STEAM Strategic Plan

The Ashburnham Westminster Regional School District will engage and support *all* teachers and students in **STEAM** education. Students will apply rigorous concepts from **S**cience, **T**echnology, **E**ngineering, the **A**rts and **M**athematics to real-world problems that make connections between school, community, and work in an ever-changing world.

Theory of Action: If teachers provide STEAM experiences then students will acquire improved communication, inquiry, collaboration, creativity, problem solving and critical thinking skills to be successful in the real world.

Pillar #1: Teaching and Learning

Priority Initiatives	Person(s) Responsible	Timeline	Resources	Evidence of Effectiveness / Benchmarks
Short Term (1-2 Years)				
Teachers and students articulate the district definition of STEAM: "STEAM is an integrated approach to education which emphasizes real-world, problem-based learning that uses science, technology, engineering, the arts and mathematics as access points for guiding student inquiry, communication, collaboration, creativity, and critical thinking."	Administrators	October 2018	Time, Faculty Meetings	Present definition at each school at staff meeting. Display definition in classroom PD: do an engineering design challenge and unpack what we mean by STEAM.

				Problem of the Month / Activity / Challenge at each faculty meeting.
Grade levels / Teams create curriculum maps that incorporate MA science standards using district provided tools	Administrators, Teachers	June 2019	PD on science standards and curriculum mapping tool, Time	Curriculum maps populated and aligned
Teachers and students explain the relevance of STEAM concepts and their importance for student success.	Teachers	October 2019	Time, STEAM Experiences	Pretests
All teachers identify the components of effective STEAM lessons and units that align with the district's definition of STEAM.	Administrators, Teachers, Digital Learning Coaches	November 2019	PD on effective STEAM lessons, rubric samples, Time	Share exemplars with teachers in the same building (eventually within district). Digital Learning Coaches develop exemplar lesson videos Develop/adapt a rubric to define exemplar.

All elementary/middle school teachers incorporate the components of STEAM unit into an existing unit.	Teachers	June 2019	Time	Lesson/unit developed
All teachers at elementary/middle schools pilot at least one STEAM unit.	Teachers	January 2020	Time, supplies	Lesson/unit piloted
Self-selected teachers at the high school develop or adapt at least one STEAM unit.	Teachers	June 2019	Time	Lesson/unit developed
Self-selected teachers at the high school pilot at least one STEAM unit.	Teachers	January 2020	Time, supplies	Lesson/unit piloted
Mid Term (3-4 Years)				
Develop a repository for teachers' units.	Curriculum Director, Technology Director	September 2021	Time	Repository Available

All elementary/middle teachers implement at least one interdisciplinary STEAM unit per marking period	Administrators, Teachers	June 2022	Accommodating School Schedules, Time, PD and Team Meeting Time	Interdisciplinary units developed
All high school teachers implement at least one STEAM unit per semester	Teachers	January 2021	Time, supplies	Lesson/unit piloted
Long Term (5+ Years)				
Students independently apply science, technology, engineering, arts and mathematics skills—including inquiry, collaboration, critical thinking, communication, and creativity— to solve real-world problems.	Community Partners, Teachers, Administrators, Guidance Counselors	June 2023	Time, Community support, Data	Capstone project, Community service projects/partnerships, College enrollment data, Participation in STEAM related electives, Participation in STEAM related extracurricular activities
Students experience at least one rigorous, transdisciplinary STEAM unit per marking period at the elementary and middle schools.	Administrators, Teachers	June 2023	Accommodating School Schedules, Time, PD and Team Meeting Time	Implementation of transdisciplinary units

All high school teachers implement at least one interdisciplinary STEAM unit per marking period	Administrators, Teachers	June 2023	Accommodating School Schedules, Time, PD and Team Meeting Time	Interdisciplinary units developed
Students experience at least one rigorous, transdisciplinary STEAM unit per marking period at the high school.	Administrators, Teachers	June 2024	Accommodating School Schedules, Time, PD and Team Meeting Time	Implementation of transdisciplinary units

Theory of Action: If community partnerships increase then students gain awareness of STEAM careers and the real world applications of their learning.

