S.T.E.A.M. Lab- Engineering Design Process-

Rubric:

Plan:
Students will quietly listen to presenters, and follow directions to complete the work and make the best possible product

Create:
Students will exhibit careful attention during construction process, and successfully follow the models/examples/directions

Test:
Students will troubleshoot, test, and make refinements

Ask:
Students will participate during the Debrief.
What went well?
What could you do better next time?

***Collaborate: Exhibiting excellent TEAMWORK and respect is ALWAYS worth more points!**
Students will follow the rules during all presentations, show respect for all property, materials, and tools. Furthermore, students will go **all-out** to help others to work safely and equitably and persevere during all segments of the session

Note: *A score of Zero points may be given in any section of this rubric due to misuse of tools, or materials, or no attempt at construction. If a student had to have his or her materials taken away due to misuse or disregard for the S.T.E.A.M. Lab rules, he or she may earn zero points for the entire session.
*Theft, vandalism, or deliberate misuse of any S.T.E.A.M. Lab property will result in a complete ban from using any hands-on materials.

S.T.E.A.M. lab E.D.P. Rubric	B.S.T.	K-3rd Grades lesson Rubric
Needs Improvement	Meets Grade Level Standards	Advanced or Above and Beyond
		
	<u>20 pts.</u> Student listened quietly to directions and *<u>Planned</u>* with their team to make the best possible product	
	<u>20 pts.</u> Student successfully followed the models/examples/directions to *<u>Create</u>* their projects	
	<u>20 pts.</u> Student engaged in the proper steps to *<u>Test</u>*, troubleshoot, make refinements, and persevere	
	<u>20 pts.</u> Student *<u>Asked</u>* their team what they could do to make their project better	
	<u>20 pts.</u> Student was successful in working with their team and treating S.T.E.A.M. Lab property with care and respect.	

B.S.T. -S.T.E.A.M. Lab- 4th – 9th Grades- Engineering Design Process Rubric:

Plan			
2 The student had great difficulty doing their best to listen to and follow directions to complete the project	**9** The student had some difficulty doing their best to listen to and follow directions to complete the project	**18 Student exhibits an honest effort to listen to and follow directions to complete the work and make the best possible product**	**28** Student exhibits an intense effort to listen to and follow every direction to complete the work and make the best possible product and added an innovative addition to the plan
Create			
2 Construction appears careless or haphazard, numerous details need refinement for a strong or attractive product. The student refused to make changes after given suggestions	**9** Construction accurately followed the plans, but 3- 4 details could have been refined for a more attractive product --and/or the student failed to make necessary changes after given suggestions	**18 Construction was careful and accurate for the most part. The structure is neat, attractive and follows the model/examples. 1-2 details may or may not require refinement for a more attractive or effective product**	**28** Great care taken in the construction process so that the structure is neat, attractive and follows the model/examples precisely, and the student added an unexpected innovative or artistic addition
Test			
2 Little or no evidence of troubleshooting, testing, or refinement	**9** Some evidence of troubleshooting, testing, and refinements	**18 Clear evidence of troubleshooting, testing, and refinements**	**28** Clear evidence of troubleshooting, testing, and refinements based on researched or proven data, and/or was explained using scientific principles
Ask			
2 Student refused to participate in any kind of meaningful discussion during the Debrief	**9** Student shows no interest in and/or does not try to contribute ideas for possible modifications during the Debrief	**18 Student offers ideas or agrees with partners' ideas for possible modifications during the Debrief**	**28** Student offers innovative scientific principles and/or ideas for possible modifications during the Debrief
Collaborate			
2 Student was disruptive and/or did NOT follow rules and/or directions, or respect boundaries, or work well with others, or their partner/s did most of or all the work	**9** Student had significant trouble following rules and/or directions, and/or working with others, and/or most of the responsibilities were placed on others	**28 Student was respectful and worked well while following the rules and directions during all lesson segments. Student was successful in working with others, and equitably shared responsibilities as well as materials**	**38** Student was respectful and worked remarkably well during all lesson segments, while working with others, and equitably shared responsibilities. In addition, helped other students to find innovative ways to participate well beyond what was mentioned in the lesson

