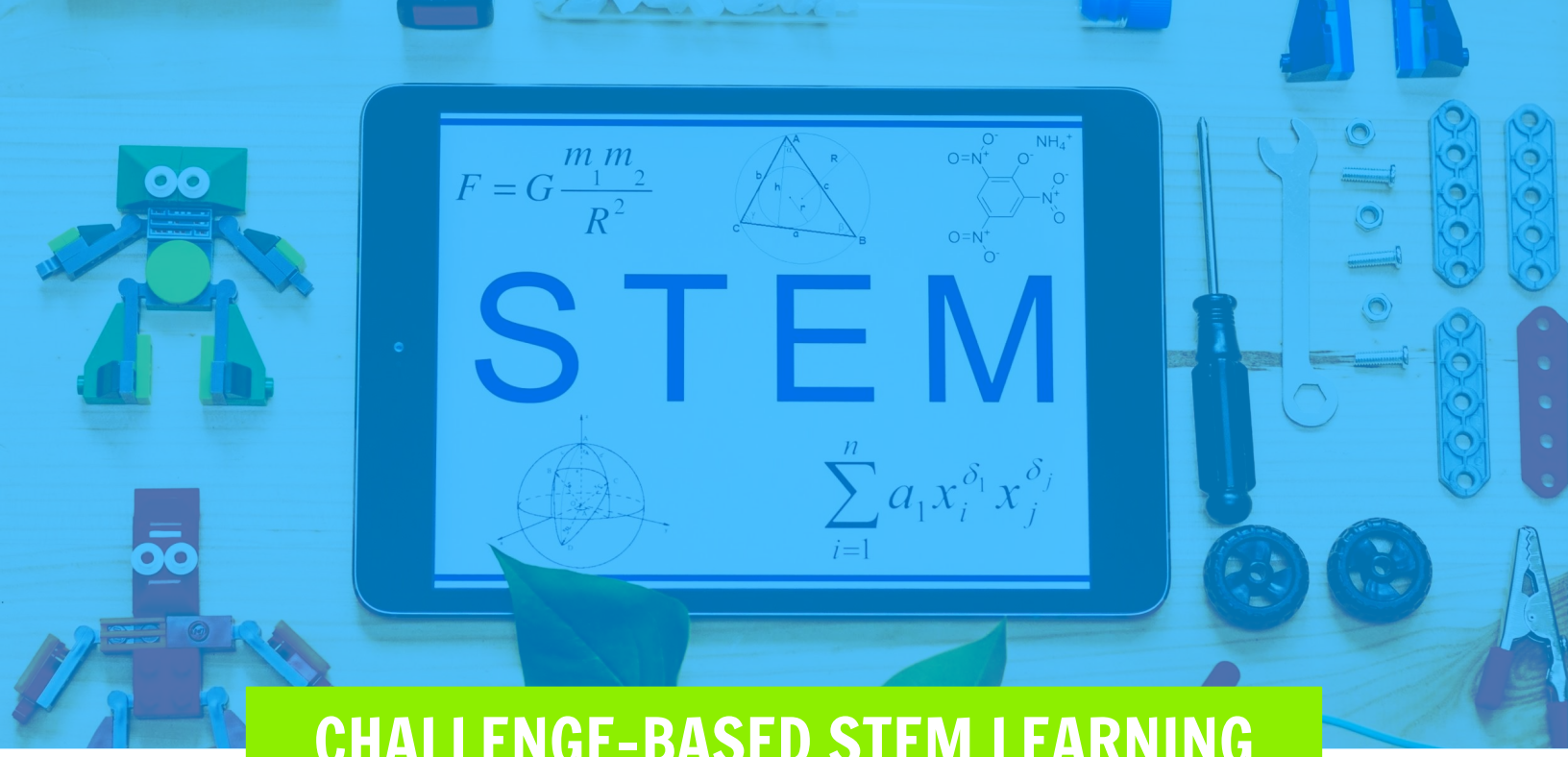
WHAT IS STEM?

As the world around us has evolved, so have the ways we approach classroom teaching. Long gone are the days of reading, writing, and arithmetic and simply scanning bubble sheets to assess student learning. With these global changes come great responsibility. As educators, we must evolve our teachings to reflect the needs of the world and the students we guide into it.

