Application for T-STEM Designation - New/Provisional

2017-2018

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Texas Education Agency
Application for T-STEM Designation
Statutory Authority: Texas Education Code §39.235

Overview of Designation

In order to operate as a Texas Education Agency (TEA)-approved Texas - Science, Technology, Engineering, and Math (T-STEM) Academy, a district must seek and receive T-STEM designation from TEA. In order to receive the T-STEM designation, a school must exhibit key traits from the T-STEM Academy Design Blueprint included in this application. The intent of this designation is to ensure that districts operating T-STEM Academies: integrate all the key characteristics of well-researched and well-designed STEM education while serving students who may not have otherwise considered the fields of science, technology, engineering, and math.

Benefits of Designation

Recognition as an Approved T-STEM Academy:
Schools designated by TEA as state-approved T-STEM Academies will receive various forms of media recognition including, but not limited to: identification on TEA's website as a state-approved T-STEM Academy and recognition in press releases.

Participation in T-STEM Convenings:
Special events hosted by TEA for T-STEM Academy administrators and principals to provide input on policies and procedures that impact T-STEM Academies.

Membership in the T-STEM Network:
Frequently opportunities are provided for principals, teachers, and students in designated T-STEM Academies through the T-STEM network to share best practices through conferences and technical assistance sessions. Membership in the T-STEM Network allows T-STEM Academies to access online exemplars, professional development, and webinars.

Access to Professional Development and Technical Assistance:
Designated T-STEM academies will have access to high-quality technical assistance which includes advice and information from a Leadership Coach who has successfully facilitated the design and implementation of the majority of T-STEM Academies operating in Texas.

Strength of T-STEM Model:

- Through the designation process, TEA will recognize those T-STEM Academies that effectively incorporate T-STEM Design Blueprint elements. The designation process will enable districts and their partners to engage in the research and planning necessary to ensure that their T-STEM Academies are set up in the most effective way possible.
- The T-STEM Blueprint provides a framework for T-STEM Academies to access college and career opportunities that support post-secondary success.

Questions about Completing the Application

Who can fill out a T-STEM Academy designation application?

Any district or charter school campus may apply to be designated as a T-STEM Academy. Potential applicants are encouraged to carefully review the T-STEM Design Blueprint to determine readiness for implementation of the model.

Any district or charter school campus that is utilizing 2016-2017 as a planning year, and if designated will beginning implementation at the beginning of the 2017-2018 school year.

Will have to fill out the same application each year?

No. New designation applicants and those T-STEM Academies that are provisionally designated will complete the comprehensive form. T-STEM Academies that are fully designated must complete the abbreviated T-STEM designation application yearly. The abbreviated renewal application will require a designated T-STEM Academy to provide updates regarding changes in the design and operation of the Academy. However, the primary focus of the annual renewal will be to gather evidence on the Academy's progress along the T-STEM Academy Design Blueprint continuum.

Will this application be required for T-STEM Academy grantees in the future?

Yes. In future funding cycles, completion of this application will be a program requirement for T-STEM Academy grant recipients.

Who can I contact for help filling out this application?

- **New applicants** may contact the T-STEM Program Manager at tstem@tea.state.tx.us.
- **2016-2017 designated T-STEM Academies** may contact their current T-STEM coach.

Application Information

General Information:

- A district or charter must submit a separate application with the required attachments on behalf of each proposed T-STEM Academy.
- The application must be submitted via the online system by **5:00pm, March 31st, 2017**
- A campus must be designated prior to the beginning of the school year in order to operate as a T-STEM Academy for that year. T-STEM Academy approval is valid for a maximum of one year. T-STEM Academy designated must be applied for each year via the TEA T-STEM designation process.

Timeline & Process:

- March 31st, 2017: Applications are due to TEA in order to open a campus as a designated T-STEM Academy during the 2017-2018 school year.
- June 2017: Districts submitting applications by March 31st, 2017 will be notified of the selection or non-selection of the campus as a designated T-STEM Academy on or about June 2017. Applications submitted prior to the March 31st, 2017 deadline may be approved prior to June 2017.
- The district will receive a notification letter of selection or non-selection for each campus it proposes to operate as a T-STEM Academy.

Required Attachments:

- **Official signature:** Official signature of a district or charter official authorized by the local board to bind the applicant organization in a legally binding contractual agreement.

Required Supporting Documents:

- The Academy must have current versions of the following documents on file.
- Each applicant is required to provide an assurance that each of the supporting documents is current for the 2017-2018 school year, signed by all parties, and provides detailed information regarding the specific assurance.
  - **Dual Credit MOU**
  - **Professional Development Plan**
  - **Business/Industry Agreement**
  - **2017-2018 Master Schedule**

Questions:

T-STEM Program Manager
tstem@tea.state.tx.us

Required T-STEM Academy Design Program Elements

The following design elements are the minimum required components that must be demonstrated through this application in order to be designated as a T-STEM Academy:

- A campus must be designated prior to the beginning of the school year to operate as a TEA designated T-STEM Academy for that year. T-STEM Academy designation is valid for a maximum of one year school year. Any campus wishing to be a designated T-STEM Academy must apply each year via the TEA T-STEM designation process.
- The T-STEM Academy must serve grades 9 through 12 and may serve grades 6, 7, and 8.
  - If an academy implements a 9-12 model, it must at least serve students in 9th grade.
  - If an academy implements a 6-12 model, it must, at a minimum, serve students in 9th grade and a middle school grade.
- A campus will select their campus model from one of the options below:
  - Stand-Alone Academy Single Campus: All students are enrolled in the T-STEM Academy.
  - Stand-Alone Academy Multiple campuses: All students on each campus are enrolled in the T-STEM Academy. This model typically spans a middle school and a high school for those academies that are serving students in grades 6-12.
  - School-within-School: A subset of student enrolled in grades 9-12 are enrolled in the T-STEM Academy.
  - School-within-School Multiple Campuses: a subset of students in grades 6-12 are enrolled in the T-STEM Academy; this model typically spans a middle school and a high school
  - School-within-School Other Grade Levels: all students enrolled in grades 6-12 or 9-12 are enrolled in the T-STEM Academy but other grade levels exist on the campus (such as grades K-5).
  - Other: Applicant must describe their model in detail.
- All designated T-STEM Academies are required to report student enrollment on the PEIMS Indicator during submission 1 (Fall Snapshot), 3, and 4. Submission data must be in alignment with the model selected above.
- A campus must implement during the initial designation year. Campuses that intend to enter a planning year should not apply for designation until they are ready to begin implementation.

I. Mission Driven Leadership:

- The Academy's mission statement and planned advisory board must reflect the mission and vision of the T STEM Initiative.
- The Academy must use program review and formative evaluation to achieve its mission and goals.
- The Academy must promote leadership development and collaboration within the Academy and T-STEM Network.
- For Academies that include 6th, 7th, and 8th grades, leadership teams from the middle school and high school must collaborate on a regular basis.

II. Academy Culture and Design:

- The T-STEM culture must foster positive student identities through meaningful adult and peer relationships.
- All students graduating from the Academy must be prepared for postsecondary coursework and careers in the STEM fields through the integration of the Governor's economic workforce clusters and AchieveTexas STEM cluster into the curriculum.
- The Academy must support all students to graduate high school with four years of math, four years of science, four years of STEM electives, an Endorsement (with a primary focus on STEM endorsements), and a Performance Acknowledgement for a Distinguished Level of Achievement.

III. Student Access, Success, and Persistence:

- The Academy must have a clear plan for student support and success to achieve persistence rates above 70%.
- The Academy must instill the expectation that students expand their participation and leadership in STEM activities outside the classroom and provide the opportunity to do so.

IV. Teacher Selection, Development, and Retention:

- The Academy faculty must possess extensive subject knowledge and integrate project based learning (PBL) and STEM pedagogy into the classroom.
- The Academy must adopt and implement a plan for sustained professional development.

V. Curriculum, Instruction, and Assessment:

- The Academy must align curriculum, instruction, and assessment to provide students with rigorous STEM focused instruction.
- The Academy must deliver Innovative STEM programs that are well-defined, embed critical thinking and problem solving, foster innovation and invention, and are aligned to state and/or national standards, and industry expectations.
- The Academy must integrate science, technology, engineering, and mathematics throughout the curriculum.
- The Academy must continually monitor student progress through assessments and data collection.
- The Academy must promote STEM literacy and prepare students with 21st Century skills.
- The Academy must support three years of STEM electives at middle school and four years of STEM electives at high school.

VI. Strategic Alliances:

- The Academy must promote family involvement in student success.
- The Academy must integrate business partnerships into the curriculum and student learning experience.
- The Academy must partner with IHEs and college/career-preparation entities to ensure that students graduate with college credits and prepared for postsecondary success.

VII. Sustainability and Advancement:

- The Academy must have a plan for continuous improvement and growth.
- The Academy must adopt and implement a plan for sustained professional development.

Scoring of the Application

- Each applicant will be reviewed by T-STEM subject-matter experts from across the state.
- New applicants will be reviewed based on the proposed plan and a follow up with the applicant, if necessary.
- Each applicant will receive a notification letter from TEA indicating which designation category it has been assigned: Designated, Provisionally Designated, or Denied.
- The T-STEM Academy Design Blueprint has been consolidated in the application to highlight priorities for the planning period of designation. Applicants should focus on the benchmarks presented in answering the questions.

CONTACTS

1.1 T-STEM Academy

T-STEM Academy Name	Wayside Schools Sci-Tech Preparatory
Mailing Address - Line 1	6405 S. IH 35
Mailing Address - Line 2	
Mailing City	Austin
Mailing Zip Code	78744

1.2 School District

School District name	Wayside Schools
Mailing Address - Line 1	6405 S. IH 35
Mailing Address - Line 2	
Mailing City	Austin
Mailing Zip Code	78744

1.3 Education Service Center Region

13

1.4 Person Completing this Application

Name Prefix	Ms.
First Name	Tammy
Last Name	Koelling
Job Title	STEM Coordinator
Phone	(512) 762-6524
Email	tkoelling@waysideschools.org

1.5 Academy Principal/Director

Name Prefix	Mrs.
First Name	Mary
Last Name	Brinkman
Job Title	Principal
Phone	(512) 220-9120
Email	mbrinkman@waysideschools.org

1.6 Superintendent

Name Prefix	Mr.

First Name	Matthew
Last Name	Abbott
Phone	(512) 953-8301
Email	mabbott@waysideschools.org

1.7 T-STEM Academy Partner Information

Institute of Higher Education Partner (dual credit provider)	International Baccalaureate
STEM Business Community Industry Partner	Tokyo Electron Ltd.

1.8 Authorized School District or Charter Official

Name Prefix	Mr.
First Name	Matthew
Last Name	Abbott
Job Title	Superintendent
Phone	(512) 953-8301
Email	mabbott@waysideschools.org
Uploaded Signature	View Uploaded Document

Provisions and Assurances Agreement

If designated, the T-STEM Academy assures the following the minimum required components will be implemented in the2017 school year.

- A campus must be designated prior to the beginning of the school year to operate as a TEA designated T-STEM Academy for that year. T-STEM Academy designation is valid for a maximum of one year school year. Any campus wishing to be a designated T-STEM Academy must apply each year via the TEA T-STEM designation process.
- The T-STEM Academy must serve grades 9 through 12 and may serve grades 6, 7, and 8.
  - If an academy implements a 9-12 model, it must at least serve students in 9th grade.
  - If an academy implements a 6-12 model, it must, at a minimum, serve students in 9th grade and a middle school grade.
- A campus will select their campus model from one of the options below:
  - Stand-Alone Academy Single Campus: All students are enrolled in the T-STEM Academy.
  - Stand-Alone Academy Multiple campuses: All students on each campus are enrolled in the T-STEM Academy. This model typically spans a middle school and a high school for those academies that are serving students in grades 6-12.
  - School-within-School: A subset of student enrolled in grades 9-12 are enrolled in the T-STEM Academy.
  - School-within-School Multiple Campuses: a subset of students in grades 6-12 are enrolled in the T-STEM Academy; this model typically spans a middle school and a high school
  - School-within-School Other Grade Levels: all students enrolled in grades 6-12 or 9-12 are enrolled in the T-STEM Academy but other grade levels exist on the campus (such as grades K-5).
  - Other: Applicant must describe their model in detail.
- All designated T-STEM Academies are required to report student enrollment on the PEIMS Indicator during submission 1 (Fall Snapshot), 3, and 4. Submission data must be in alignment with the model selected above.
- A campus must implement during the initial designation year. Campuses that intend to enter a planning year should not apply for designation until they are ready to begin implementation.

