High-Quality STEM Model Identification Guide

Intended Audience: Leadership

Purpose of the tool: The High-Quality STEM Model Identification Guide is one of the four tools designed to help leadership plan their STEM program with the indicators of a high-quality. The High-Quality STEM Model Identification Guide will assist districts in identifying the STEM model that best aligns with their current STEM programming and to set goals toward their targeted STEM model of implementation. After completing the rubric, districts will complete the scorecard and identify their strengths in STEM and opportunities for growth. This tool can be used to gather baseline data for a campus, and the districts can use this tool yearly to reevaluate their progress toward their targeted model.

The Texas Education Agency has developed the STEM Framework that provides an overview of the components needed in a high-quality STEM program. There are four tools to assist a district in developing a local STEM program that is aligned to the high-quality indicators identified by the state. The STEM tools are designed to help a district identify areas of need, identify the STEM model that best aligns with programming, help develop the structure and program design, and how to sustain programming long term.

STEP 1

Look at the Framework

- Review definition of STEM state level objectives, strategies to success, K-12 STEM education models, research-based instructional methods, and high-quality indicators

STEP 2

Complete the STEM Needs Assessment

- Identify needs and gaps in STEM programming

STEP 3

Complete the STEM Model Identification Guide

- Identify the STEM model best aligned to the district

STEP 4

Complete the STEM Program Planning Guide

- Use the STEM Program Identification Guide as a reference when planning the district's future STEM program. The STEM Continuum Sample Experiences can be used to help generate ideas.

STEP 5

Complete the Sustainability Assessment Tool

- Identify appropriate sustainability component assets and/or needs

DOMAIN 1 EQUITY OF PROGRAMMING				
Indicator of High-Quality	**EXPLORATORY MODEL (STARTING POINT)**	**INTRODUCTORY MODEL (DEVELOPING)**	**PARTIAL IMMERSION (INTERMEDIATE)**	**FULL IMMERSION (ADVANCED)**
1.1 STEM Instruction is offered for all students on campus	○ School-wide after school events or stand-alone experiences Examples: Code Night, Engineering Fair, and STEM Night	○ STEM experiences are available for a limited number of students Examples: STEM elective classes, after school clubs, and competitions.	○ STEM experiences are offered during core academic classes (science, math, English Language Arts Reading (ELAR), and social studies) and aligned to the TEKS Examples: In English class, students read a story and identify a problem that could be solved using a design challenge.	○ STEM integrated thinking is embedded in core content, aligned to the TEKS, and measured in all classes regularly Example: Students and teachers are held accountable for STEM teaching and learning through grades, lesson plans, or other monitory method.

DOMAIN 2 SCHOOL CLIMATE AND CULTURE				
Indicator of High-Quality	**EXPLORATORY MODEL** **(STARTING POINT)**	**INTRODUCTORY MODEL** **(DEVELOPING)**	**PARTIAL IMMERSION** **(INTERMEDIATE)**	**FULL IMMERSION** **(ADVANCED)**
2.1 Professional development on integrated STEM content, resources, and instructional methods provided for staff	○ No professional development on STEM resources or instructional methods is offered for staff Example: Professional Development is only offered in content silos with no ideas to connect content to other subject areas.	○ One STEM professional development opportunity is offered each semester Example: At the beginning of the year, all teachers have a workshop on how to use design-based challenges to integrate multiple subject areas.	○ At least three STEM professional development opportunities are offered during the year Example: At the beginning of the year, all teachers have a workshop on how to use design-based challenges to integrate multiple subject areas and in the spring, there is a follow up training on how to connect design-based learning to the real-world.	○ Ongoing (four or more) STEM professional developments are offered throughout the year with ongoing instructional support during implementation Example: A campus provides a series of STEM professional development opportunities and provides feedback to teachers during the implementation phase (such as walk throughs by the administrator or by STEM peer evaluations).
2.2 Professional development to build a STEM culture and growth mindset in the organization for all staff	○ No professional development is offered for staff to build a culture of collaboration and growth mindset Example: Professional Development focuses on content development and not on growth-mindset and collaboration of educators.	○ One STEM professional development opportunity is offered each semester to build a culture of collaboration and growth mindset Example: At the beginning of the year, all teachers have a workshop on how to collaborate with other educators to design authentic cross curricular design-based challenges and learn co-teaching techniques.	○ At least three STEM professional development opportunities are offered during the year to build a culture of collaboration and growth mindset Example:Throughout the year, all teachers have workshops on how to collaborate with other educators to design authentic cross curricular design-based challenges and learn co-teaching techniques. Follow-up opportunities are given for teachers to grow professionally and practice collaborative design and co-teaching.	○ Ongoing (four or more) STEM professional developments are offered throughout the year with ongoing instructional support during implementation to build a culture of collaboration and growth mindset Example: Throughout the year, all teachers have workshops on how to collaborate with other educators to design authentic cross curricular design-based challenges and learn co-teaching techniques. Educators are required to implement collaboration when designing lessons and co-teaching should be encouraged between content areas (including between CTE and core content educators at the secondary level).