Students must be equipped to solve complex problems using 21st century tools, the latest in science technologies, and the ability to collaborate with others to evaluate evidence and develop creative solutions. Collectively, these skill sets are commonly found in the subjects the acronym comes from - science, technology, engineering, and math.

It is important to note that STEM is not the study of these subjects, but rather the utilization of the skills found within them. Creative problem solving is the foundation of STEM, so we often find the most innovative solvers come from the arts. STEM is problem solving and this is what we must teach to our students within our respective subject areas.

Since its conception, STEM has worked its way into national education initiatives to provide resources and grants to support STEM programs across the country. These funds can be utilized in the purchasing of new STEM curricula, extracurricular STEM activities, professional development for teachers and staff, and so much more! At STEM Fuse, we can help you achieve this goal by providing those resources and assisting you in obtaining the federal resources to create a STEM-centered program in your district.



CHALLENGE-BASED STEM LEARNING

The STEM:IT curriculum features STEM challenges where students utilize STEM skills to solve real world problems tied to core subjects. Our methods are grounded in the **Challenge-Based Learning Framework**. CBL utilizes real world challenges to channel student interests, explore careers, and apply core educational knowledge and skills.

In the fall of 2008, Apple, Inc conducted a pilot study with six schools from across the country with one-to-one laptop initiatives in place. Both teachers and students found challenge-based learning effective and engaging. 97 percent of the 321 students involved found the experience worthwhile. Additionally, when disaggregated by teacher, 73 percent of the faculty were able to engage every single student in their classes; the data for those classes shows student satisfaction rates of a remarkable 100 percent. (Apple, 2008).

Teachers unequivocally also rated the experience as positive, with every one of the 27 pilot faculty reporting that work of the students exceeded their expectations (Apple, 2008). Since that study, challenge-based learning has been extensively researched and implemented in schools around the world (Carver et. al, 2017).

Current research in challenge-based learning demonstrates that projects can increase student interest in science, technology, engineering, and math (STEM) because they involve students in solving authentic problems, working with others, and building real solutions (Laboy-Rush, 2012).

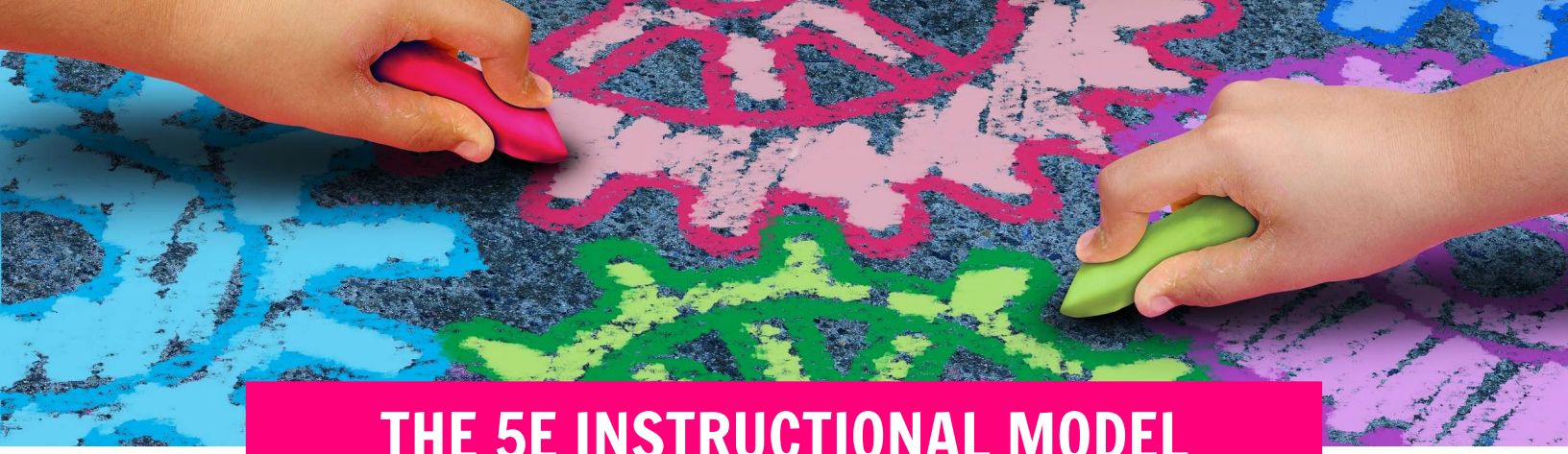
With this research and tested classroom success, the STEM Fuse team utilized the challenge-based learning framework to develop the K-12 STEM:IT Challenges.