1. Mission Driven Leadership:
   - The Academy's mission statement and planned advisory board must reflect the mission and vision of the T STEM Initiative.
   - The Academy must use program review and formative evaluation to achieve its mission and goals.
   - The Academy must promote leadership development and collaboration within the Academy and T-STEM Network.
   - For Academies that include 6th, 7th, and 8th grades, leadership teams from the middle school and high school must collaborate on a regular basis.
3. Academy Culture and Design:
   - The T-STEM culture must foster positive student identities through meaningful adult and peer relationships.
   - All students graduating from the Academy must be prepared for postsecondary coursework and careers in the STEM fields through the integration of the Governor’s economic workforce clusters and AchieveTexas STEM cluster into the curriculum.
   - The Academy must support all students to graduate high school with four years of math, four years of science, four years of STEM electives, an Endorsement (with a primary focus on STEM endorsements), and a Performance Acknowledgement for a Distinguished Level of Achievement.
   - The T-STEM Academy must cohort T-STEM students in core classes.
5. Student Access, Success, and Persistence:
   - The Academy must have a clear plan for student support and success to achieve persistence rates above 70%.
   - The Academy must instill the expectation that students expand their participation and leadership in STEM activities outside the classroom and provide the opportunity to do so.
7. Teacher Selection, Development, and Retention:
   - The Academy faculty must possess extensive subject knowledge and integrate project based learning (PBL) and STEM pedagogy into the classroom.
   - The Academy must adopt and implement a plan for sustained professional development.

☑ the applicant assures that the above minimum required T-STEM Designation components will be implemented in the 2017-2018 school year.

BACKGROUND

2.0 Is your campus currently designated as an Early College High School (ECHS) through the TEA ECHS designation process?

No

2.1 First year of T-STEM Academy Operation

2017-2018

2.2 Academy Model:
What is the design of the T-STEM Academy requesting designation?

Stand-Alone Academy Single Campus: All students are enrolled in the T-STEM Academy.

2.3 Target Population

What is the grade level range of students your academy will serve?

6th-12th

The T-STEM academy must serve grades 9-12 and may serve grades 6,7, and 8.
If an academy implements a 9-12 model, it must serve at a minimum grade 9 during the initial designation school year.
If an academy implements a 6-12 model, it must serve at a minimum grade 9 and one middle school grade during the initial designation school year.

Current (if applicable) and projected student enrollment:								
Grades of students to be served	**6th**	**7th**	**8th**	**9th**	**10th**	**11th**	**12th**	**Total Enrollment**
2017-2018 projected enrollment	120	120	150	65	75	60	24	614
2016-2017 enrollment (if designated in the 2016-2017 school year)	84	150	64	72	60	24	16	470

County-District-Campus numbers where students from each grade level are enrolled:							
Grades of students to be served	**6th**	**7th**	**8th**	**9th**	**10th**	**11th**	**12th**
9-Digit CDC #:	227803001	227803001	227803001	227803001	227803001	227803001	227803001

BENCHMARKS

T-STEM Blueprint Instructions

The T-STEM Academy Design Blueprint consists of seven benchmarks that drive the success of an Academy. Each benchmark highlights program requirements and offers a rubric score of developing, implementing, mature, or role model. T-STEM Academies use this tool to measure growth and progress along the continuum.

All seven benchmarks are included in the application. However, applicants may notice the program requirements are not numbered sequentially. This is because not all program requirements are included in the Designation Application. Applicants are not expected to meet or even consider all program requirements at this stage in the process. Instead, those program requirements that form the building blocks of a successful designated Academy are included in the Designation Application. Focused consideration of those particular program requirements will mean a successful applicant will have a strong foundation as a designated T-STEM Academy. The technical assistance that comes as a result of designation will allow the designated Academy to implement the Blueprint Benchmarks' full program requirements over time.

Benchmarks 1-4, 6 & 7
Applicants should first review the program requirements for each benchmark presented in the body of the application. The questions that follow pertain to those specific requirements (i.e. Benchmark 1 questions pertain to Benchmark 1 program requirements). Applicant responses should reflect a close consideration of the highlighted rubric areas in the context of what the campus has in place currently and could feasibly implement during the first designated year. Applications will be scored on the response's evident understanding of the continuum of growth along the rubric, evidence of existing programs, and feasible plan to move forward for each requirement.

Benchmark 5: Curriculum, Instruction, and Assessment
Applicants should review the program requirements presented in each section and rate the campus's existing system in the rubric's check boxes. Applicants are then asked to justify the ratings with evidence, reflection, and a plan to move forward, bearing in mind that with designation comes the tools and assistance necessary to progress along the continuum. Successful applicants will reflect an understanding of Benchmark 5 and are not necessarily expected to have all elements in place before designation.

Benchmark 1: Mission-Driven Leadership

Program Requirements

1.2.C.	Develops and demonstrates support from an advisory board (AB) consisting of representatives from the Academy, school board, district, community, higher education, and STEM businesses to support and guide facility requirements, resource acquisition, curriculum development, internship, externships, and student/community outreach to ensure a successful 6-20 STEM academic and career pipeline.
1.3.A.	Integrates and assesses the level of mission-driven and data-driven decision making evident in the daily work of the Academy.
1.4.A.	For 6-12 campuses, middle school and high school leadership teams regularly collaborate to advance 6-12 alignment and student retention in STEM.

Key Elements for Success

- Job descriptions and roles for design team, leadership team, and advisory board
- Mission is posted and can be articulated by teachers, staff, students, key stakeholders, etc.
- MOUs with T-STEM Centers

	Developing	Implementing	Mature	Role Model
1.2.C.	Advisory Board (AB) established.	AB positions and subcommittees are identified.	AB develops innovative and creative approaches to support Academy mission and vision.	AB addresses major shifts in STEM, educational standards, industry expectations, and analyzes SWOT of Academy, resulting in measurable action items.
1.3.A.	Little or no evidence of data-driven and mission-driven decision making.	Data is used to design student interventions, Annual Action Plan (AAP), and to inform teaching and learning aligned to the mission.	Teachers work interdependently as teams to review data across content areas, develop targeted interventions, and develop common formative assessments.	The Academy's continual analysis of results for improvement is critical to the school's system of interventions and culture of celebration.
1.4.A.	Academy leadership occasionally collaborates with each other (6th - 12th), with T-STEM centers, and T-STEM Coaches.	Academy leaders and staff collaborate with each other (6th - 12th), and with T-STEM Centers and Coaches to integrate STEM teacher preparation, teaching, and learning. *And meets criteria from Developing*	Academy plans with regional T-STEM Center, vertical alignment teams 6th - 12th (at least quarterly), and meets with their T-STEM Coach, virtually or Face-to-Face (at least monthly). *And meets criteria from Developing and Implementing*	Academy dialogues on a regular, ongoing basis in vertical alignment teams (6th - 12th), with T-STEM Centers and Coaches, and utilizes available T-STEM resources to improve student achievement and teacher preparation. *And meets criteria from Developing, Implementing, and Mature*

Benchmark 1: Mission-Driven Leadership

- Program Requirement 1.3.A. addresses the use of data to drive design, decision making, and program review in a T-STEM Academy.
- Designated campuses will be expected to meet or exceed “Implementing” on the rubric above (Data is used to design student interventions, Annual Action Plan, and to inform teaching and learning aligned to the mission) by the end of the first designated year.

Describe below how the campus will meet or exceed this expectation.

Sci-Tech Preparatory thrives in a growth mindset: our expectations are high, we are purpose-driven for students, and we always function in a continuous improvement cycle. Our annual action plan is called the Campus Improvement Plan. It is developed collaboratively each year and reviewed for progress every quarter by the Campus Leadership Team (CLT). The CLT consists of eight Department Chairs, two Mentors, the Instructional Coach, Dean of Students, Counselor, Library Media Specialist, STEM Coordinator, ESL Coordinator, SpEd Chair, Assistant Principal, and Principal. This group works in teams to complete the HB 5 Needs Assessment documents and works as a whole group to review student performance data and climate survey data. The School Planning Team is made up of parents, school staff, and district staff who work as a group to review the Campus Improvement Plan draft and give feedback and suggestions. To begin with, the CLT conducts a Needs Assessment to review the results of the school’s growth in student achievement, attendance, school climate, technology, parent/community involvement, fine arts, wellness/PE, 21st century college and career readiness, second language acquisition, drop out prevention, support of high achievers, and compliance issues. This information is gathered through parent/staff/student surveys, House Bill 5 Needs Assessment documents, and student data reports. The CLT lays the foundation for the improvement plan by identifying strengths and areas of growth for the school from the various data points listed. The School Planning Team must approve the portions of the campus improvement plan addressing campus staff development needs.

Continuous use of data to drive instruction is established through the use of common formative assessments, data binders, and data meetings with coaches and administrators. At the beginning of the year, every teacher assembles a data binder with demographic data, STAAR data, and programming data (SpEd, 504, ESL) sorted by the instructional periods they teach, enabling teachers to review this data as they are lesson planning to support continued development in tiered instruction as appropriate in each class. We use the Region 13 system DMAC (Data Management for Assessment and Curriculum) to create assessments, run analysis tools, and warehouse data that teachers can access to complete data binders and create and analyze their formative assessment results. All disciplines review reading assessment data as this is a campus-wide improvement goal for students. Every two weeks in the first semester, all teachers gave a short formative assessment of the reading skills taught, to measure their progress and adjust instruction accordingly. After reviewing data with all teachers, the Language Arts team led professional development on teaching specific reading strategies in all content areas for skills identified.

After the December midyear formative assessment data was reviewed with the whole staff, teachers met in grade level interdisciplinary teams and planned interventions including Friday afternoon academies, Saturday school tutoring, morning math tutoring, and schedule changes for increased reading instructional time. Teachers in all content areas supported the Friday afternoon academy instruction in areas that correlate with their subject.

- Program Requirement 1.2.C. details the requirements for an Academy's advisory board (AB).

List the planned AB members and their job title (example: John Smith, School Board Member; Jan Smith, STEM Business Leader, etc.). Detail how this board will support the Academy work.

CTE/STEM Advisory Council

Tod Baker - Design 8 Teacher, IBCP Coordinator
Mary Brinkman - STP Principal
Katy Crist - Senior Manager, Marketing & Communications at Tokyo Electron Limited
George Helfenstine - Wayside Science Specialist
Tammy Koelling - STP STEM Coordinator and STEM Advisory Chair
Richard Kopec, PhD - St. Edward's University, Professor of Computer Science
Angie Lemon - STP Parent
James Mulhall - Installation & Planning Manager (US), Field Services Team at Tokyo Electron Limited
Ethan Peters - STP Instructional Coach
Chelsea Schauer - STP Library Media Specialist
Lacey Wilson - Science/CTE Teacher
Shaunna Smith, Ed.D. - Assistant Professor of Educational Technology (new member)

The T-STEM Advisory Board reviews and confirms that the T-STEM standards and expectations are met and continue to grow year after year. They are especially key in supporting the school's development of partnerships with higher education institutions and industries in the community.

The T-STEM Advisory team is a combination of stakeholders from higher education, industry, parents, teachers and staff. The Advisory Council meets once per quarter to review and advise on the STEM progress and next steps for continued growth. Discussions of career pathways are frequent, including current trends in STEM-related job markets.