S.T.E.A.M. Lab E.D.P.	B.S.T.	4th – 6th Grade Simplified Lesson Rubric
Needs Improvement	Meets Grade Level Standards	Advanced or Above and Beyond
Areas of Concern:	Criteria/ Standards for this Session	Areas Demonstrating Excellence:
	20 pts. Student exhibits an honest effort to listen carefully and follow the rules as well as the directions.	
	20 pts. Student completed the work and made the best possible product.	
	20 pts. Student provided clear evidence of troubleshooting, testing, perseverance, and making refinements as necessary.	
	20 pts. Student helped his or her team to follow the rules and directions during all lesson segments.	
	20 pts. Student was successful in treating S.T.E.A.M. Lab property with care and respect.	

S.T.E.A.M. lab Design Challenge Rubric	B.S.T.	K-3rd Grades lesson Rubric
Needs Improvement	Meets Grade Level Standards	Advanced or Above and Beyond
		
	20 pts. **Student produces accurate pictorial and orthographic sketches of design concepts**	
	20 pts. **Student offers a variety of possible solutions**	
	20 pts. **Student makes an accurate prototype, model, or project**	
	20 pts. **Student made changes to make the project better**	
	20 pts. **Student was successful in working with their team to create their project**	

S.T.E.A.M. Lab – 4th – 9th Grade- Design Challenge Rubric: 15 points = 100%

1) Researching & Generating Ideas			
1 Refuses to contribute ideas or documented research. Produces incomplete sketches. Does not present a concept.	**2** Contributes one plausible idea but offers nothing further based on documented research. Produces marginally accurate pictorial and orthographic sketches of design concepts.	**3 Contributes multiple plausible ideas based on documented research. Produces accurate pictorial and orthographic sketches of design concepts.**	**4** Contributes multiple plausible ideas based on documented research. Produces accurate pictorial and orthographic sketches of design concepts. Helps team member/s to complete research and gently offers ideas to team members who are "stuck".
2) Exploring Possibilities			
1 Refuses to analyze the pluses and minuses of a variety of possible solutions.	**2** Offers only one idea to analyze the pluses and minuses of a possible solution.	**3 Satisfactorily analyzes the pluses and minuses of a variety of possible solutions.**	**4** Thoroughly analyzes the pluses and minuses of a variety of possible solutions. Waits patiently to share information when it is called for.
3) Making a Prototype			
1 Prototype does not meet more than 2 of the task criteria.	**2** Prototype meets the task criteria to a limited extent.	**3 Prototype meets the task criteria.**	**4** Prototype meets the task criteria in insightful ways.
4) Refining the Design			
1 Refuses to make any refinements.	**2** Refinement based on testing and evaluation is not evident.	**3 Refinements made based on testing and evaluation results.**	**4** Significant improvement in the overall design is made based on prototype testing and evaluation.
5) Performance			
1 Finished solution (product) steps were not completed within the stated time constraints and was not ready for performance.	**2** Finished solution (product) fails to meet specifications.	**3 Finished solution (product) meets specifications.**	**4** Finished solution (product) exceeds specifications.

USE THE F.O.R.C.E. TO FOLLOW THE S.T.E.A.M. LAB RULES AND PROCEDURES:

FOLLOW THE LAB RULES:

1-Be **VERY GENTLE** with and keep every single tiny part in every kit intact and put every part away **exactly** where it belongs.
2-In this lab, there is **zero tolerance** for stealing, throwing, ruining, **misplacing**, leaving parts out-- or on the floor, or wasting materials!
3-Always ask before throwing away anything that was used in a lesson. Another class might benefit from scraps leftover from a session.