REFERENCES

Apple Education (2008). Challenge based learning. http://ali.apple.com/cbl/global/files/CBL_Paper.pdf.

Carver, S., Van Sickle, J., Holcomb, J., Quinn, C., Jackson, D., Resnick, A., Duffy, S., Sridhar, N. & Marquard, A. (2017). Operation STEM: increasing success and improving retention among first-generation and underrepresented minority students in STEM. Journal of STEM Education. 18 (3),. Laboratory for Innovative Technology in Engineering Education (LITEE).

Laboy-Rush D 2010 Integrated STEM education through project-based learning. http://www.learning.com/stem/whitepaper/integrated-STEM-throughProject-based-Learning



THE 5E INSTRUCTIONAL MODEL

The **5E instructional model** is a model based on the constructivist approach to learning, which says that learners build or construct new ideas on top of their old ideas. The 5 E's allow students and teachers to experience common activities, to use and build on prior knowledge and experience, to construct meaning, and to continually assess their understanding of a concept (EnhancingEducation, 2002).

Graphic by Cognitive Performance Group

CROSS-CURRICULAR INTEGRATION

Each STEM:IT topic is developed around a multiple standard-aligned topics across multiple content areas within that grade level. The evidence for implementing cross-curricular teaching into core subjects is compelling and understandable. By integrating multiple subjects into a single challenge, we can reinforce the importance of subject matter - essentially addressing the age-old question of "why are we learning this?" By applying such subject matter, we can demonstrate real world applications of what they're learning in class.

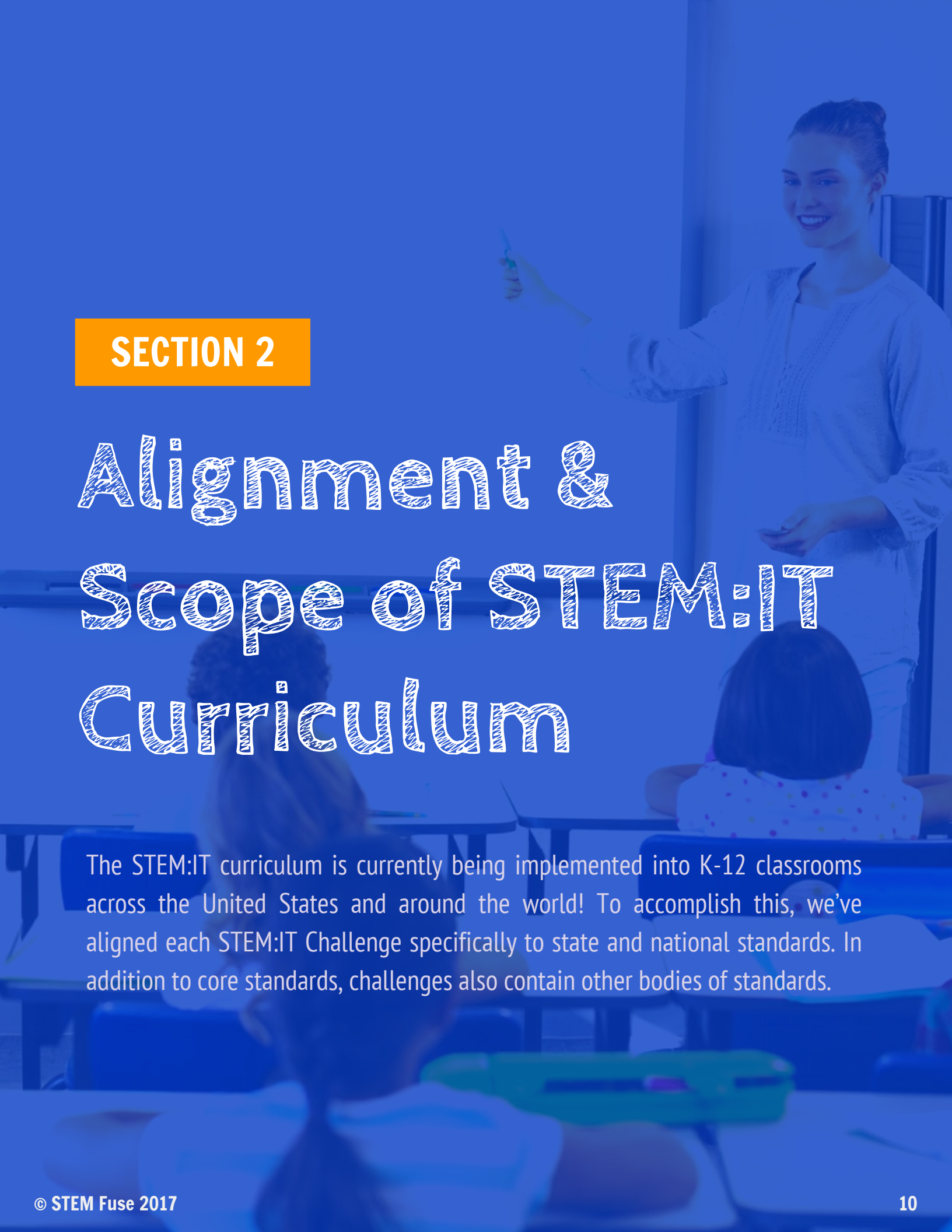
The connections between the silos of knowledge and skills as social constructs in learning can both inhibit and allow for understanding. Too often in our education system such segregation is to an extreme that the content boundaries prevent valuable and applicable multidisciplinary learning (David Roy, 2016).