The council has created multiple opportunities for enrichment for students through various avenues. Our partnerships with industry have created student access to the SEMI HIGH Tech University to survey industry jobs, create presentations and team building skills. After school activities have been created to engage students in careers directly related to STEM (F1 in Schools and Land Rover 4x4 Challenge) that challenge their design skills and teamwork.

Program Requirement 1.1.A: Provide the Academy mission statement below.

Sci-Tech Preparatory Mission Statement

Wayside Schools prepares college ready, community engaged, global citizens.

Through rigor, service, and a global perspective, Sci-Tech Preparatory students are confident and knowledgeable, actively creating the future in which they will live and work together.

- Program Requirement 1.4.A details the requirements for 6th-12th campuses to collaborate on a regular basis to advance 6th-12th alignment and student retention in STEM.

Describe below how the campus will meet or exceed this expectation. If Academy is 9th-12th write, "Not Applicable".

The staff and Leadership at Sci-Tech Preparatory are a cohesive team holding students to high standards both academically and behaviorally. Every Friday we have early release that provides 2.5 hours of staff development. Each week the teachers have two to three 90 minute Professional Learning Community PLC) periods to work on continued growth and alignment. Teachers work in small group or partnerships and complete reflections frequently. The Leadership Team collaborates on the decisions for the use of the PLC time based on data and feedback from their team. The culture of Sci-Tech Preparatory is one of community and ownership. Shared leadership is practiced through the Leadership Team, the School Planning Team, the STEM/CTE Advisory Council, and numerous strategic teams that focus on specific needs of the school. Teachers are encouraged to be innovative in reaching our students from wherever they are to move them forward.

Because IB Design is a required course in our 6th, 7th, and 8th grade, followed by the requirement of Principles of Applied Engineering course in the 9th grade, discussions of STEM pathways and upcoming STEM classes are naturally occurring every year in these classes. Currently, vertically aligned teams of teachers are working on defining the continuum of expectations for our IB Approaches to Learning skills (similar to CCRS), such as time management, communication techniques, and critical reading skills.

Our STEM coordinator has been in consultation with the Region 13 T-STEM Project Coordinator, German Ramos, guiding our application process and identifying resources to support it. Our STEM coordinator attended the Texas STEM Conference in January 2017. Our Library Media Specialist is an active member of the Texas Computer Educators Association and regularly attends their conferences and trainings for professional development which is shared with staff through PLC periods and professional development activities

Benchmark 2: T-STEM Academy Culture and Design - Blueprint

Texas Science, Technology Engineering and Mathematics

Benchmark 2: T-STEM Academy Culture and Design
Program Requirement: 2.1 Personalization

2.1.A Addresses in AAP and strategic plan the details for remaining small, allowing for personalization and maintaining collaborative learning communities of students.
2.1.B Plans and implements a non-graded student advisory program that is regularly scheduled, noted in the master calendar/schedule, and focuses on personalizing the student experience, (builds relationships with students and parents, develops character, and fosters global literacy).
2.1.C Develops a process for hearing and responding to student voice.

Key Elements for Success	Example Artifacts
• Student IGPs w/ CCRS, Endorsements, and Performance Acknowledgement plans • Master schedule for advisory • Student enrollment	• Opportunities for orientation sharing and team building activities both on- and off-site • Advisory class curriculum • Student goal setting and reflection logs • Teacher mentors assigned to students • Pre- and post-assessments of advisory class goal • Students sit on advisory board and/or have voice in student work products, clubs, competitions, governance, and course offerings • School wide activities to build/share culture • Student ambassadors serving as classroom greeters and/or guide tour groups • Teacher/student ratios, actual class sizes • Surveys documenting students' elective requests

Developing	Implementing	Mature	Role Model
1. District and Academy resources are allocated to ensure teaching staff and facilities remain small.	1. Annual Action Plan and Academy handbook address plan for maintaining personalized, small, learning communities.	1. Students are regularly afforded multiple opportunities to build relationships with staff and peers such as working in academic and/or competitive teams horizontally and vertically.	1. Protocols are developed to ensure students have a clear and documented voice in the Academy (student council, advisory committee to the director, suggestion box, etc.
2. Student advisory is regularly scheduled and focuses on relationships, building school capital, developing and fostering global literacy.	2. Advisory class has written curriculum with goals, expectations, scope, sequence, and pacing guides.	2. Teachers work in teams to develop systemic advisory programs with horizontally and vertically aligned student outcomes.	2. Annual resources are allocated to develop, revise, and sustain advisory program with input from students, teachers, parents, and external partners.
	And meets criteria from Developing	*And meets criteria from Developing and Implementing*	*And meets criteria from Developing, Implementing, and Mature*

Texas Science, Technology Engineering and Mathematics

Benchmark 2: T-STEM Academy Culture and Design

Program Requirement: 2.1 Personalization

2.1.D Arranges for a flexible school day with blocks of time that support student learning (tutorials, collaboration, meetings).

2.1.E Celebrates high quality student work through student exhibits on-site, web-based, and/or in state and national forums.

2.1.F Provides every 6th – 12th student with an individualized STEM-focused high school graduation plan that addresses: four years of math and science; an Endorsement in STEM, Business and Industry, Public Service, or Arts and Humanities; identifies target areas for Performance Acknowledgements; and is at least annually reviewed and revised with the counselor, student, and family.

Example Artifacts

- Honor roll, grade level/school-wide celebrations
- Classroom and building displays
- Number of students participating in student exhibits
- Agendas/signatures for IGP meetings with students and family
- IGP, record folder/portfolio, 6th -16th course plan
- Master schedule, tutoring schedule
- Minutes/action items from site based committees, etc.
- Website showcasing student work
- Documentation of at least annual 6th – 12th IGP meetings with parents and students

Developing	Implementing	Mature	Role Model
1. Academy develops a flexible schedule that supports student success.	1. Schedule is developed with input from teachers, counselors, content coaches, extracurricular and internship/capstone requirements.	1. Teachers work in teams to adjust daily schedule to facilitate interdisciplinary PBL.	1. Schedule is adjusted to meet student needs according to data, student, teacher, and parent voice; intervention and extension plans.
2. Academy regularly schedules for students to share their knowledge and work products.	2. Students participate in panel presentations, debates, academic fairs, webinars, online challenges, competitions, design challenges, etc.	2. Resources are allocated to provide students with opportunities to participate in state and national forums, conferences, and competitions (financial, facilities, staffing, transportation, etc.).	2. Academy establishes protocols with input from key stakeholders to gauge the effectiveness of student participation in competitions, challenges, etc. towards promoting college and career readiness as well as Academy goals.
3. Academy develops IGP for each 6th – 12th student that addresses STEM pathways, THECB College and Career Readiness Standards.	3. Student, counselor, and family regularly review and revise the IGP to address student goals for courses, grades, Endorsements, Performance Acknowledgements, college entrance exams, PSAT/ACT/SAT, career aspirations, etc. *And meets criteria from Developing*	3. Annually reviews and revises IGP according to previously established protocols and timelines. *And meets criteria from Developing and Implementing*	3. Mentors are assigned to students to develop intervention contracts to address deficiencies or acceleration opportunities in IGP. *And meets criteria from Developing, Implementing, and Mature*

Texas Science, Technology Engineering and Mathematics

Benchmark 2: T-STEM Academy Culture and Design
Program Requirement: 2.2 Culture

2.2.A Collaborates with stakeholders to develop a new handbook or modify the existing handbook with clear procedures, policies, and consequences that support the development of a strong T-STEM culture.

2.2.B Involves all stakeholders in developing a culture of respect, responsibility, trust, and meaningful adult and peer relationships throughout the Academy in order to foster positive student identities.

2.2.C Creates a professional learning community environment of collaboration, teaming, and high expectations among administrators, teachers, and stakeholders, with a focus on and a commitment to the learning of each student.

Example Artifacts

- Handbook, attendance/discipline goals/data
- Customs and celebrations, modeling lessons for respect, responsibility, trust
- Student, teacher, parent surveys address culture
- Sharing of ideas and strategies and joint problem-solving are widespread.
- School developed common vocabulary for evidence of "good teaching"
- PLC protocols and expectations (meeting times, book studies, goals, results based on interventions, reflections on results – new actions, etc.)
- Collaborative planning of learning and teaching activities
- Widespread teamwork involving teachers and support staff
- Peer walkthroughs, lesson evaluations, and critical friends reflections

Developing	Implementing	Mature	Role Model
1. Handbook is developed to address student, parent expectations and a culture of respect, responsibility and trust.	1. Handbook addresses key tenets of cultural beliefs of Academy (student ability and achievement, efficacy and effort, power, distributed leadership, cultural sensitivity, proactive and reflective practice, etc.).	1. Handbook is developed with input from key stakeholders with clear policies, procedures, and consequences (attendance, discipline, student contracts, teacher extended days, etc.).	1. There is a high degree of commitment to school-wide professional values and a strong sense of cohesion and consistency of approach, with protocols to analyze, build, and assess effectiveness of culture.
2. Professional Learning Community (PLC) is developed which supports staff devoting effort, energy, time, and resources into incorporating valuable new strategies into their practice.	2. An inquiry-based continuous improvement orientation to practice is pervasive, with data informing practice and learning widely shared.	2. Staff regularly and consistently plans together, collaborates and shares ideas through meetings, website resources, teaming, team teaching etc., and garners input from external experts.	2. A desire to do the best for *all* students pervades the school as evidenced by protocols for regular and deep school-wide dialogue about good teaching, assessment, learning, projects, and successes of individual students.
	And meets criteria from Developing	*And meets criteria from Developing and Implementing*	*And meets criteria from Developing, Implementing, and Mature*

Benchmark 2: T-STEM Academy Culture and Design - Responses

- Applicants should consider the program requirements listed above as they pertain to a student's individualized learning experience.

Describe the campus's efforts to support students to reach this goal. This description should include plans for: an advisory period, a positive school culture, enhanced relationships with parents, and responding to student voice.

Sci-Tech Preparatory has a daily Advisory period for grades 6-12 built into the Master Schedule. Classes are typically 18 students or less to allow for more opportunity to build relationships through daily activities including team building, SEL activities, and conferencing. Advisory has a written curriculum which includes the International Baccalaureate (IB) Approaches to Learning (ATL) skills to guide students in problem solving methodologies. Students also review grades and participate in practicing reading skills, including development of language vocabulary and content specific vocabulary.

Sci-Tech Preparatory has implemented the IB Middle Years Program (MYP) Personal Project for students in the 10th grade. Students have the opportunity to choose a staff member to work with who will serve as both project supervisor and mentor. This project is done independently outside of classroom time, and focuses on student interests with a service to others. Students create their project, whatever it may be, and write a report that describes their process in decision-making and reflection of their final product.

Although we don't have a PTO per se, a team of parents work together with a group of teachers and administration to plan parent engagement events based on the survey from Back to School Night. One Parent Engagement evening was a brief IB presentation with a family game time, enjoyed by approximately 40 family members, and included gift prizes from local businesses to support our families. Another Parent Engagement evening was a STEM night where students and teachers worked together exhibiting STEM related activities and projects for our families and our visiting elementary families. Projects included Robotics, Chemistry labs, Bridge exhibits and physics projects. Texas Orthopedics joined us with a station and team of staff members to share career opportunities that their field offers.

Student voice is heard both in classroom instruction through Project and Problem-based Learning and in leadership opportunities through Student Council, NJHS, and other student groups. Student Council has coordinated a school dance, a lock-in, and a movie night. The High School students, through their advisory classes, determined the name of our newly remodeled classrooms, and the Seniors organized their own prom with the counselor. All classrooms have student greeters and some students participate in the Ambassador program to take newly enrolled students on a school tour of their classes. Students know they have a voice, and they know what is expected for them to succeed at Sci-Tech Preparatory.

Applicants should consider the program requirements listed in the "Benchmark 2 Program Requirements" link above as they pertain to postsecondary college and career success.