DOMAIN 3 PROGRAM DESIGN				
Indicator of High-Quality	**Exploratory Model (Starting Point)**	**Introductory Model (Developing)**	**Partial Immersion (Intermediate)**	**Full Immersion (Advanced)**
3.1 Leadership team made up of STEM stakeholders including school board, community, higher education, business and industry to ensure a successful academic, and career pipeline	○ Leadership team includes campus personnel	○ Leadership team includes campus/district personnel and school board	○ Leadership team includes campus/district personnel, school board, and a few STEM community members	○ Leadership team includes campus/district personnel, school board, STEM community members (non-profit, informal STEM educators, STEM business members), and higher education partners (secondary)
3.2 Students' PK-20 learning pathways is aligned to STEM careers and postsecondary STEM degree plan	○ Stand-alone events make connections between course content to STEM careers <u>Example</u>: A school hosts a code.org event and connects content to programming careers.	○ Core content courses make connections between course content to STEM careers <u>Example</u>: As educators teach the required content for a course they connect where knowledge will be used in careers.	○ District administrators have considered local labor market data when developing learning pathways and align P-12 courses to STEM careers <u>Example</u>: Labor market data is used to purposefully develop learning pathways that will prepare students for future career opportunities in STEM.	○ District administrators have used local labor market data when developing learning pathways and aligned P-12 courses to STEM to postsecondary credentials and STEM degree plans and mapped pathways to careers <u>Example</u>: Labor market data is used to purposefully develop learning pathways that align to postsecondary STEM degree plans and credentials that will prepare students for future career opportunities in STEM.
3.3 STEM pathways include academic and technical skills to prepare students for STEM careers (For example, engineering students have both CTE courses and high-level math and science courses) **(Secondary Only)**	○ STEM pathways include only core content courses or only Career Technical Education courses	○ STEM pathways include only core content courses or only Career Technical Education courses	○ STEM pathways include some advanced course work and Career Technical Education courses	○ STEM pathways include a pairing of Career Technical Education courses and advanced courses to prepare students for the technical application and advanced course content needed in STEM careers and entry into postsecondary institutions
3.4 STEM program has a strategic plan including STEM integrated instruction aligned to the TEKS and offered regularly throughout the year	○ STEM experiences are stand-alone events ○ Experiences are not integrated within content ○ Experiences are not aligned to the TEKS	○ STEM experiences are available for a limited number of students ○ STEM is anchored in one content area throughout the school ○ Experiences might be aligned to TEKS	○ STEM experiences are embedded into the lesson cycle regularly ○ Cross curricular connections within each grade level ○ Experiences are embedded in content and aligned to TEKS	○ All content taught through a cross curricular approach blending STEM into all content seamlessly ○ All TEKS are taught through PBL/ Design-based challenges ○ No content TEKS are taught in siloes