Pillar #2: Community Partnerships

Priority Initiatives	Person(s) Responsible	Timeline	Resources	Evidence of Effectiveness
Short Term (Years 1-2)				
Identify and recruit parents and community members to join STEAM Advisory Team.	Administrators	January 2019	Community volunteers, Time	Table at curriculum night, parent-teacher conferences, concerts List of people that are interested.

Parents and community members can articulate the district's definition of STEAM and explain its relevance and importance for student success. "STEAM is an integrated approach to education which emphasizes real-world, problem-based learning that uses science, technology, engineering, the arts and mathematics as access points for guiding student inquiry, communication, collaboration, creativity, and critical thinking."	Administrators	January 2019	Time	STEAM night at each school STEAM definition in student / parent handbooks STEAM included in curriculum nights STEAM activities included in school newsletters
Formulate a strategy to develop partnerships with businesses, schools, colleges, and STEAM professionals.	Administrators, Teachers, STEAM Advisory Board	June 2019	Time	Strategy formed (i.e: Templates for emails, flyers, marketing purposes) Identify what curriculum projects/standards/units teachers need help with.

Explore opportunities for after school STEAM enrichment programs.	Administrators, Extended Day personnel, Community partners	June 2019	Time	Identify extracurricular opportunities Meet with Extended Day Program to talk about providing more STEAM activities.
Increase awareness of STEAM careers among students.	Community Partners, Guidance Counselors	June 2020	Time, Community outreach	Increased number of students applying to STEAM college programs Sponsor panel discussion at each school for students (day before Thanksgiving, invite recent grads to speak on their careers). Career night at high school
Increased number of STEAM enrichment programs offered after school at all schools.	Administrators, Extended Day personnel, Community partners	June 2020	Time	STEAM enrichment offerings increased
Mid Term (Years 3-4)				

Parents and community members working in the STEAM career fields support the district's STEAM initiatives.	Administrators, Teachers, community members	January 2021	Time	Administrators/Teachers reach out to community members working in STEAM fields. Teachers engage STEAM professionals to help students see the real-world application of STEAM learning.
Outreach to potential community partners	Administrators, Teachers, community members	January 2021	Time	Community partnerships in place with businesses, schools, colleges, and STEAM professionals.
Long Term (Year 5+)				
Parents and community members are key partners in the district's STEAM initiatives.	Administrators, Teachers, Community Partners	June 2023	Time, Partnerships	Parent and community partnerships formed
All students have access to STEAM enrichment opportunities outside of the school day that involve community partners.	Administrators, Teachers, Community Partners	June 2024	Time, Partnerships	Community partner lead enrichment programs offered

Theory of Action: If adequate infrastructures and supports are in place then STEAM programs will be implemented and sustained.				
Pillar #3: Infrastructure and Supports				
Priority Initiatives	**Person(s) Responsible**	**Timeline**	**Resources**	**Evidence of Effectiveness**
Short Term (Years 1-2)				
Administrators and school committee members can articulate and identify the budget and resources needed to implement the district definition of STEAM: "STEAM is an integrated approach to education which emphasizes real-world, problem-based learning that uses science, technology, engineering, the arts and mathematics as access points for guiding student inquiry, communication, collaboration, creativity, and critical thinking." Resources needed: - Budget - Scheduling - Professional Development - Staffing - Technology Resources - Curriculum Resources	Administrators, School Committee	September 2018	Time	Present to school committee

STEAM Advisory Team identifies school-based STEAM steering committees to promote and support STEAM initiatives.	Building administrators, building based staff, HS student at HS	June 2019	Time, Staff	Teams identified, Meeting Agendas / Notes
Administrators and school committee members explain the relevance of STEAM concepts and their importance for student success.	School Committee, Administrators	January 2019	Time	STEAM night at each school STEAM definition in student / parent handbooks STEAM included in curriculum nights School Committee presentations / notes
Mid Term (Years 3-4)				
District and school-based STEAM teams meet regularly to monitor progress on implementing STEAM strategic plan and share best practices.	District and school-based STEAM Team members	Ongoing	Time	Meeting Agendas / Notes
Administrators and school committee members allocate the resources needed to support STEAM initiatives. Resources needed: - Budget - Scheduling	School Committee, Administrators	Ongoing	Budget, Time	Resources needed to sustain STEAM initiatives are in place.

- Professional Development - Staffing - Technology Resources - Curriculum Resources				
Long Term (Year 5+)				