- 6th-12th STEM-focused high school graduation plan: IGP with Endorsement, Performance Acknowledgement, and Distinguished Achievement.
- 6th-12th STEM career and college exploration, and college readiness preparation with students and parents to include college transition plan.
- Collaboration with IHE.
- All students should graduate with 12-30 hours college credit and be prepared for postsecondary coursework in STEM fields.

Multiple STEM career pathways have been established, based upon the STEM focus of the school, interests of the students, the IB Career-related Programme requirements, and the Career and Technology Education (CTE) course requirements. Sci-Tech Preparatory provides four pathways to our students. One pathway supports further development of the visual arts through the graphic design sequence of CTE classes. The other three pathways develop areas of the science fields: the health sciences pathway, the computer science pathway, and the engineering pathway. Student career interests have helped shape our current pathways and, as we grow in size, we expect to expand our choices.

We offer the following Performance Acknowledgments: Bilingual and Biliteracy (score 80 or above in 4 English credits and two or more LOTE credits), high PSAT, SAT, or ACT scores, dual credit courses (12 hours or more), IB exam scores (4 or above), or earning an industry certification.

Sci-Tech Preparatory is multifaceted in its approach to college and career readiness. All 9th graders take College Readiness, a semester class in which students investigate their path to college, career opportunities, and cost. Students pick colleges they are interested in and investigate the cost of attending four years, entrance requirements, and scholarships. Students develop a plan for meeting high school performance expectations needed for their college's entrance. Each student discusses career goals with the counselor and chooses the pathway that supports their goals. They continue to meet with the counselor annually to review goals and course choices to make sure they continue to align in the direction they are planning for.

Sci-Tech Preparatory will host a College Day in 2017-2018, including representatives from multiple universities, to establish networking opportunities that support their career path. STP students take the PSAT yearly in grades 9-11, obtain results to track their progress and identify areas for improvement. During the school year, bulletin boards around campus highlight various universities and provide flyers for further information. The college counselor hosts trips to 4-6 universities each year. Sci-Tech Preparatory is developing a Summer Bridge workshop in the summer of 2017 to help students and families transition into college, and help 5th graders transition into middle school.

Sci-Tech Preparatory works with Austin Community College (ACC), St. Edward's University, and Texas State University. ACC hosts various classes for dual credit on alternating years. Dr. Kopec from St. Edward's University is a member of the T-STEM Advisory Council and supports our science growth. St. Edward's University has also provided facilites to Sci-Tech Preparatory for our Senior Commencement. Dr. Shaunna Smith from Texas State University has been working collaboratively with Sci-Tech Preparatory to research benefits and methodologies of 3D printing in the classroom and bring exciting STEM experiences to students.

Students have access to the IB Diploma which, upon successful completion, generates 24 college credits. Students may also take IB courses by subject certificate, equal to 3-6 college credits per course.

- Program requirement 2.2.C. highlights the importance of a strong Professional Learning Community for the success of all students.
- Review at the rubric continuum and tools in Example Artifacts from a successful Academy.

Describe how the campus will use these tools to progress into a "Mature" campus over time. "Staff regularly and consistently plans together, collaborates and shares ideas through meetings, website resources, teaming, team teaching, etc., and garners input from external experts." This description may include inquiry-based approaches, data informed decision making, Professional Learning Communities, collaboration, and integration of technology.

Wayside Schools is an authorized International Baccalaureate Programme continuum from PK through graduation that includes all four IB programmes offered - the Middle Years Programme, Diploma Programme and Career-related Programme Through this framework we offer a rigorous, concept-based environment with an inquiry focus for grades 6-12. Teachers utilize the IB unit planning cycle that fosters backward design principles with explicit expectations for alignment from the inquiry statement and learning objectives to the assessment piece. Our professional development each quarter includes continued training in this planning process. We believe wholeheartedly that academic rigor with relevance is a critical piece in closing achievement gaps for students.

Collaboration at Sci-Tech Preparatory includes 2-3 periods weekly for Professional Learning Community (PLC) time. In the first quarter this was organized by subject areas to allow for needed vertical communication and sharing of strategies as we start the school year. In the second quarter the teachers had the opportunity to choose their learning partners. Partnerships often cross both grade level and subject area. Now the smaller learning partnerships collaborate on weekly PLC tasks, such as critiquing each other's websites, digital resource training, paired observation time, and student work protocols.

Collaborative professional development is provided through 14 staff development days, early release Fridays, and five district PLC meeting days. Weekly Friday PD is differentiated to the needs of the staff based on the data. This models the differentiation we expect in the classroom and provides meaningful growth opportunities for the staff. Student success improves as teachers learn to differentiate Tier 1 instruction, including developing strategies for working with English Language Learners.

Teachers meet by department and in smaller PLC groups to further grow and align their instruction. We use Atlas-Rubicon collaborative planning space as a tool for collaboration, and horizontal and vertical alignment. Teachers are required to plan and post 10 day lesson cycles within the units they are developing in Rubicon. Scope and sequence documents are in a shared file, created and used by teachers to write their units and lesson plans, and currently being further developed as curriculum planning guides in collaboration with the district Academic Team specialists.

At the district level, the Chief Academic Officer leads an Academic Team of Curriculum Specialists that work with campus staff to grow and develop their understanding of their TEKS, their teaching practices, assessment tools, etc. Specialist use an evaluation tool, Strong Start Observation (SSO), to facilitate working with teachers through frequent walk-throughs followed by coaching sessions for improving their practices. The observing team is the Principal, the Assistant Principal, the Instructional Coach, the district Program Coordinator, and the district Math Specialist. The coaching includes a review of the data from their formative assessments given in each two-week teaching cycle. An analysis of the school-wide data from the SSO is shared with the faculty each quarter, and guides the professional development for the next quarter.

Texas Science, Technology Engineering and Mathematics

Benchmark 3: Student Outreach, Recruitment, and Retention
Program Requirement: 3.1 Recruitment and 3.2 Open Access

3.1.A Develops structures and processes for marketing and recruitment to encourage participation from underserved students and families (transportation or plans for transportation to the school, child care for family events, and translation of all recruitment and marketing materials).
3.1.B Actively partners with feeder middle and/or elementary schools to develop student interest in STEM education and to increase advancement rates from middle school STEM to high school STEM.
3.1.C Develops a systemic recruitment plan that includes students, parents, counselors, teachers, district, and community.
3.2.A Develops an admission policy to include an open access, lottery-based selection process that encourages applications from all students. The application will not be based on state assessment scores, discipline history, teacher recommendation, minimum GPA, or other requirements that would be used to limit selection.
3.2.B Consists of a population that is 50% or greater economically disadvantaged and underrepresented students.

Key Elements for Success	Example Artifacts
• Written admission policy and application with lottery explained	• Recruitment schedule and locations (schools, churches, community centers, etc.) • Brochures and marketing items in English, Spanish, and/or relevant second language • Survey data (community input, enrollment trends, etc.) • STEM feeder school crosswalk recruiting curriculum • Plan to recruit with feeder schools • Documented support efforts (transportation, child care, etc.) • Needs assessment • Number and percentage of students matriculating from middle school STEM to high school STEM

Developing	Implementing	Mature	Role Model
1. Academy details a plan and process for marketing to and recruiting from appropriate communities and feeder schools to reach high need and underrepresented students.	1. Marketing and recruitment plan developed with input from key stakeholders, and targets feeder pattern, community needs, and cultural relevance.	1. Marketing plan highlights Academy's STEM pathways and Endorsements; and industry and higher education partners. Recruitment efforts include Academy staff, students, and parents. At least 80% of 8th grade MS STEM students matriculate to HS STEM Academy.	1. Students and staff from Academy collaborate with feeder schools to develop, deliver, and monitor recruitment results from STEM crosswalk engagement lessons conducted at the feeder middle schools. At least 90% of 8th grade MS STEM students matriculate to HS STEM Academy.
2. Academy has at least 50% economically disadvantaged and underrepresented students, via an open, lottery based admission policy, where the application *does not* include requirements that might deter students such as STAAR, grades, teacher recommendation, discipline, or attendance.	2. Clearly communicated admission policy that indicates target enrollment goals and implements support processes structures such as transportation, child care, etc. to meet goals. *And meets criteria from Developing*	2. Academy tracks enrollment data and indicates some increases in recruitment/enrollment rates. *And meets criteria from Developing and Implementing*	2. Academy employs a needs assessment to analyze demographic trends to ensure equitable access and recruitment of greater than 50% economically disadvantaged and underrepresented students and sustains a full complement of students at each grade level. *And meets criteria from Developing, Implementing, and Mature*

Texas Science, Technology Engineering and Mathematics

Benchmark 3: Student Outreach, Recruitment, and Retention

Program Requirement: 3.3 Student Support and Retention

3.3.A Develops and implements systemic, tiered strategies for student support and retention (outreach, early intervention strategies, mentoring, tutoring, counseling, and other supports for academic and socio-emotional growth).

3.3.B Hosts 5th – 6th and 8th – 9th orientation session(s) and summer bridge program(s) to facilitate successful student transitions and retention into a STEM-focused, college preparatory, project-based learning environment.

3.3.C Provides all students with opportunities and the expectation to assume roles of responsibility within the classroom, Academy, and community.

3.3.D Supports and monitors 6th – 12th student participation in STEM activities both within and outside the classroom to ensure that all students engage in STEM clubs, STEM competitions, and STEM field experiences.

3.3.E Hosts parent seminars to develop deep understanding and commitment to the rigor of college readiness and the high expectations of a STEM Academy.

Example Artifacts

- Student, parent, staff contracts
- Student retention and persistence plan
- Orientation and bridge agendas
- Exit interviews
- IGPs Minutes from persistence meetings, retention/attrition data
- Program adjustments due to student and community voice
- Copies of trainings and participation of parents/community
- Satisfaction/interest surveys from students, parents, community, staff, etc.
- Lists of clubs, service learning projects, STEM activities, STEM field experiences, and planned competitions

Developing	Implementing	Mature	Role Model
1. Academy develops a strategic plan for student retention and persistence, and maintains persistence rates above 70%.	1. Student persistence rates range between between 70-80% and the strategic plan addresses research-based supports such as annual IGP review, parental involvement, tiered interventions, and cultural relevance.	1. Student persistence rates range between 81-90%, and the strategic plan includes yearly metrics, analysis of why students leave, and a plan to identify and prevent at-risk students from leaving.	1. Campus engages in ongoing dialogue to address persistence data (lack of course credit, leaving the Academy) and uses data to ensure persistence rates above 90%.
2. Academy develops student orientation/summer bridge program(s), student clubs, and plans for external STEM activities and competitions.	2. The orientation/summer bridge program sets priorities and includes a timeline with skills, tools, and resources for students to successfully transition to a STEM environment.	2. The orientation/summer bridge program is implemented as planned and continually refined annually, with a complete scope and sequence and supporting materials.	2. The orientation/summer bridge program monitors initial student success, identifies struggling students early on, and ensures those students have additional support.
3. Students can select from a small number of leadership opportunities available.	3. The staff encourages students to select leadership opportunities.	3. The staff monitors student involvement in leadership and STEM activities, clubs, and competitions; and develops interventions for students who have minimally participated.	3. Student leadership is evidenced in nearly every non-classroom related initiative or event and at least 90% of students participate in leadership and/or STEM activities, clubs and competitions.
4. Academy creates STEM Academy orientation for parents and stakeholders.	4. Opportunities exist for parents and stakeholders to participate in service learning, and/or attend student presentations.	4. At least bi-annual opportunities exist for parents and stakeholders to participate in STEM activities.	4. Annual parent and stakeholder participation goals are developed and monitored for continued improvement.
	And meets criteria from Developing	*And meets criteria from Developing and Implementing*	*And meets criteria from Developing, Implementing, and Mature*

Benchmark 3: Student Outreach, Recruitment, and Retention

- Review Program Requirement 3.1.A/B/C and 3.2.A/B.

Describe the Academy's open-access admission policy, the marketing, and recruitment plan to parents, students, and the community; and partnering with feeder schools to increase advancement rates in STEM from elementary to middle to high school.

