

STEAM Design Elements Reflection Tool

This tool was created to help teachers in assessing, planning and designing STEAM projects.

Name(s): _____

Project: _____

Grade Level: _____ School: _____

Self-Assessment Scale:

5: We feel like we could lead a session for other teachers on how to implement this design element into their project.

4: The project fully demonstrates this design element and we have a well-developed plan for how to scaffold and facilitate its implementation.

3: The project demonstrates this design element.

2: The project lightly addresses this design element. We need to do some revision to our plan for how to scaffold and facilitate its implementation.

1: We need to rethink the project design in order to embed this design element.

Design Element	Components	Reflection and Notes
Anchor Phenomenon	<ul style="list-style-type: none">• Engages students and is relevant to their lives.• Sparks curiosity and encourages students to ask questions and investigate further.• Requires significant or in depth understanding of several science ideas, is not easily explained.• Students work to explain the anchor phenomenon throughout the project.	
NGSS 3-Dimensional Learning	<ul style="list-style-type: none">• Students demonstrate their learning using the three dimensions. Students show what they know (DCI), what they can do (SEP), and how they think and link ideas together (CCC).• Students develop sense-making through discourse and notebooking.	
Inquiry	<ul style="list-style-type: none">• Students' questions about the anchor phenomenon drive the science learning throughout the project.• Essential question encourages multi-disciplinary thinking, promotes creative problem solving, and allows students to come to different conclusions.• Investigative phenomena and questions to investigate help students build their understanding of the anchor phenomenon.• Students reflect on their learning throughout the project.	

Design Element	Components	Reflection and Notes
Content Integration	<ul style="list-style-type: none"> Integrates content areas in a meaningful way. Students need understanding across multiple content areas to build their understanding of the anchor phenomenon and essential question. 	
Student Discourse	<ul style="list-style-type: none"> Norms and structures for discourse provide an equitable learning environment where all voices are heard. Students have multiple opportunities to express, clarify, justify, interpret, and represent their ideas. Supports a culture of talk where students build on their prior knowledge, listen to different perspectives, and make meaning of scientific phenomena. (i.e. turn and talk, think-pair-share, whole group/small group discussions, etc.) 	
Student Agency	<ul style="list-style-type: none"> Students are encouraged to share their prior knowledge, cultural backgrounds, interests and strengths. Students develop identity and academic mindsets through integration of the Habits of Mind. Students self-assess their growth and development of skills. 	
Community Connections	<ul style="list-style-type: none"> Connects students to the world through relevant field work, community service, and outside experts. Allows students to see themselves in professional roles and careers. 	
Final Product	<ul style="list-style-type: none"> Students' work has purpose and serves others. Students create their final product for an authentic audience beyond the teacher. Students generate multiple iterations using critique, models, and instruction to create beautiful and meaningful work. Students showcase their final product in an exhibition of learning. 	
Assessment	<ul style="list-style-type: none"> Ongoing and dialogical (peer and self critique, expert consultation). Creates opportunities for all students to find success and challenges students to continue to grow. Comes in multiple forms through reflections, performance assessments, self-assessments, formative and summative assessments. 	
Exhibition	<ul style="list-style-type: none"> Celebrates students' learning and their project process. Students share their work with an authentic audience. Provides authentic dialogical assessment. 	