DOMAIN 4 CURRICULAR ASPECTS OF THE PROGRAM				
Indicator of High-Quality	**Exploratory Model (Starting Point)**	**Introductory Model (Developing)**	**Partial Immersion (Intermediate)**	**Full Immersion (Advanced)**
4.1 STEM Project/Problem-Based Learning (PBL) and/or Design-Based Challenges are aligned to grade level TEKS	○ Experiences are not aligned to academic content standards (TEKS) Example: A design challenge with the focus on the engineering design process not content	○ Experiences might be aligned to one academic content standard (TEKS) within the class it is being taught Example: A design challenge with one TEKS from a science unit	○ Experiences are aligned to multiple academic content standards (TEKS) within the class it is being taught Example: A design challenge with two or more TEKS from a science unit	○ Experiences are aligned to a bundle of academic content standards (TEKS) from multiple content areas Example: A design challenge with two or more TEKS from a science unit, one TEKS from math, and one TEKS from social studies
4.2 STEM Project/Problem-Based Learning (PBL) or Design-Based Challenges have integrated content across STEM fields	○ Learning provides no opportunity for students to consider relationships between and among STEM fields (science, technology, engineering, mathematics) Example: A science PBL with no connection to math, engineering, or technology in order to solve the problem.	○ Students complete STEM learning one or two times during the year and the learning includes at least two relationships between STEM fields (science, technology, engineering, mathematics) Example: A science PBL that incorporates engineering in order to solve the problem.	○ Students complete STEM learning during one unit per grading period and the learning integrates three or more relationships between STEM fields (science, technology, engineering, mathematics) Example: A science PBL that incorporates math and engineering in order to solve the problem.	○ Students complete STEM learning during all units and the learning integrates the relationship between all STEM fields (science, technology, engineering, mathematics) Example: A science PBL that incorporates math, engineering and technology in order to solve the problem.
4.3 STEM classroom experiences include career exploration and authentic real-world activities/ projects	○ A school-wide event is held with a general connection to an industry ○ Students complete experiences that are not connected to authentic real-world problems Example: A STEM event is held in the school's makerspace to educate families about the fabrication process in manufacturing.	○ Students engage in the work from a STEM field, but no connection is explicitly made to a STEM careers ○ Students complete an experience that is connected to a general authentic real-world problem Example: 5th grade students design a package based on their knowledge of insulators to keep an item cold for two hours.	○ Students engage in the work from a STEM field and learn about careers that use the practices they are learning ○ Students complete an experience that is connected to a specific authentic real-world problem Example: 5th grade students are taught how manufactures design packages and based on their knowledge of insulators students design a package to keep an item cold for two hours.	○ Students engage in a simulated experience where they are working as a STEM professional while completing a PBL or design-based challenge ○ Students complete an experience that is connected to a problem in the community or posed by business/industry partners Example: 5th grade students simulate being a doctor challenged with transporting a vaccine to a village two hours from the airport. They must research how manufactures design packages and based on their knowledge design a package to keep an item cold for two hours.