Sci-Tech Preparatory has a marketing and recruitment plan developed with input from key stakeholders that utilizes multiple media tools, and encourages participation in the local community. All recruitment material is written in both Spanish and English. Sci-Tech Preparatory population consists of 55% economically disadvantaged and 70% Hispanic families.

Sci-Tech Preparatory has a recruitment plan that includes a bilingual staff member dedicated to student recruitment and enrollment, advertising through district and community media sites, Assistant Principal visits to local charters and private schools that finish at elementary level, and ongoing tours for interested stakeholders. Local campus visits occur during the fall with parents, students and teachers to discuss Sci-Tech Preparatory opportunities for pathways. The Assistant Principal returns to the campuses in the spring to host a Question and Answer session to discuss more detailed programming information. District representatives also attend local marketing expos to recruit new students. Fifth grade students from Wayside's three feeder elementary schools (Altamira, Real Learning Academy and Eden Park) are automatically eligible to enroll in Sci-Tech Preparatory (90% retention) as they progress through Wayside.

Sci-Tech Preparatory has an open access, lottery-based selection process that encourages applications from all students. The application is not based on state assessment scores, teacher recommendation, minimum GPA, or other selection limiting requirements. Sci-Tech Preparatory enrollment policy and process is provided in the Parent Handbook on the school website. Step by step information is given and the lottery process is clarified.

Our 8th grade matriculation into high school is 96%. Students in 6-8 grade take a STEM design class every year that continues to grow their exploration of these careers. 8th grade students meet annually with the principal to review pathway opportunities and lay out their initial four-year plan. Increasing the advancement rates of students continuing in STEM is supported during annual counselor discussions for high school students. Students entering 9th grade take Principles of Applied Engineering, another exploratory class, and 10-12th grade students choose a STEM course aligned to their pathway, such as Bio-Technology, Computer Science or Engineering Design and Presentation.

- STEM Academies host orientation, summer bridge, and college preparatory seminars for parent and students; encourage student leadership, monitor student participation in STEM activities, clubs, competitions and field experiences; and develop intervention plans for students who minimally participate.
- STEM Academies maintain persistence rates above 70%, with a goal of at least 90%

Describe the campus plan to progress to "Mature" on the continuum for Program Requirement 3.3 Student Support and Retention (review the "Benchmark 3 Program Requirements" link at the top of this page).

Our middle school matriculation program is headed by the Assistant Principal. It includes a Buddy Day, 5th grade classroom visits and presentation of the middle school curriculum and transition, and a New Student Orientation night after the lottery for all incoming students. During the Buddy Day in the fall, 5th graders visit Sci-Tech Preparatory classes including Design, the Arts, and World Languages. Students travel in small groups, led by 7th grade ambassadors touring the school. Approximately 90% of our three feeder 5th grade cohorts matriculate to our 6th grade. We are currently planning to add a Summer program in July 2017 with a STEM focus to encourage the STEM career pathways as we enroll our new youngest students.

In the fall the Principal meets with each 8th grader to discuss their four-year plan, their current progress, and the transition and rigor of high school. Career pathway choices and IB courses are discussed in detail to help students choose the path that interests them the most. The student is sent home with a copy of their plan and the High School Programs Handbook for the parents to review with the student and sign. Parents are encouraged to attend evening meetings about high school transition or to schedule an appointment with the Principal for follow up.

Sci-Tech Preparatory encourages student leadership through Student Council, National Honor Society and Junior National Honor Society. Students are also selected for National Youth Leadership Forums through their PSAT test participation. Student voice drives the after school clubs also, as students can petition to add a club that is school-related and of an area of interest to them.

Sci-Tech Preparatory supports students in STEM activities through project-based learning in the classrooms, as well as competitions such as F1 in schools, Land Rover 4x4, and Moody's Mega Math Challenge. STEM field experiences include the 9th grade field trip to Samsung Semiconductor, and participation in the SEMI High Tech University, hosted by Tokyo Electron Ltd. Currently Sci-Tech Preparatory hosts an annual STEM Night which is open to all Wayside Schools including the elementary schools.

Although we are just beginning to track alumni data (one graduating class of 17 students), our persistence rate is high for students completing STEM endorsements. Our plan to mature on the continuum will include collecting metrics to measure persistence rates of STEM endorsements, increasing college readiness programming in grades 10-12, and continued work on the summer bridge program to identify and increase skills, tools and resources to enable 5th graders to successfully transition to a STEM environment. Sci-Tech will continue to grow our opportunities for parents and stakeholders to participate in STEM activities through our IB Personal Project Exhibition and eventually through our Senior IB Capstone Projects (2019).

Benchmark 4: Teacher Selection, Development, and Retention

4.1.E.	Provides opportunities for ongoing professional development to improve teachers' content knowledge, technology embedded instruction, integrative STEM pedagogy, college and career readiness standards, instructional strategies for ensuring a successful P-20 pipeline, and leadership capacity.
4.2.A.	Develops a Professional Development (PD) plan for a sustained professional development model of continuous learning based on student results, teacher development, and the short- and long-term goals of the Academy.
4.2.B.	Adopts a systemic professional development model of continuous learning that addresses prioritized needs as informed and evaluated by multiple sets of quantitative and qualitative data (student assessment data, instructional/classroom evaluations, technological developments, workforce demands, demographic changes, and community/societal expectations and needs).
4.2.C.	Sustains a PLC by instituting job-embedded ongoing opportunities for continuous learning, peer coaching/mentoring, STEM externships, and participation in STEM teacher and leader cadres for teachers and administrators (research-based practices, content competence, new instructional strategies, technology integration, reflective inquiry, and student artifact analysis).
4.3.C.	Adopts and implements a plan for new teachers to include orientation, induction, acculturation, mentoring, professional development, and administrative support.
4.3.D.	Designs or employs innovative programs to support the recruitment and selection of highly qualified STEM teachers.

Key Elements for Success

- Master schedule with common planning time
- Teacher turnover rate
- Teacher mentoring program
- Written recruitment plan

	Developing	Implementing	Mature	Role Model
4.1.E	Academy has authority to hire "best" qualified for goals of the Academy and STEM blueprint requirements.	Develops a written plan for creative recruiting to ensure high qualified, effective teachers.	Develops annual needs assessment and actively implements a teacher recruitment and placement program.	Resources are allocated for recruitment of best qualified candidates, with the Academy partnering with teacher preparation programs such as UTeach, to recruit highly qualified teachers for Academy needs.
4.2.A. 4.2.B.	Develops PD plan with clear pedagogy expectations, aligned with mission goals, teacher needs, and student needs	Academy regularly uses diverse assessment tools/processes, enhanced media, adult learning theories, professional reflection time, problem-solving protocols, and self-paced learning with computer and human interaction for support, coaching, mentoring, and collegial interaction.	Needs assessment and PD plan address teacher and student retention to include teacher, student, and parent voice in decision-making process.	Meaningful partnerships with external organizations ensure progressive expectations for educators' application of content knowledge, curriculum design, and delivery.
4.2.C.	Develops a PLC plan that identifies ways in which teachers will work in collaborative teams to build shared knowledge and formative/summative data.	Teachers collaboratively develop 6th - 12th common essential student outcomes which reflect their efforts to build shared knowledge regarding best practice, (STEM integration, college and career readiness, 21st century skills,).	Teachers collaboratively clarify the criteria they use to judge quality of student work and criteria is consistently applied horizontally and vertically.	Teachers participate in externships and mentorships with higher education and industry. PLC plan is annually monitored, evaluated, and revised for effective practice.
4.3.C	Develops an Orientation plan aligned to Academy mission and vision, and teacher enculturation.	Induction plan addresses Academy expectations for instructional skills; interactions with students, parents, and community; classroom management; assessment of learning; technology; professional development; and mentoring.	Induction process is clearly enunciated, consistently practiced, and evaluated and revised for effectiveness.	Each new teacher participates in the induction process, is assigned a mentor teacher, understands the strategic goals of the Academy, and completes a Needs Assessment that identifies areas for individual professional development.
4.3.D.	Common planning time within the school day focuses on PLC collaboration.	Teams develop team-time norms, set goals, and evaluate effective use of team-time for curriculum development, student artifact reflection, parental involvement, etc. *And meets criteria from Developing*	Teams develop common metrics to measure and inform, in order to identify strengths and weakness in their individual practice, and to collaboratively improve their individual and collective efforts to help all students learn. *And meets criteria from Developing and Implementing*	Collaborative school-level planning is judged effective as evidenced by student learning outcomes. *And meets criteria from Developing, Implementing and Mature*

Benchmark 4: Teacher Selection, Development, and Retention

- Review program requirements for benchmark 4 in the link above.

Describe how the Academy will recruit, support, and retain highly qualified teachers. This should include plans for:

- Teacher recruitment and retention plan
- Sustained professional development (PD) plan which incorporates project-based learning and an integrated STEM curriculum into instructional practices based on qualitative and quantitative student data. (A timeline of planned PD will be uploaded in Benchmark 7.)
- A job-embedded Professional Learning Community with common planning times for collaboration.
- New teacher support (new to Academy and/or teaching profession).

Faculty needs assessments are completed every January by the Principal. Recruitment commences once the school board approves staffing requests. We developed a staffing model with help from Rice University researchers that provides a stronger support infrastructure and more collaboration time for the teachers. Wayside re-designed their hiring practices to incorporate a rigorous process that includes extensive phone screen, review of lesson plans, guest teaching that allows for student feedback, followed by a panel interview with the hiring team. Positions are posted on the Wayside Career page of the website, and are published into Indeed.com, TASA (Texas Association of Secondary Administrators), TIBS (Texas IB Schools), and subject-specific career websites. Stipends are provided to teachers in leadership roles or in high-need subjects such as Special education, math, and science.

First year teachers are partnered with a mentor teacher in order to support their growth and development as a teacher, as well as enculturation into Wayside. Sci-Tech Preparatory's campus Instructional Coach provides consistent observations and feedback to grow teachers. This allows all teachers the opportunity to discuss and expand on strategies in their teaching at Sci-Tech Preparatory. Teachers are identified into Tiers based on needed supports to determine the level of support from the Instructional Coach. First year teachers are automatically placed on Tier One to receive the most support initially. Our staff supervision and evaluation process has become more streamlined and focused with implementation of our Strong Start Observation protocol this year. Every teacher has a walk-through every three weeks, more frequently in that time period, if needed. A one-on-one meeting follows every walk-through to coach and plan forward. The observing team is the Principal, the Assistant Principal, the Instructional Coach, the district Program Coordinator, and the district Math Specialist. Coaching includes a review of the data from formative assessments given in each two-week teaching cycle. Teachers welcome this support and work collaboratively with resources for instructional growth.

Region 13 training is available and widely attended by staff to target areas of need and growth. State and national conferences related to subject areas are also available to the teachers, as funding allows. For example, six math teachers attended conferences from the National Council of Teachers of Mathematics, and two science teachers attended the National Science Teachers Association for training of trainers on the Next Generation Science Standards. From the NGSS training and the growth of IB practices, we are implementing more cross-curricular and PBL expectations for 2017-18. Professional development plans for 2017-18 focus on IB assessment practices, including performance-based and criterion-related assessments, critical thinking and questioning strategies, cross-curricular STEM integration, and continued growth in transformational use of technology.

Collaborative professional development is provided through 14 staff development days, early release Fridays, and five district PLC meeting days. Each week the teachers have 2-3 PLC periods to work on continued growth together in small group or partnerships by grade level or subject area.