In addition to the core subjects, such as math, science, social studies, and mathematics, the fine and creative arts also play an integral role in how STEM:IT was developed. The research behind this approach is based on the whole-student approach to learning. Additionally, it is well understood that arts integration influences the long-term retention of complex subject knowledge and performance (Rinne et al. 2011). All STEM:IT Challenges include a form of art integration, in addition to the cross-curricular subjects and engineering design practices.

REFERENCES

Roy, David. "Implementing a Cross-Curricular Approach." Australian Council for Educational Research - ACER, 4 July 2016,

Rinne, L., Gregory, E., Yarmolinskaya, J. and Hardiman, M. (2011), Why Arts Integration Improves Long-Term Retention of Content. Mind, Brain, and Education, 5: 89–96. doi:10.1111/j.1751-228X.2011.01114.x



SECTION 2

Alignment & Scope of STEM:IT Curriculum

The STEM:IT curriculum is currently being implemented into K-12 classrooms across the United States and around the world! To accomplish this, we've aligned each STEM:IT Challenge specifically to state and national standards. In addition to core standards, challenges also contain other bodies of standards.

NEXT GENERATION SCIENCE STANDARDS

Within the **Next Generation Science Standards** (**NGSS**) are the engineering standards, which apply to all of STEM Fuse's curriculum. These foundational skills help students problem solve by utilizing the Engineering Design Cycle (EDC - also known as the Engineering Design Process) to develop solutions to real world problems, and are featured throughout all STEM Fuse curriculum. Science standards are also applied in lessons within the STEM:IT series.

GRADES K-2

- **K-2-ETS1-1.** Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
- **K-2-ETS1-2.** Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
- **K-2-ETS1-3.** Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

GRADES 3-5

- **3-5-ETS1-1.** Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- **3-5-ETS1-2.** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
- **3-5-ETS1-3.** Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

GRADES 6-8

- **MS-ETS1-1.** Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
- **MS-ETS1-2.** Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
- **MS-ETS1-3.** Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.
- **MS-ETS1-4.** Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

GRADES 9-12

- **HS-ETS1-1.** Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
- **HS-ETS1-2.** Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
- **HS-ETS1-3.** Evaluate a solution to a complex real-world problem-based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.
- **HS-ETS1-4**. Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.