ONLY SPEAK WHEN IT IS CLEARLY YOUR TURN:

Whenever anyone other than you is talking to a group that means it is currently **NOT your turn** for attention. Your job is to do everything in your power **NOT** to cause **any** distractions away from a presentation.
Please sit still and do **NOT** make excess noises or movements of any kind during directions, videos, lessons, or presentations. Wait to raise your hand for questions until **AFTER** a presenter invites you to ask questions. Never keep your hand up during a presentation.

REMEMBER TO KEEP YOUR HANDS TO YOURSELF AND SHARE SPACE AND MATERIALS EQUITABLY:

No one will EVER be authorized to touch anyone or anything in this lab, or during STEAM lessons without **first** getting permission or an invitation. If you abuse your chance to use any STEAM Lab materials, such as helping yourself to materials without instructions or an invitation, recording rude sounds or messages, or abusing personal space guidelines, you will not have another chance to use equipment during the remainder of this school year.

COME INTO THIS LAB QUIETLY, ON TIME, AND SIT IN A CHAIR WHILE KEEPING ALL FOUR CHAIR LEGS ON THE FLOOR AT ALL TIMES WHILE YOU ARE IN A CHAIR:

1- The sooner you sit down and stop talking the sooner a presenter will have everyone's attention. Projects will NOT begin until all eyes are on the speaker and everyone is still and quiet. Remind others to stop talking, listen, and sit still.
2-You will listen carefully to the entire plan, and all directions **BEFORE** you will be invited to participate.

EVERYONE PARTICIPATES IN EACH LESSON:

1- Everyone has a job here. Your job is to follow the rules, come into this class quietly, sit down, **LISTEN** very carefully for what your job may be, do your best to do well in your task, clean up properly, and push in your chair correctly **before** you are excused.

2- Your job is to follow directions **QUICKLY**, make **SMART** choices, and complete every step required to finish your **work**!

3- No excuses- Just do it- Period.

CONSEQUENCES

STRIKE 1:

A score of ZERO may be given in any section of a rubric or a lesson grade for the day due to misuse of any materials or tools, or no attempt at construction, or refusal to participate.

STRIKE 2:

If a student must have their materials or tools taken away due to misuse of materials or disregard for the S.T.E.A.M. Lab rules, they will earn ZERO points for the session.

STRIKE 3:

If a student is sent to the office due to stealing, misuse of tools or materials-- or disregard for the S.T.E.A.M. Lab rules, they will be suspended from participating in lessons involving projects in the S.T.E.A.M. Lab and receive a ZERO for that unit of study.

S.T.E.A.M. lab S.T.E.A.M. lab Rules and Procedures	B.S.T.	K-3 lesson Rubric
Needs Improvement	Meets Grade Level Standards	Advanced or Above and Beyond
		
	<u>20 pts.</u> Student listens quietly to the directions.	
	<u>20 pts.</u> Student completed the work.	
	<u>20 pts.</u> Student never gave up trying to follow the rules and directions.	
	<u>20 pts.</u> Student helped their team to follow the rules and directions.	
	<u>20 pts.</u> Student was successful in treating S.T.E.A.M. Lab property with care and respect.	

S.T.E.A.M. lab Rules and Procedures	B.S.T.	4th- 9th Grades lesson Rubric
Needs Improvement	Meets Grade Level Standards	Advanced or Above and Beyond
		
	<u>20 pts.</u> Student exhibits an honest effort to listen carefully and follow the rules as well as the directions.	
	<u>20 pts.</u> Student completed the work and made the best possible product.	
	<u>20 pts.</u> Student provided clear evidence of troubleshooting, testing, perseverance, and making refinements as necessary.	
	<u>20 pts.</u> Student helped his or her team to follow the rules and directions during all lesson segments.	
	<u>20 pts.</u> Student was successful in treating S.T.E.A.M. Lab property with care and respect.	