Benchmark 5: Curriculum, Instruction, and Assessment

Example Artifacts: 5.1

- Course syllabi, lesson plans, unit lessons, PBL, scope, sequence, pacing guides
- Lessons include STEM standards, state standards, national standards, college and career readiness standards, 21st century skills
- Benchmark schedule, course passing rates, retention rates
- Student portfolios, IGPs, counseling, advising, college crosswalk, and feedback loop
- Plans for PSAT, Accuplacer, TSI, CTE, interventions, etc.
- Horizontal and vertical alignment of curriculum
- Students graduate with Endorsements & Performance Acknowledgements

In Benchmark 5, all program requirements are scored individually. There are no separate metrics. Assess the level of implementation for the program requirements below according to the standards to the right.		**Developing** Investigate, Research, and Create	**Implementing** Formalize, Revise, and Publish	**Mature** Data-driven evaluation of effectiveness of program requirements	**Role Model** Continually assesses to document successes and challenges with action plans implemented to correct deficiencies in performance
5.1.A.	Aligns curriculum, instruction, and assessment (such as, but not limited to, Texas CCRS, national and state standards, content, context, culture, cognitive level, competencies, skills, processes, 21st century skills, and STEM synthesis).		*Implementing*		
5.1.B.	Develops a scope, sequence, and pacing guide for a vertically and horizontally aligned curriculum centered on state standards, career and college readiness standards, STEM integration, and industry expectations.		*Implementing*		
5.1.C.	Develops an assessment and intervention plan to address gaps in student achievement and areas for extension.		*Mature*		
5.1.D.	Supports and encourages all students to successfully complete four years of mathematics, four years of science, four years of STEM electives, and at least one Endorsement in STEM, Business and Industry, Public Services, or Arts and Humanities, with a primary focus on a STEM Endorsement; and earn a Distinguished Level of Achievement as well as a Performance Acknowledgement in order to graduate college ready.		*Role Model*		
5.1.E.	Offers dual credit, articulated concurrent enrollment, AP or IB courses that all students will graduate with 12-30 college credit hours.		*Implementing*		
5.1.F.	Establishes curriculum expectations, monitoring, and accountability mechanisms that are reflectively revised to ensure a constancy of mission purpose (aligned resource allocation, integrated STEM curriculum development, teacher professional growth, and student results).		*Implementing*		

5.1 Rigor

- Review the program requirements for Benchmark 5.1 Rigor on the previous page.

Describe how the Academy will progress along the continuum. This should include plans for:

- Alignment of curriculum and instruction as supported by assessment
- Assessment/intervention or acceleration plans for students
- Plan for four tears of math, science, and 12-30 college credit hours (dual credit/AP/IB)
- HS Endorsements available to Academy students

Sci-Tech Preparatory teachers are trained in IB assessment practices that include support and encouragement for student learning through feedback during the learning process, promoting positives attitudes toward learning, promote the development of critical and creative thinking skills, reflect the international mindedness by allowing assessments to be set in a variety of cultural and linguistic contexts, promote a deep understanding of subject content by supporting students in their inquiries set in real-world contexts, and authentically assessing conceptual understanding through the use of rubrics aligned to assessment criteria. Our professional development plan requires that teachers will be trained and experienced in IB assessment practices, use of rubrics, and backward design to align curriculum and instruction for student achievement. Scope and sequence documents created by each teacher are being further developed into planning guides in collaboration with district content specialists with a focus on vertical alignment.

Based on NWEA's Measures of Academic Progress and local benchmark data, students are placed into accelerated instruction through the use of multiple platforms in a blended learning environment. We provide advanced Mathematics and Language & Literature courses for 6-8th grade to prepare for advanced high school programming.

Eighth graders conference with the principal in December to lay out their 4 year high school plan exploring the Endorsements and IB Pathways available. During the middle of the 9th grade year, students begin having annual meetings with the counselor to review their 4 year plan, make adjustments as needed for their desired career pathways, and choose their courses for the following year.

Sci-Tech offers 2 of the 5 available HS Endorsements: Arts and Humanities and STEM. All high school graduates are expected to achieve 1 or both endorsements. All Wayside students graduate with at least 4 Maths and 4 Sciences. Progress in their individual graduation plans is monitored annually by the counselor and grades are monitored each 9 weeks by the administrative team. Campus improvement plan is reviewed by the leadership team each quarter to reflect on and assess progress in our goals and maintain focus for allocation of our resources. Goals in the CIP are revised as needed to increase student achievement and plan staff development to align with student needs. Student data is reviewed by the faculty after every quarterly benchmark. Final state assessment data is reviewed at the beginning of each school year.

Students have access to the IB Diploma which, upon successful completion, generates 24 college credits. Students may also take IB courses by subject certificate, which translates to 3-6 college credits per course. Dual credit courses are offered through Austin Community College every other year as our junior and senior class sizes are growing to meet the minimum enrollment requirements for ACC dual credit classes. High school students in 9-11 take the PSAT annually to prepare for the SAT as seniors, and the Wayside district is exploring the ACT Aspire program for future participation.

Identify the endorsement areas that the T-STEM Academy will be offering to students in the 2017-2018 school year by checking each individual endorsement area.

☑ STEM (All designated T-STEM academies are required to offer the STEM endorsement)
✖ Business and Industry
✖ Public Service
☑ Arts and Humanities
✖ Multidisciplinary Studies

Benchmark 5: Curriculum, Instruction, and Assessment

Example Artifacts: 5.2

- Defined engineering coursework (Infinity Project, Project Lead the Way)
- Student journals, student presentations, peer performance assessment rubrics, and peer mentors
- Self-paced learning, student contracts, progress reports, exit interviews, parent/teacher/student conferences
- Lessons include work force clusters, expert practitioners, field-based learning, research of current issues, PBLs, guest speakers, differentiation, intervention and acceleration plans, student choice
- Number of offerings and number of students participating in co-curricular activities, clubs, academic teams, and competitions (UIL, Brain Bowl, Science Olympiad, Model UN, FIRST, BEST, Vex etc.)
- Design conceptual internships, identify STEM opportunities, business partners, scientific organizations, and universities
- IGP w/capstone project (research, annual review, and analysis)

In Benchmark 5, all program requirements are scored individually. There are no separate metrics. Assess the level of implementation for the program requirements below according to the standards to the right.		**Developing** Investigate, Research, and Create	**Implementing** Formalize, Revise, and Publish	**Mature** Data-driven evaluation of effectiveness of program requirements	**Role Model** Continually assesses to document successes and challenges with action plans implemented to correct deficiencies in performance
5.2.A.	Delivers innovative STEM programs that are well-defined, embed critical thinking and problem solving, innovation and invention, and are aligned to state and/or national standards and industry expectations.	*Implementing*			
5.2.B.	Supports and encourages students to complete three years of STEM electives at middle school and four years of STEM electives at high school.	*Mature*			
5.2.C.	Develops performance-based and project-based assessments aligned to these innovative programs and state/national/industry standards.	*Implementing*			
5.2.D.	Develops and implements a plan for supporting accelerated student achievement for students with demonstrated deficiencies or proficiencies in mathematics and science, to promote all students graduating ready for enrollment in credit-bearing postsecondary courses (e.g. Algebra I enrollment by 8th grade).	*Mature*			
5.2.E.	Incorporates into the curriculum work-based contextual learning with a global perspective.	*Implementing*			
5.2.F.	Participates in extra-curricular academic activities centered on science, technology, engineering, and mathematics; i.e. STEM field experiences, clubs, and competitions.	*Implementing*			
5.2.G.	Develops 6th-12th students' portfolios of interest in: STEM capstone projects, STEM internship opportunities, and global STEM college, degree, and career explorations. Requires all high school students to complete an internship, and/or a STEM-related capstone project, presentation, and defense; primarily focused in the state's STEM-related economic development clusters (information and computer technology, energy, petroleum refining and chemical products, advanced technologies and manufacturing, aerospace and defense, biotechnology and life sciences.).	*Implementing*			

5.2 STEM-Focused Curriculum

- Review program requirements for Benchmark 5.2 STEM-Focused Curriculum on the previous page.

Describe how the Academy will progress along the continuum. This should include plans for:

- Well-defined STEM programs that are aligned with state, college and career readiness, and industry standards and embed critical thinking and problem solving, and foster innovation and invention
- Three years of STEM electives at middle school and four years of STEM electives at high school. For high schools, list the CATE elective pathways and courses that support each Endorsement offered by the Academy
- Performance and project-based assessments aligned to state, college and career readiness, and industry standards
- Work-based and contextual learning in the curriculum
- STEM-focused extracurricular activities (field experiences, clubs, and competitions)
- STEM-related internships and/or senior capstone projects, presentation, and defense
- Plan for 6th-12th student STEM portfolios

At Sci-Tech Preparatory, STEM programs aligned with TEKS, CCRS, and industry standards begin in 6th grade Middle School Design, continuing with various required and choice courses in our STEM program at the high school level. All students are required to take 3 years of Middle School Design, 9th grade Principles of Applied Engineering, and a variety of STEM Electives in 10-12th. These classes align with industry standard and CCRS through the implementation of IB Approaches to Learning (ATL) and The IB Design Cycle. IB requires that an authorized school implement ATL and the Design Cycle but the how is up to our teachers and administration. Sci-Tech chose industry standard processes such as IDEO's Design Thinking Toolkit, Oracle Academy, Sketch-Up, AutoDesk, Thingiverse, Adobe Creative Cloud, and WordPress to allow for learning experiences that address the cross-disciplinary standards in the CCRS and the iterative nature of the IB Design cycle. These experiences foster innovative thinking, critical thinking, problem solving, and metacognition as addressed in the CCRS. Examples of projects include: Freshmen using Makerbots and Thingiverse to 3-D print prosthetic hands for E-nable, Graphic Design projects for Logos, Portfolios, Maps, Newsletters, Marketing Materials, and Web Design, Bridge Design Challenge in Geometry, sixth grade language arts and world cultures projects in which students crafted letters to a unit of soldiers deployed to Afghanistan focusing on their world geography and global communication skills. Our high school offers these IB Career-related Programme Pathways through CTE courses: 1. Health Science Pathway - Principles of Applied Engineering, DP Mathematics, DP Biology, Anatomy and Physiology, Forensics, and World Health Research 2. Computer Science Pathway – Principles of Applied Engineering, DP Mathematics, DP Biology, Fundamentals of Computer Science, Computer Science I, Computer Science II 3. Engineering Pathway- Principles of Applied Engineering, DP Mathematics, DP Biology, Engineering Design and Presentation I, Engineering Design and Presentation II 4. Graphic Design Pathway- Principles of Applied Engineering, DP Visual Arts, DP Design Technology or DP Language and Literature, Graphic Design I, Graphic Design II (adding Digital Media for 10th grade in 2018-19) Sci-Tech offers these extracurricular opportunities: * 4x4 in schools challenge as after school programs for extensions and STEM enrichment. * Personal project for 10th graders (capstone project for MYP Programme) * Creativity, Activity, and Service (capstone project for DP Programme) * Reflective Project (capstone project for CP Programme) * Senior Capstone Project for Speech Requirements * Engineering field trips to Samsung Austin Semiconductor * SEMI High Tech University hosted by Tokyo Electron Limited * Tokyo Electron Limited job shadowing for Graphic Design * Moody Mega Math Challenge * Green Team campus ecology club * STEM Night with student teacher and community participation in hands-on STEM learning experiences and career opportunities * Job Alike meeting with IBM Design to align our Design practices with Industry Standards * Toyota manufacturing processes field experience in Design Technology * Digital Portfolios through WordPress are in place and in trial mode for some students this year, extended to all students 6-12th grade in SY 2017-18.

Describe the current STEM pathways available at the academy and list all industry certifications that students have the opportunity to earn by graduation.