DOMAIN 4 CURRICULAR ASPECTS OF THE PROGRAM				
Indicator of High-Quality	**Exploratory Model (Starting Point)**	**Introductory Model (Developing)**	**Partial Immersion (Intermediate)**	**Full Immersion (Advanced)**
4.4 Opportunities to develop STEM Fluency Skills: communication, collaboration, creativity, critical thinking, and resilience	○ Students work independently without opportunities to develop and practice STEM Fluency Skills and students do not present their ideas or work to their team or their classmates Example: Students are given a problem and work independently to solve the problem.	○ Students work in teams with opportunities to develop and practice STEM Fluency Skills, but it is unstructured with very little individual accountability and students present their ideas or work to their teammates, but not to their classmates Example: Students are given a problem; students record their individual ideas on how to solve the problem and then share their ideas with the team to develop a combined team solution.	○ Students work in teams with opportunities to develop and practice STEM Fluency Skills, are assigned roles for individual accountability and students present their ideas or work to their teammates, but not to their classmates Example: Students are given a problem; through the lens of their assigned a role they record their individual ideas on how to solve the problem and then share their ideas with the team to develop a combined team solution.	○ Students work in structured collaborative teams with opportunities to develop and practice STEM Fluency Skills, clear expectations for individual accountability, present their ideas or work to their team as well as present their team product to their classmates or business/ industry partner Example: Students are given a problem; through the lens of their assigned a role they record their individual ideas on how to solve the problem, share their ideas with the team to develop a combined team solution and then present their team solution to their classmates or business/industry partner.
4.5(a) Opportunities to develop the technical skills of the engineering design process	○ Experiences include one step of the engineering design process (identify, imagine, plan, create, improve) to solve the problem Example: Students are given a problem to investigate and are asked to brainstorm a solution to the problem.	○ Experiences include two or more steps of the engineering design process (identify, imagine, plan, create, improve) to solve the problem Example: Students are given a problem to investigate, asked to design a plan and create a protype.	○ Experiences include four or more steps in the engineering design process (identify, imagine, plan, create, improve) to solve the problem Example: Students are given a problem to investigate, are asked to design a plan, create a protype and given time to redesign and improve their product.	○ Experiences include the students identifying the problem to solve using the entire engineering design process (identify, imagine, plan, create, improve) to solve the problem Example: Students research a topic they are learning about and identify a related problem they will use the engineering design process to solve.

DOMAIN 4 CURRICULAR ASPECTS OF THE PROGRAM				
Indicator of High-Quality	**Exploratory Model (Starting Point)**	**Introductory Model (Developing)**	**Partial Immersion (Intermediate)**	**Full Immersion (Advanced)**
4.5(b) Opportunities to develop the technical skills of computational thinking process	○ Experiences include one step of the computational thinking process (decomposition, pattern recognition, abstraction, and algorithms) to solve the problem Example: Students use computational thinking to plant a garden. They decompose the idea first by deciding what type of plants will be in the garden.	○ Experiences include two or more of the computational thinking processes (decomposition, pattern recognition, abstraction, and algorithms) to solve the problem Example: Students use computational thinking to plant a garden. They decompose the idea by deciding what type of plants will be in the garden and look for patterns in sunlight and watering requirements.	○ Experiences include four or more of the computational thinking processes (decomposition, pattern recognition, abstraction, and algorithms) to solve the problem Example: Students use computational thinking to plant a garden. They decompose the idea by deciding what type of plants will be in the garden and look for patterns in sunlight and watering requirements. They will abstract any unnecessary information then design a plan that will arrange the plants according to their needs.	○ Experiences include the entire computational thinking process including decomposition, pattern recognition, abstraction, and algorithms to solve the problem Example: Students use computational thinking to plant a garden. They first decide what plants they will plant and look for patterns in sunlight and watering requirements. They will then design a plan that will arrange the plants according to their needs and a schedule for watering different areas of the garden.
4.6 Experiences are vertically aligned throughout the district/ campus and to postsecondary (PK-20)	○ STEM experiences are stand-alone events and are not intended to connect Example: Students can attend an evening coding event during the fall semester and have an engineering fair during the spring semester.	○ STEM experiences might be aligned to the TEKS, but the experiences do progress each year to build STEM literacy Example: 3rd-5th grade students experience design challenges that are aligned, and experiences do not repeat while on the elementary campus.	○ STEM experiences are aligned to the TEKS and experiences progress each year to build STEM literacy Example: An elementary has a PK-5 STEM program that is aligned to the TEKS and design challenges increase in complexity each year.	○ STEM experiences are aligned at multiple campuses to establish a STEM pathway for students that lead to postsecondary success Example: An ISD has a STEM pathway that is vertically aligned that leads to STEM career readiness.
4.7 Experiences are horizontally aligned to TEKS throughout the grade level (cross curricular)	○ A stand-alone design challenge or event that does not connect to TEKS Example: Students experience the engineering design challenge by building a noodle tower, but there is no connection made to content or TEKS.	○ STEM Learning includes TEKS from at least 1 other content area (science, math, social studies, ELAR) and teachers should be collaborating between grade levels Example: Math lesson that includes math and science TEKS to complete the engineering challenge (math and science).	○ Learning includes TEKS from at least 2 other content areas (science, math, social studies, and ELAR) and teachers should be collaborating between grade levels Example: Math lesson that includes technology, science and engineering to complete the challenge and the teacher provides examples of where this problem has been seen in US history (math, science, technology, social studies).	○ Experiences require students to connect at least 3 content areas (science, math, social studies, and ELAR) and teachers should be collaborating between grade levels and potentially co-teaching lessons Example: Math lesson is co-taught with the English teacher and requires students to use technology to solve a problem using science and math content knowledge. Students will research connections in US history to their project and creatively present their findings to the class. (math, science, technology, social studies, English, writing, arts)