ISTE STANDARDS FOR STUDENTS

The **International Society for Technology in Education** (**ISTE**) is a nonprofit organization that serves educators interested in better use of technology in education. The ISTE Student Standards - 2016 provide a framework for technology education for K-12 application. ISTE standards are applied throughout all STEM Fuse curriculum to infuse 21st Century Learning into our learning content.

1. Empowered Learner

➔ *Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences. Students:*

a. Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.

b. Build networks and customize their learning environments in ways that support the learning process.

c. Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.

d. Understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.

2. Digital Citizen

➔ *Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical. Students:*

a. Cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.

b. Engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.

c. Demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.

d. Manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

3. Knowledge Constructor

➔ *Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others. Students:*

a. Plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.

b. Evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.

c. Curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.

d. Build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.

ISTE STANDARDS FOR STUDENTS (continued)

4. Innovative Designer

➔ *Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions. Students:*

a. Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.

b. Select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.

c. Develop, test and refine prototypes as part of a cyclical design process.

d. Exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.

5. Computational Thinker

➔ *Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions. Students:*

a. Formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.

b. Collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.

c. Break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.

d. Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

6. Creative Communicator

➔ *Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals. Students:*

a. Choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.

b. Create original works or responsibly repurpose or remix digital resources into new creations.

c. Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.

d. Publish or present content that customizes the message and medium for their intended audiences.

7. Global Collaborator

➔ *Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally. Students:*

a. Use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.

b. Use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.

c. Contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.

d. Explore local and global issues and use collaborative technologies to work with others to investigate solutions.

COMMON CORE TECHNICAL STANDARDS

Common Core State Standards (CCSS) includes important digital and technological standards throughout the Math and English Language Arts (including Literacy in History/Social Studies, Science, & Technical Subjects) standards. STEM Fuse utilizes these standards in addition to building math, reading, writing, and speaking foundational skills throughout our STEM curriculum.

Kindergarten through 5th Grade

- **RI 5, RI 7** Evaluate teacher-selected or self-selected Internet resources in terms of their usefulness for research.
- **RI 5, RI 7** Use age appropriate technologies to locate, collect, organize content from media collection for specific purposes, citing sources.
- **RI 7** Use content specific technology tools (e.g. environmental probes, sensors, and measuring devices, simulations) to gather and analyze data.
- **W 6** Work collaboratively with other online students under teacher supervision.
- **W 6, W 10, SL 2, SL 5** Create projects that use various forms of graphics, audio, and video (with proper citations) to communicate ideas.

6th Grade through 12th Grade

- **F, SMP 5, RI 7** Use spreadsheets to calculate, graph, organize, and present data in a variety of real-world settings and choose the most appropriate type to represent given data.
- **G, SMP 5** Draw two and three dimensional geometric shapes using a variety of technology skills.
- **EE, A, F, SP, SMP 5, W 8, SL 5** Explain and demonstrate how specialized technology tools can be used for problem solving, decision making, and creativity in all subject areas (e.g., simulation software, environmental probes, CAD, GIS, dynamic geometric software, graphing calculators).
- **SL 5** Strategically use digital media to enhance understanding.
- **RI 5, RI 7, SMP 3** Explain how technology can support communication and collaboration, personal and professional productivity, and lifelong learning.
- **W 6, W 10, SL 5, SMP 5, RI 7** Use a variety of media to present information for specific purposes.
- **W 6, W 10, SL 2, SL 5, SMP 3** Demonstrate how the use of various techniques and effect can be used to convey meaning in media.
- **RI 5, RI 7** Identify probable types and locations of Web sites by examining their domain name.