Our high school offers these IB Career-related Programme Pathways through IB Diploma and CTE courses: 1. Health Science Pathway - Principles of Applied Engineering, DP Mathematics, DP Biology, Anatomy and Physiology, Forensics, and World Health Research 2. Computer Science Pathway – Principles of Applied Engineering, DP Mathematics, DP Biology, Fundamentals of Computer Science, Computer Science I, Computer Science II 3. Engineering Pathway- Principles of Applied Engineering, DP Mathematics, DP Biology, Engineering Design and Presentation I, Engineering Design and Presentation II 4. Graphic Design Pathway- Principles of Applied Engineering, DP Visual Arts, DP Design Technology or DP Language and Literature, Graphic Design I, Graphic Design II (adding Digital Media for 10th grade in 2018-19)

Benchmark 5: Curriculum, Instruction, and Assessment

Example Artifacts: 5.3

- Peer observations, mentors, cross-curricular teams
- Walkthroughs, observations, model lessons
- Data informs scaffolding, re-teaching, and extension
- Team planning that defines student products, assessments, rubrics, and standards for cross-curricular and other PBLs, teacher research on STEM field expectations, current issues, and technology.
- Student presentations include digital materials, peer and internal/external expert evaluation
- Academy teachers have mentors at university and industry level that provide input to curriculum development
- Year-at-a-glance checklist documenting course coverage of state standards, 21st century skills, college readiness standards throughout grading period

In Benchmark 5, all program requirements are scored individually. There are no separate metrics. Assess the level of implementation for the program requirements below according to the standards to the right.		**Developing** Investigate, Research, and Create	**Implementing** Formalize, Revise, and Publish	**Mature** Data-driven evaluation of effectiveness of program requirements	**Role Model** Continually assesses to document successes and challenges with action plans implemented to correct deficiencies in performance
5.3.A.	Incorporates data-driven instruction.	*Role Model*			
5.3.B.	Creates an environment for shared teacher responsibility and accountability for student learning across programs, content areas, and classrooms.	*Mature*			
5.3.C.	Organizes instructional expectations around problem-based and project-based learning with clearly defined learning outcomes for students and teachers that address state and national performance standards, college and career readiness standards, and industry expectations.	*Implementing*			
5.3.D.	Ensures teachers' use of the aligned scope and sequence and integration across the disciplines.	*Implementing*			
5.3.E.	Ensures teachers' use of high-quality curricular materials aligned with state and national standards, college and career readiness standards, and industry standards.	*Mature*			
5.3.F.	Provides opportunities for students to exercise choice and voice within a relevant and rigorous context.	*Implementing*			

5.3 Instructional Practices

- Review the program requirements for Benchmark 5.3 Instructional Practices on the previous page.

Describe how the academy will progress along the continuum. This should include plans for:

- Data driven instruction
- Shared teacher responsibility and accountability (PLC)
- Project Based Learning (PBL)
- Alignment of scope and sequence with state, CCRS, and industry standards
- Students exercise choice/voice within relevant and rigorous curriculum

Wayside is a data rich environment, and multiple tools (I.e. DMAC, MAP) are provided to collect, analyze and report the various data. Achievement results are monitored at two-week intervals for one-on-one coaching conversations and data meetings with the principal. Quarterly benchmark results are analyzed in professional development groups, with departments reporting out their data and response plans to the entire faculty for cross-curricular support opportunities. This data is also analyzed intensely by the district Academic Team to plan and adjust their supports. Final STAAR and EOC results are analyzed by the Leadership team and School Planning Team to prepare for further work with the whole faculty at the beginning of the next year. Teachers are well-rehearsed in utilizing data to find root causes, gaps in learning, gaps in teaching, and trends that reflect on the curriculum. Emphasis is given to improvements in Tier I instruction rather than relying on the traditional tutoring plans. At the start of the year, data binders led the teachers to a walk through their data on a period by period basis, creating a personal guide to assist in their weekly planning. The teachers had multiple “Aha” moments as they looked at the dynamics of their classes through the lens of their data. Differentiation became much more understood through this process.

Teachers meet by department and in smaller PLC groups to further grow and align their instruction. We use Atlas-Rubicon collaborative planning space as a tool for collaboration, and horizontal and vertical alignment. Teachers are required to plan and post 10 day lesson cycles within the units they are developing in Rubicon. Scope and sequence documents are in a shared file, created and used by teachers to write their units and lesson plans, and currently being further developed as curriculum planning guides in collaboration with the district Academic Team specialists.

Vertical and cross-curricular teams of teachers are developing the matriculation of the IB Approaches to Learning (ATL) skills, a set of executive functioning skills that correlate completely with the CCRS standards. CCRS content-specific standards that are aligned to the design subject area, including data use, technology, digital citizenship, and research are included in Design department lesson plans as a pilot. Full implementation of content-specific ATL/CCRS will continue to be developed and implemented annually to facilitate a gradual release of responsibility with our students.

PBL begins in middle school with short term projects to teach project management skills as well as provide inquiry driven learning experiences. PBL develops throughout high school with more conceptually driven, complex and authentic problem-based learning experiences that include student voice and choice. Student collaboration, self-reflection, and development of critical thinking skills are common strategies across all grade levels at Sci-Tech Preparatory. Cross-curricular integrated activities are planned frequently to support students in making connections in their learning. Design classes further develop planning skills that assist students in choice-driven PBL in their content classes.

Benchmark 5: Curriculum, Instruction, and Assessment

Example Artifacts: 5.4

- Project Based Learning (PBL)
- Systemic expectations for number of presentations per class, documentation of students presenting to internal and external panels
- Design teams, group projects, multiage projects, simulations, robotics teams, green teams
- Project scenarios based on real-world issues (Future City, FIRST, Odyssey of the Mind, etc.)

In Benchmark 5, all program requirements are scored individually. There are no separate metrics. Assess the level of implementation for the program requirements below according to the standards to the right.		**Developing** Investigate, Research, and Create	**Implementing** Formalize, Revise, and Publish	**Mature** Data-driven evaluation of effectiveness of program requirements	**Role Model** Continually assesses to document successes and challenges with action plans implemented to correct deficiencies in performance
5.4.A.	Promotes instructional strategies that challenge students to think critically, innovate and invent to solve real-world, contextual problems.	*Implementing*			
5.4.B.	Exposes students to critical readings in STEM-related fields and requires students to demonstrate their understanding of STEM disciplines in a work-based, contextual environment.	*Implementing*			
5.4.C.	Offers standards-based STEM programs that incorporate integrative STEM literacy and innovative instructional tools.	*Implementing*			
5.4.D.	Promotes applied and collaborative learning, and provides students with opportunities to present/defend their work to peers, community, industry, and university leaders.	*Implementing*			
5.4.E.	Promotes a rich culture that incorporates a natural use of current technologies to enhance instruction, curriculum, teaching, and learning, and STEM literacy.	*Implementing*			

5.4. STEM Education Integration

- Review the program requirements for Benchmark 5.4. STEM Integration on the previous page.

Describe how the Academy will progress along the continuum. This should include plans for:

- Students apply critical thinking, innovation and invention, to problem-solve real-world scenarios.
- Student exposure to STEM related fields and understanding of STEM disciplines in a work-based, contextual environment
- Students present/defend their learning (PBLs and capstone projects) to external experts
- Use of current technologies to enhance instruction, curriculum, teaching and learning, and STEM literacy

In design classes and activities (grades 6-10) and design technology and engineering courses (grades11-12) students apply critical thinking, innovation and invention to solve real-world problems. The challenges progress from teacher-driven contrived problems in the lower grades to student-driven self-identified problems in the higher grades. Design teams carry out projects/challenges in MYP design in grades 6-9. Students collaborate in fluid teams to solve real-world problems that are either campus-related, community related, or global.

Career-related Program students are exposed to the following STEM related fields –– engineering, computer science, health sciences, and graphic design. They will gain understandings of STEM disciplines through work-based, contextual studies in the Personal and Professional Skills course and through the Reflective Project, Language Development, and Service Learning areas.

Students currently present/defend projects to their peers most often. Graphic Design students will be presenting their professional websites to our TEL partners for external feedback from industry professionals. 10th graders will be presenting their Personal Projects to peers and the community in an evening exhibition format, but their work is also externally moderated (assessed) by the IB. In 2018-19, seniors will also have a career-related capstone project for presentation.

Current technology use includes Office 365 for collaboration, Sketchup Pro for 3D rendering (available to all grades), Java Fundamentals through Oracle Academy for computer Science classes, Atlassian's Jira project management software for 8th grade Design, two Mac labs, one-to-one iPads for all high school students, 3D printers, Adobe Suite for Graphic Design, Wordpress for building web sites, Edgenuity for online courses and credit recovery, Mackinvia eResouorce management system to access eBooks and educational databases, Rosetta Stone for English Language Learners, and many other tools.

Sci-Tech teacher teams are trained in content specific areas and standards such as the Next Generation Science Standards, PBL, Authentic Assessments, and IB Curriculum Design. They attend conferences, trainings, and learning experiences by providers relevant to their content areas such as the National Council of Teachers of Mathematics, Texas Computer Educators Association, Oracle Academy Training, T-STEM, Tokyo Electron Limited, and IBM Design.

Benchmark 5: Curriculum, Instruction, and Assessment

Example Artifacts: 5.5

- Academy-developed process in place to identify STEM and content relevant vocabulary and just-in-time literature
- Plan for vertical and horizontal expectations, per grade level, of STEM vocabulary and relevant literature
- Literature- and language-rich environment which includes technical language journals, articles, periodicals, current events newspapers, online resources, webinars, and texts
- STEM-focused strategies and activities such as word walls, student journals, literature circles, mock trials, student forums, debates
- Stakeholder input into selection of STEM instructional materials student goals and reflections (literacy in STEM, 21st century skills, technology, etc.)
- Integrative instruction and instructional materials

In Benchmark 5, all program requirements are scored individually. There are no separate metrics. Assess the level of implementation for the program requirements below according to the standards to the right.		**Developing** Investigate, Research, and Create	**Implementing** Formalize, Revise, and Publish	**Mature** Data-driven evaluation of effectiveness of program requirements	**Role Model** Continually assesses to document successes and challenges with action plans implemented to correct deficiencies in performance
5.5.A.	Promotes technologically proficient and scientifically literate students with highly developed academic vocabulary and STEM technical vocabulary.	*Implementing*			
5.5.B.	Graduates 21st century literate students proficient in: English, reading, speaking, writing, numeracy, arts, health, sciences, and world languages; government, civics, history, and geography; environmental science; global awareness; information, communications, and media technology; and financial, economic, business, and entrepreneurship.	*Implementing*			
5.5.C.	Selects appropriate STEM curriculum and culturally relevant instructional materials that foster widespread use of literacy strategies within the STEM curriculum.	*Implementing*			
5.5.D.	Provides opportunities for students to demonstrate the relevancy of the content through reading, writing, speaking, and presenting.	*Mature*			

5.5. Literacy

- Review the program requirements for Benchmark 5.5 Literacy on the previous page.

Describe how the Academy will progress along the continuum. This should include plans for:

- Technologically and scientifically literate students
- 21st Century skills-literate students
- STEM curriculum and culturally relevant instructional materials
- Academy literacy plan

Through the IB Design cycle, students inquire and analyze, develop ideas, present understandings to small and large groups, and evaluate the effectiveness of the solutions to iterate on their understandings and creative works. Each of these areas of focus in the design cycle require reading, writing, speaking, and listening skills. Students also learn to follow and use subject-specific IB command terms in their courses. Teachers create and employ word walls to all grade levels in each subject area to provide students with an anchor to subject specific vocabulary.

Vertical articulation of Design in grade 6-12 provides STP students with opportunities to demonstrate relevancy of content from their classes through a project-based learning structure, student voice and choice, and the IB Design cycle.

In the 6th grade course our main goals are to:

* Introduce and clarify the parts of the design cycle

* Make sure the students are on a level playing field with MS 365 suite

* Provide heavy emphasis on digital citizenship

In the 7th grade course our main goals are to:

* Increase focus on the design cycle with special emphasis on well-developed process journals

In the 8th grade course our main goals are to:

Create authentic, project-based, practical designs utilizing tools for project management and design thinking

In the 9th grade engineering course our main goals are to:

* Develop design thinking skills through the utilization of the design cycle and incorporate terminology from industry standards

* explore the career choices in STEM

* cultivate digital citizenship skills as appropriate for high school, especially internet safety and protection of intellectual property

In grades 10-12 students participate in CTE and STEM choices that continue the design cycle such as Graphic Design I & II, Computer Science I & II, Engineering Presentation and Design I and II, IB Design Technology, Forensics, Anatomy and Physiology, Advanced Biotechnology, IB Biology (Standard Level and High Level), Astronomy, Environmental Science, and Algebra II, Advanced Quantitative Reading, and IB Math.