DOMAIN 4 CURRICULAR ASPECTS OF THE PROGRAM				
Indicator of High-Quality	**Exploratory Model (Starting Point)**	**Introductory Model (Developing)**	**Partial Immersion (Intermediate)**	**Full Immersion (Advanced)**
4.8 Student mastery is demonstrated through a variety of assessment methods including formative, summative, and performance-based measures	○ Assessments are limited to measuring retention through traditional assessment Examples: Student mastery is determined by multiple choice quizzes or a worksheet.	○ Assessment methods include more than one type per unit to show mastery of content including performance-based assessments Examples: Performance-based assessments (such as projects or simulations) are used with a mix of formative assessments (such as exit slips or quick response) and/or summative assessments (unit test or end of course exam) to determine mastery of content.	○ Assessment methods include all types of assessment per unit to show mastery of content including performance-based assessments Examples: Each unit consists of all types of assessment: formative assessments (such as exit slips or quick response), performance assessments (such as projects or simulations) and summative assessments (unit test or end of course exam) are used to determine mastery of content.	○ Assessment method includes all types of assessment and structured performance-based assessments tied to authentic real-world situations that allow students to demonstrate mastery of content and STEM Fluency Skills graded with a rubric Example: Each unit consists of all forms of assessments including not only content but also STEM fluency skills and an understood relationship to real-world context.

DOMAIN 5 STAKEHOLDER ENGAGEMENT				
Indicator of High-Quality	**Exploratory Model (Starting Point)**	**Introductory Model (Developing)**	**Partial Immersion (Intermediate)**	**Full Immersion (Advanced)**
5.1 Connections to effective in and out-of-school STEM programs	○ No STEM experiences happen outside of the school Example: Students only learn content at school with no interaction with out of school STEM educators.	○ Some STEM experiences include in and out-of-school experiences and are mostly coordinated by either the formal or informal educators Example: Students have access to STEM after school programming through a nonprofit organization.	○ A mix of STEM experiences are provided throughout the year and include both in and out-of-school events and are mostly coordinated by either the formal or informal educators Example: A campus has a calendar of STEM events that happen both during the day, after school, and during the summer.	○ Local STEM ecosystem partners meet with staff to plan a calendar of STEM events that will include a variety of in and out-of-school STEM experiences for students at all grade levels Example: Teachers make a strategic plan on how to involve out of school STEM partners to support their classroom content.
5.2 Stakeholder partnerships that expand classroom learning to include capstone experiences (including virtual) such as mentorships, internships, practicums **(High School Only)**	Students do not interact with STEM business/industry or non-profits to expand learning experiences in STEM and no formal agreements are in place Example: Students do not have an opportunity to participate with STEM business and industry through a work placement.	○ A few students have 1-2 interactions each year with STEM business/industry or non-profits to expand learning experiences in STEM and most students have formal partnership agreements in place Example: Staff have identified students' career interests and have arranged for short-term interactions.	○ Many students have 1-2 interactions each year with STEM business/industry or non-profits to expand learning experiences in STEM and most students have formal partnership agreements in place Example: Staff have identified students' career interests and have arranged for short-term interactions.	○ Most students have 3-4 interactions each year with STEM business/industry or non-profits to expand learning experiences in STEM and most students have formal partnership agreements in place Example: Staff have identified students' career interests and have arranged for long-term interactions.