UTILIZED STEM STANDARDS

STEM:IT Series		NGSS Engineering Design Standards	ISTE Technology Standards	Common Core Technology Skills
STEM:IT Elementary	K-2	**K-2-ETS1-1.** Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. **K-2-ETS1-2.** Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. **K-2-ETS1-3.** Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	**K-12** **1. Empowered Learner (A-D)** Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences. **2. Digital Citizen (A-D)** Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical. **3. Knowledge Constructor (A-D)** Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others. **4. Innovative Designer (A-D)** Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions. **5. Computational Thinker (A-D)** Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions. **6. Creative Communicator (A-D)** Students will communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals. **7. Global Collaborator (A-D)** Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.	**K-5** **RI 5, RI 7** Evaluate teacher-selected or self-selected Internet resources in terms of their usefulness for research. **RI 5, RI 7** Use age appropriate technologies to locate, collect, organize content from media collection for specific purposes, citing sources. **RI 7** Use content specific technology tools (e.g. environmental probes, sensors, and measuring devices, simulations) to gather and analyze data. **W 6** Work collaboratively with other online students under teacher supervision. **W 6, W 10, SL 2, SL 5** Create projects that use various forms of graphics, audio, and video (with proper citations) to communicate ideas.
	3-5	**3-5-ETS1-1.** Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. **3-5-ETS1-2.** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. **3-5-ETS1-3.** Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.		
STEM:IT Middle School	6-8	**MS-ETS1-1.** Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions. **MS-ETS1-2.** Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem. **MS-ETS1-3.** Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success. **MS-ETS1-4.** Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.		**6-12** **F, SMP 5, RI 7** Use spreadsheets to calculate, graph, organize, and present data in a variety of real-world settings and choose the most appropriate type to represent given data. **G, SMP 5** Draw two and three dimensional geometric shapes using a variety of technology skills. **EE, A, F, SP, SMP 5, W 8, SL 5** Explain and demonstrate how specialized technology tools can be used for problem solving, decision making, and creativity in all subject areas (e.g., simulation software, environmental probes, CAD, GIS, dynamic geometric software, graphing calculators). **SL 5** Strategically use digital media to enhance understanding. **RI 5, RI 7, SMP 3** Explain how technology can support communication and collaboration, personal and professional productivity, and lifelong learning. **W 6, W 10, SL 5, SMP 5, RI 7** Use a variety of media to present information for specific purposes. **W 6, W 10, SL 2, SL 5, SMP 3** Demonstrate how the use of various techniques and effect can be used to convey meaning in media. **RI 5, RI 7** Identify probable types and locations of Web sites by examining their domain name.
STEM:IT High School	9-12	**HS-ETS1-1.** Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants. **HS-ETS1-2.** Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering. **HS-ETS1-3.** Evaluate a solution to a complex real-world problem-based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts. **HS-ETS1-4.** Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.		

SECTION 3

STEM:IT Program Case Studies & Testimonials

STEM:IT was officially released in the fall of 2016 and it's taken off in classrooms around the world! Students and teachers alike have provided positive feedback and our pilot case studies have continued to demonstrate program effectiveness and student results.

K-8 STEM:IT Case Study

Discovery Charter School K-8 (Inver Grove Heights, MN)

Discovery Charter School opened its doors for the 2016 - 2017 school year. Discovery's focus is to raise student engagement by integrating STEM into K-8 subject areas Reading, Science, Social Studies, Math and ELA. Discovery teachers noted that **STEM:IT** helped to raise engagement in core subject areas and develop problem solvers.

How STEM:IT Was Used:

Integration of STEM and technology into core subjects.

STEM:IT in Action

Case Study Blog Discovery Case Study

Video STEM:IT and 3D printing

(Case Study Blog and Video were conducted by VariQuest - a **STEM Fuse** partner)

6-12 STEM:IT Testimonial

Ballinger Junior High & High School (Ballinger, TX)

Ballinger Junior High serves grades 6-8, and is part of Ballinger Independent School District. Ballinger Junior High put a focus on providing all students opportunities to learn about STEM and STEM Careers through project-based learning with a career focus. Ballinger Junior High teachers saw a spark in student engagement, creativity, collaboration and overall interest in the subject matter.

How STEM:IT Was Used:

Semester Long STEM/Careers intro Course

STEM:IT in Action

Ballinger STEM Website Ballinger STEM

Testimonial See Page 3

SECTION 4

Frequently Asked Questions About the STEM:IT Series

We understand choosing a STEM program is a big decision, so all questions are good questions! Here you'll find a compiled list of questions provided by teachers, administrators, and districts alike. If you're still harboring a question specific to your district, contact us at sales@stemfuse.com.