For each course in our STEM pathways, the curriculum is defined by TEKS 19 TAC Chapter 130. Texas Essential Knowledge and Skills for Career and Technical Education.

Culturally relevant instructional materials available to students and teachers that support the TEKS curriculum include: Communicating through Graphic Design by Davis Art Space, North Texas State Engineering Curriculum, Oracle Academy, Blue Pelican Java, Goodheart Wilcox Anatomy and Physiology materials, The IB Design Cycle, TexQuest Resources, Explore Learning Gizmos, Think Through Math, Pearson My Math Lab, NWEA's Skills Navigator, Lonestar Math, Scholastic Classroom Magazines, and STEM Magazine.

Benchmark 5: Curriculum, Instruction, and Assessment

Example Artifacts: 5.6

- Data informs instruction, plan for gaps and extension
- Curriculum aligned with standards, STEM, industry, and higher education
- Formative, diagnostic, and summative assessments, lesson redesign
- Student artifact reflection is used to inform diagnostic tools and processes
- Pre/post tests, cumulative folders, parent conferences, parent portal, student learning logs
- Pre-assessments/ post-assessments, course offerings for interventions, grades, end of course exams, student presentations, narrative assessments, oral assessments, product based assessment
- IGPs, progress reports, student information sheets, home visits, parent conferences, PEIMS info, call logs, counseling schedule/visits
- Student designed projects, project rubrics, peer reviews, panel reviews, adult/expert reviews
- Project lists knowledge and skills, 21st century skills and levels of skill mastery; course syllabus provides list of performance-based assessments; PD for teachers on developing PBLs

In Benchmark 5, all program requirements are scored individually. There are no separate metrics. Assess the level of implementation for the program requirements below according to the standards to the right.		**Developing** Investigate, Research, and Create	**Implementing** Formalize, Revise, and Publish	**Mature** Data-driven evaluation of effectiveness of program requirements	**Role Model** Continually assesses to document successes and challenges with action plans implemented to correct deficiencies in performance
5.6.A.	Uses diagnostic, ongoing, and vertically and horizontally aligned formative and summative assessments for all students to drive instructional decisions.	*Mature*			
5.6.B.	Uses state and national standards, college and career readiness standards, industry standards, and STEM program requirements to develop common benchmark assessments.	*Mature*			
5.6.C.	Employs student readiness assessments or diagnostics to identify and address gaps in learning.	*Mature*			
5.6.D.	Tracks and reports student progress using student information systems.	*Mature*			
5.6.E.	Uses performance-based assessments that allow students to demonstrate their understandings of STEM concepts.	*Mature*			

5.6 Assessments

- Review the program requirements for Benchmark 5.6 Assessments on the previous page.

Describe how the Academy will progress along the continuum. This should include plans for:

- diagnostic, ongoing and vertically and horizontally aligned formative and summative assessments;
- state, college and career readiness, and industry standards alongside STEM program requirements;
- student readiness assessment to address gaps;
- student information systems to track progress; and
- performance based assessments that demonstrate student understanding of STEM concepts

MYP and CP courses such as Design, Graphic Design, Engineering and Computer Science are aligned with industry standards such as Adobe, Oracle, IDEO, and IBM design. Design thinking and student work challenges in each design class from 6-12th grade reflect industry standards.

STP utilizes a formalized process for Formative Assessments for TEKS mastery across all subject areas that occurs every other week wherein formative assessment data is analyzed by the teacher and the analysis document is shared with the principal in a data meeting. An instructional response to the data is then planned and implemented by teachers to address mastery issues. Formative data is also measured with benchmarks for state testing using Released STAAR assessments and NWEA's Measurement of Academic Progress for math, science, reading, and language.

As an International Baccalaureate school, we plan for and directly teach ATL (Communication, Collaboration, Organization, Affective, Reflective, Media Literacy, Critical Thinking, Creative Thinking, and Transfer Skills) which directly correlate to CCRS cross disciplinary standards including Intellectual Curiosity, Reasoning, Problem Solving, Academic Behaviors, Work Habits, Academic Integrity, Reading, Writing, and Research across the Curriculum, and Use of Data and Technology in all subject areas.

At the high school level, science and CTE class performance-based assessments are common. Teachers are training to create rubrics that assess conceptual understanding as opposed to checklist rubrics. In both Middle School and High School, part of our professional development plan includes continued growth in performance-based authentic assessment with rubrics that demonstrate students' conceptual understandings.

Sci-Tech Preparatory's reporting periods consist of 4½ week Interim Progress reports and 9 week reporting periods for student grades. Parents have access to the student information system to check assignment and final grades in each class and teachers have access to parent contact information to create a two-way system of communication in regards to student progress and grading.

Benchmark 6: Strategic Alliances

Program Requirements

6.2.A.	Identifies and secures key business, industry, and community partners to support STEM Academy efforts (mentorships, service learning projects, etc.).
6.2.C.	Identifies and secures key business and industry partners to provide STEM-related job shadowing, internships, and externships for students and teachers.
6.3.A	Develops a Memorandum of Understanding (MOU) for dual credit.
6.3.C	Develops partnerships to support a college going culture and to provide STEM graduates access to college support services (college trips, college entrance aid, GEAR UP and P-20 initiatives).
6.1.B	Provides opportunities to educate students/parents on STEM Academy expectations such as parental engagement, college connections, scholarship opportunities, mentorships, etc.

	Developing	**Implementing**	**Mature**	**Role Model**
6.2.A 6.2.C	Initiates a few partnerships with business, community, and industry.	Initial contact made and some support is provided by community business partners. Business and industry relationships are limited to onsite mentoring activities and some minor financial support.	Partnership with business and industry is formalized via established agreements. Outcomes and expectations are concrete and regularly reviewed. Partnership is evident by two-way communication of goals and vision as to what the STEM program provides.	Each major academic area is sponsored by corporate or community partners. Industry representation is a key component of the STEM strategic planning process. Integration of Academy students in business and community activities is visible.
6.3.A 6.3.C	Initial contact made and some support is provided by higher education organizations. Some courses are available to enhance STEM curriculum integration.	Develops Higher Ed connections to facilitate MOUs, crosswalk plans, teacher mentors, and externships.	Partnerships and MOUs with higher education communities are an integral component of Academy delivery model.	College credit is given to STEM students upon completion of academic work sanctioned by accredited colleges. Admission rates for STEM students to IHE exceed the normalized rates for all students within the sponsor school system.
6.1.B	Minimal strategic communications with parents and families.	Regularly scheduled distribution of communications is planned and presented to key stakeholder groups. *And meets criteria from Developing.*	Strategic communications are timely and are developed ad hoc as conditions warrant. Key messages are presented by leadership emphasizing the importance of the communication to the intended audiences, via community town halls, PTO meetings, advisory board meetings, and school board presentations. *And meets criteria from Developing and Implementing.*	Real time communications are evident via communications technologies such as websites, newsletter articles, and media presentations using the community's public service forums, (public television and radio). Leadership is easily accessible and continuously engages partnerships with stakeholders in community and student families. *And meets criteria from Developing, Implementing, and Mature.*

Benchmark 6: Strategic Alliances

- Review the program requirements for Benchmark 6 above.

Describe how these strategic alliances will support the Academy. The description should include details regarding the role of each IHE, business, and/or community partnership; along with parent/family partnerships and communication conventions with the Academy.

Our Industry partner Tokyo Electron Limited (TEL) supports T-STEM efforts at Sci-Tech Preparatory by consulting with our teacher for the Graphic Design class. We are working on developing Job Shadow opportunities for next year. Students will present their portfolio and complete a job interview for eligibility. Regular meetings with TEL staff occur twice a year to discuss school needs and funding support. TEL has sponsored students to attend the SEMI-HIGH Tech University hosted by TEL. Sci-Tech will be sponsored by TEL in the F1 Challenge and Land Rover 4x4 Challenge. TEL has signed an MOU at this time and is represented on our T-STEM Advisory council.

Sci-Tech Preparatory offers Dual Credit (every other year) and IB courses (beginning July 2017). An MOU from Austin Community College has been uploaded offering 6 hours of dual credit from the current year. Successful completion of the IB Diploma Program provides 24 college credits in public colleges and universities. Students may also earn college credit through the Career-Related program or single subject certificates from IB courses, which translate to 3-6 credits each course.

Our connection to IHE includes Dr. Richard Kopec from St. Edward's University, who is a member of the T-STEM Advisory council and offers advice on transition to college as well as careers. Community partnerships also exist with St. Edward's University whereby Sci-Tech Preparatory rents space in their facility for our high school graduation. We also work with Dr. Shaunna Smith of Texas State University who offers extended learning opportunities for teachers including emerging technology discussions, feedback on our class projects, and Maker Space tours. Dr. Smith offers advice on current issues related to maker space in education and career-related trends.

Our School counselor provides four to six trips a year to colleges and universities. Parent support is provided for completion of FAFSA forms and students have essay writing sessions with the counselor also. All students take the PSAT in their Freshman, Sophomore and Junior years in preparation for the SAT and ACT in their senior year. Wayside is exploring the ACT Aspire program for possible inclusion in 2018-19.

Sci-Tech Preparatory has pursued a service learning project with Enabling the Future where Sci-Tech students learn to use the 3D printers to build prosthetic hand parts, which are then assembled and shipped to third world countries through an organization called E-nable. We have extended this service learning to work with the local Girl Scouts of America, where our students act as experts to the Girl Scouts to provide mentoring as the Girl Scouts learn to print and build their own prosthetic hands.

Our programs, High School Handbook and many other tools are available through the Sci-Tech website, individual teacher websites, One-Call Now communication tool, emails, a monthly STP Raven Report newsletter, several Parent Night events, and the Sci-Tech Twitter and Facebook apps.

Benchmark 7: Assurances

The following document must be attached in order for the T-STEM Designation application to be submitted.

Official signature: OOfficial signature of a district or charter official authorized by the local board to bind the applicant organization in a legally binding contractual agreement. By signing the designation application, the district assures the minimum requirements for T-STEM Designation will be implemented in the designation year.

View Uploaded Document

Dual Credit MOU: The district or CMO provides assurance that a Memorandum of Understanding (MOU) with an Institution of Higher Education that defines the dual credit agreement is current (for the 2017-2018 school year). The MOU must be signed by all parties and ensure that sufficient detail are included and is on file at the T-STEM Academy. The executed IHE MOU for dual credit must be available for review by TEA upon request.

☑ Assurance Provided

If the T-STEM Academy is only providing AP coursework, list the AP courses that will be taught in the 2017-2018 school year.

International Baccalaureate Coursework: IB Design(Standard Level), IB Biology(Standard Level and Higher Level), IB Math, IB Language and Literature (Standard Level and Higher Level), IB Spanish (Standard Level and Higher Level), IB French Ab Initio, IB Visual Arts (Standard Level and Higher Level), IB History (Standard Level), IB History of the Americas (Higher Level)

Professional Development Plan: The T-STEM Academy applying for designation, provides assurance that a Professional Development Plan detailing the types, frequency, the provider of STEM professional development to be provided during the 2017-2018 school year, and is on file at the T-STEM Academy. The professional development plan must be available for review by TEA upon request.

☑ Assurance Provided

Business Agreement: The T-STEM Academy applying for designation, provides assurance that a minimum of one business agreement is current (for the 2017-2018 school year), signed by all parties, provides sufficient detail regarding the role of each party, (which allows students to participate in internship programs, capstone projects, or conduct field work) and is on file at the T-STEM Academy. The business agreement must be available for review by TEA upon request.

☑ Assurance Provided

2017-2018 Master Schedule: The T-STEM Academy applying for designation, provides assurance that the proposed master schedule, demonstrating a commitment to STEM education, rigorous coursework including Dual Credit, AP, or IB courses, and a vertically and horizontally aligned curriculum is on file at the T-STEM Academy. The 2017-2018 master schedule must be available for review by TEA upon request.

☑ Assurance Provided