DOMAIN 5 STAKEHOLDER ENGAGEMENT				
Indicator of High-Quality	**Exploratory Model (Starting Point)**	**Introductory Model (Developing)**	**Partial Immersion (Intermediate)**	**Full Immersion (Advanced)**
5.3 STEM Work-Based Learning experiences to increase interest and abilities in careers requiring STEM fluency skills	○ There are no PK-12 career connections that expand learning beyond the classroom boundaries that promote students' interest or abilities in STEM careers Example: Students learn content with no connection to careers.	○ There is at least one career connection that expands learning beyond the classroom boundaries per grade level (PK-12) promoting students' interest or abilities in STEM careers Example: Students participate in a career activity (such as looking at pictures of career professionals using the content) to give relevance to what they are learning in the classroom.	○ There are two or more career connections that expand learning beyond the classroom boundaries per grade level (PK-12) promoting students' interest or abilities in STEM careers Examples: Students sometimes learn about who does the work they are studying (such as a guest speaker) and sees the work in action (such as on a field trip) to give relevance to what they are learning in the classroom.	○ Career connections are a regular part of lesson planning that expands learning beyond the classroom boundaries per grade level (PK-12) promoting students' interest or abilities in STEM careers Examples: Students always learn about who does the work they are studying with a career activity and sees the work in action on a field trip or job shadow to give relevance to what they are learning in the classroom.
5.4 Stakeholder partnerships for teachers that connect their academic content to STEM careers through externships and research experiences	○ Staff does not interact with STEM stakeholder to expand professional learning experiences in STEM Example: Teachers only participate in traditional STEM professional development such as PBL.	○ Some staff members interact with STEM stakeholder to expand professional learning experiences in STEM through externships or research opportunities Example: High school science teachers can work with a college or university to research a topic in the area they teach	○ A strategic plan is in place to provide access for staff members to interact with a STEM stakeholder to expand professional learning experiences in STEM through externships or research opportunities Example: A district/campus plan is in place to rotate teacher experiences at all levels PK-12 to increase understanding of content in general.	○ A strategic plan is in place to provide access for staff members to interact with STEM stakeholders to expand professional learning in areas they would like to grow their content understanding Example: Teachers use their data to identify an area of content weakness and administrators work to place the teacher in an externship or research placement to grow their knowledge in the target area.
5.5 STEM family engagement events/experiences hosted by the district/campus	○ There is no strategic family STEM engagement plan in place at the district or campus level Example: Families do not have an opportunity to participate in STEM activities with their child.	○ There is a strategic family STEM engagement plan in place at the district or campus level, but events have not been scheduled Example: The district/campus is in the planning phase of how to create STEM in and out of school experiences that give family members an opportunity to participate in STEM learning with their child.	○ There is a strategic family STEM engagement plan in place with regular events to engage families in STEM activities to promote STEM awareness and career opportunities for students Example: A calendar of STEM events are provided to families and they are encouraged to attend and participate with their child.	○ There is a strategic family STEM engagement plan in place with regular events to engage families in STEM activities to promote STEM awareness and career opportunities for students and an engagement survey is used to assess events and guide future STEM events Example: At the close of a STEM event a survey is distributed to assess what went well and areas to improve to inform the planning of the next STEM event.

DOMAIN 6 COMMUNICATION/MARKETING STRATEGIES				
Indicator of High-Quality	**Exploratory Model (Starting Point)**	**Introductory Model (Developing)**	**Partial Immersion (Intermediate)**	**Full Immersion (Advanced)**
6.1 Marketing mechanisms to communicate the STEM plan across district, community and workforce	○ There is no STEM communication about programming with parents, community and business/ industry Example: STEM activities are done during the school day and those activities are not shared with parents, community, or business/ industry.	○ There is communication once a semester about STEM programming with parents, community and business/ industry Example: A flyer is put together at the beginning of each semester communicating both in and out of school STEM activities.	○ There is formal STEM communication once a month with parents, community and business/industry Example: A newsletter is put together at the beginning of each month communicating both in and out of school STEM activities.	○ There is frequent communication through a mix of formal and informal methods to communicate STEM programming with parents, community and business/ industry Example: Informal weekly posts highlight STEM activities through social media and a formal STEM newsletter is distributed monthly.