FAQs ABOUT THE STEM:IT PROGRAM

Check out some of the frequently asked questions when considering a STEM:IT for your classroom, school, or district.. Simply locate the topic and read the Q & A. Contact us for additional questions!

STANDARDS: Is the curriculum developed based on state and national standards such as the Common Core State Standards?

*Yes. **STEM:IT** aligns with all state and national standards. (See Pg.4 of this document.)*

ENGAGEMENT: How does the vendor address varied learning styles and ensure students are actively engaged with – and motivated by – the instructional content?

*The **STEM:IT** digital content includes a variety of colorful visuals, text, animations, videos, clickable links, and video/audio instruction providing many ways for students to learn. Students navigate through the digital presentations and actually interact with the instruction. Other aspects of gamification like onboarding with a tutorial, a progress bar, game show style review questions and congratulation slides upon completion are included.*

FLEXIBILITY: Does the vendor meet the needs of the district's current programs? Is the vendor capable of helping the district expand existing programs or start new programs?

***STEM Fuse** was founded to help generate student engagement in STEM. Our reason for success and growth comes from our innate way of working with our teachers to fulfill their classroom needs. **STEM:IT** will integrate seamlessly into existing courses, and prepare students for other STEM/CTE courses.*

ACADEMIC INTEGRITY: What is the vendor's approach to ensuring academic integrity in a digital environment, and what features are provided to enforce district policies?

***STEM Fuse** introduces students to Intellectual Property- Copyright, Patents, Trademarks and Trade Secrets, and how to correctly identify, use and reference different resources.*

ASSESSMENT: Does the curriculum employ multiple methods to assess student performance, including teacher- and computer-scored assessments? Are test banks randomized to provide a new test for each assessment attempt?

The STEM:IT K-12 Series offers game show style quizzes meant solely for group/individual review opportunities. STEM:IT is a digital curriculum supplement designed to enhance learning in core subjects, but not meant to replace any existing testing a school/district currently has in place. Teachers and Students will have guidelines and journals available for the assessment of the STEM project-based learning activities.

FAQs ABOUT THE STEM:IT PROGRAM

Check out some of the frequently asked questions when considering a STEM:IT for your classroom, school, or district.. Simply locate the topic and read the Q & A. Contact us for additional questions!

COMPREHENSIVE SOLUTION: Is the LMS and formative assessment integrated with the digital content? Does the solution allow for a variety of implementation models (e.g., from virtual to in-classroom instruction, from complete courses of study to modular content to enhance classroom instruction)?

Every STEM Fuse course or resource is digital (working with any device with internet connection) and downloadable / printable, offering flexible solutions for different classroom technology and teaching styles. The flexibility of delivery allows for use in every kind of learning environment.

EASE OF IMPLEMENTATION: How much effort is required by district technical staff for implementation? What impact will the solution have on existing network infrastructure?

The STEM:IT Series requires no experience to teach, and uses digital curriculum and software making implementation as easy as accessing an internet browser. Suggested browsers are Google Chrome, Mozilla Firefox or Microsoft Edge.

PROFESSIONAL DEVELOPMENT: How will the vendor ensure programs are set up for success on day one? What type of professional development and ongoing support is provided to the district?

Every STEM:IT Subscription includes a detailed webinar training and year-round support. The training provides an overview of the delivery platform, STEM:IT content and STEM:IT software. After the online training, teachers will understand how to access the content, how to add student accounts, how to use the software, how to use the teacher's solutions and how to contact STEM Fuse support for questions that arise throughout the school year.

COST OF THE PROGRAM: How does the cost of the vendor's proposed solution relate to the value the solution will bring to the district?

STEM:IT Elementary, Middle and High School are priced separately at $1,999 per site/ per year. Price includes unrestricted access to the program, professional development/support, teacher connection and student competitions.

LOOKING FOR SOMETHING? Still have questions? Send us an email at sales@stemfuse.com!

STEM FUSE

A REVOLUTION IN STEM EDUCATION

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Maple Grove, MN 55311

WWW.STEMFUSE.COM