STEM Walk-Through Observation Tool

Audience: K-12 Administrators and Instructional Coaches

Tool Overview: This qualitative tool provides guidance for quick feedback to an instructor during an observation when STEM activities are being implemented in the classroom. "Look-fors" are aligned with the Instructional Planning Guide located on the TEA STEM Webpage. This tool is an informal formative assessment that can be used for individualized coaching and feedback, as well as STEM program documentation and assessment of program goals/outcomes as it relates to STEM teaching and learning.

STEM Curricular Implementation "Look Fors":

- Student-centered, active learning
- Collaborative learning
- 5E model of instruction (See definitions below)
- Engineering Design Process
- TEKS alignment of disciplinary content within STEM activities
- Integration of disciplinary content and skills
- STEM fluency skill-building
- Teacher and student use of STEM content and vocabulary
- Authentic connections to the real-world
- Differentiated instruction/learning opportunities

This toolkit was created for Lone Star STEM, a partnership between TEA, JFF, and UT Austin, funded by USDOE.

STEM Walk-Through Observation Form

Teacher	Subject/Course	
# of Students	Date	Time

How are the students demonstrating <u>active learning</u>?
Specific behaviors might include but are not limited to speaking, listening, sketching, comparing, observing, recording, manipulating, predicting, discussing, planning, testing, organizing, building, etc.

☐ Verbal Discussion ☐ Writing ☐ Hands-On Activity ☐ Designing/Creating

☐ Presentation ☐ Other

Specific Behaviors/Comments:

How are students <u>collaborating</u> with each other?

☐ N/A Students are working Individually ☐ Students worked with a partner ☐ Students worked in groups of 3 – 4 students ☐ Students worked in groups of 5+ students

What activity(s) are students engaged in while collaborating?

Comments:

Which phase(s) of the <u>5E Model of Instruction</u> are teacher/students engaged in?

☐ **Engage**: is designed to interest students in the concept and to provide opportunities for making connections to past and present learning.

☐ **Explore**: provides the opportunity for students to become directly involved with the key concepts of the lesson through guided exploration that requires them to probe, inquire, and discover. The exploration stage provides students with a set of common experiences and social interactions as they begin making sense of the new concept.

☐ **Explain**: the instructor, acting in a facilitation role, uses the Explain phase to offer further explanations and provide additional meaning or information, such as correct terminology. Students communicate conceptual understandings by making evidence-based claims as they share what they have learned using accurate and appropriate terminology.

☐ **Elaborate**: allows students to apply, extend, and expand their understanding of the processes and concepts of the lesson to real-world situations.

☐ **Evaluate**: both the teacher and the student check for understanding of the learning goal of the lesson.

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If applicable, what phase(s) of the Engineering Design Process are teacher/students engaged in?

☐ Identify	☐ Imagine	☐ Plan	☐ Create	☐ Improve
• Identifying the problem and constraints	• Materials exploration • Brainstorming	• Create/select a plan • Gather materials	• Build the product • Test the product or execute the process	• Anaylze test results • Modify process or design

Comments:

Is the learning activity(s) aligned with TEKS?

☐ Yes ☐ Somewhat/Unclear ☐ No

Comments:

In what ways is the activity(s) integrating content/skills within or between disciplines?

☐ Science
☐ Technology
☐ Engineering
☐ Mathematics
☐ English/Language Arts
☐ Social Studies/History
☐ Arts
☐ Other

Comments:

How are students engaging in STEM fluency skill-building?

Check all that apply:

☐ Verbal communication	☐ Conveying information in writing	☐ Creative /innovative thinking	☐ Promptness
☐ Active listening	☐ Collaboration	☐ Adaptability	☐ Time/resource management
☐ Comprehension of written material	☐ Critical thinking	☐ Resilience	

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What appropriate STEM content and practices vocabulary are the teacher and/or students using?
Examples might include but are not limited to: engage, explore, explain, elaborate, evaluate, inquiry, engineering design process, criteria, constraints, plan, prototype/model, measurement, test, results, analyze, improve/revise, optimize, report, reflect, communicate, collaborate/teaming, etc.

Are the teacher and students connecting STEM concepts to the real-world?

Yes No

Comments:

How is the teacher differentiating learning activities to meet the needs of all students?

The teacher provides a variety of opportunities for all students to engage with the learning material. The teacher provides options for student voice and choice as well as appropriate accommodations and modifications.

☐ Student voice and choice ☐ Accommodations ☐ Modifications ☐ Not observed

Comments:

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