Use this score card as you read the high-quality indicators and examples for each of the four STEM models on the identification guide. Place a mark for each indicator according to your campus's current STEM program. Your marks might be in different models depending on the indicator. When all areas are marked, look to see which model you have the most marks in and complete the reflection page.

HIGH-QUALITY STEM MODEL IDENTIFICATION SCORE				
Domain 1 Equity of Programming	**Exploratory**	**Introductory**	**Partial**	**Full**
1.1 STEM Instruction is offered for all students on campus				
Domain 2 School Climate and Culture	**Exploratory**	**Introductory**	**Partial**	**Full**
2.1 Professional development on integrated STEM content, resources and instructional methods provided for staff				
2.2 Professional development to build a STEM culture growth mindset in the organization provided for all staff				
Domain 3 Program Design	**Exploratory**	**Introductory**	**Partial**	**Full**
3.1 Leadership team made up of STEM stakeholders including school board, community, higher education, business and industry to ensure a successful academic, and career pipeline				
3.2 Students' PK-20 learning pathways is aligned to STEM careers and postsecondary STEM degree plan				
3.3 STEM pathways include academic and technical skills to prepare students for STEM careers (Secondary Only)				
3.4 STEM program has a strategic plan including selected model and programming components outlined in the planning guide				
Domain 4 Curricular Aspects of the STEM Program	**Exploratory**	**Introductory**	**Partial**	**Full**
4.1 STEM Project/Problem-Based Learning (PBL) and/or Design-Based Challenges are aligned to grade level TEKS				
4.2 STEM Project/Problem-Based Learning (PBL) or Design-Based Challenges have integrated content across STEM fields				
4.3 STEM classroom experiences include career exploration and authentic real-world activities/projects				
4.4 Opportunities to develop STEM Fluency Skills: communication, collaboration, creativity, critical thinking, resilience, promptness, time management, adaptability, innovative				
4.5(a) Opportunities to develop the technical skills of the engineering design process				
4.5(b) Opportunities to develop the technical skills of computational thinking process				

HIGH-QUALITY STEM MODEL IDENTIFICATION SCORE				
4.6 Experiences are vertically aligned throughout the district/campus and to postsecondary (PK-20)				
4.7 Experiences are horizontally aligned to TEKS throughout the grade level (cross curricular)				
4.8 Student mastery is demonstrated through a variety of assessment methods including formative, summative, and performance-based measures				
Domain 5 Stakeholder Engagement	**Exploratory**	**Introductory**	**Partial**	**Full**
5.1 Connections to effective in and out-of-school STEM programs				
5.2 Stakeholder partnerships that expand classroom learning to include capstone experiences (including virtual) such as mentorships, internships, practicums (High School Only)				
5.3 STEM Work-Based Learning experiences to increase interest and abilities in careers requiring STEM fluency skills				
5.4 Stakeholder partnerships for teachers that connect their academic content to STEM careers through externships and research experiences				
5.5 STEM family engagement events/experiences hosted by the district/campus				
Domain 6 Communication/Marketing Strategies	**Exploratory**	**Introductory**	**Partial**	**Full**
6.1 Marketing mechanisms to communicate the STEM plan across district, community and workforce				

CAMPUS STEM MODEL SCORE REFLECTION

Our goal for our campus is to implement ________________________model.

My campus had the most marks in _____________________________model.

My campus fell below our target model in some areas. Our opportunities for growth are in the following areas:

My campus scored above our target model in some areas. Our identified strengths are in the following areas:

* After completing this tool, the PK-20 STEM Education Program Planning document will help leadership break down each indicator, by providing guiding questions to help facilitate discussions with the district/campus design team and assists with setting goals for the program. The planning document could be filled out by an individual in the district or as a campus group including your STEM stakeholders. The Program Planning Guide can be used to develop a new program or growing an existing program.