

Restructuring Plan

Program Improvement – Year 4

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Wood Middle School

Overview of School

Wood Middle School (WMS) is a Title 1, California Middle School with an enrollment of 445 students. It has a diverse student population both socioeconomically and culturally. This diversity brings richness to our school community, but it also brings significant educational challenges. Sixty-six percent of the students are socioeconomically disadvantaged; 162 students (over 30% of the student body) are English Language Learners. Of those ELL students, 81% are socioeconomically disadvantaged and almost 20% have IEP's. Wood students speak 26 different languages. Wood also houses the newcomer program for all of the AUSD's middle school English Learners.

Mission (draft)

Wood Middle School prepares students to be lifelong learners who competently navigate the changing demands of the 21st century to positively affect the world.

Vision (draft)

Our goal is to prepare students through rigorous and relevant content to be productive and successful citizens by developing both a strong work ethic and the critical thinking skills needed to solve problems in the real world.

History

Wood Middle School dissolved its "Academy" programs in 2004 and began implementing intervention based core classes in 2005. The dismantling of the "Academies" program led to a loss of identity. In 2006 the school was designated as a Title 1 school. The school has had significant administrative turnover since 2005, with 7 different administrative teams during that time. In 2009 Chipman Middle School, the neighboring Title 1 School, closed and reopened as a charter school. The closure of Chipman led to a significant change in the demographics of the Wood student body, with an increase in Socially Economically Disadvantaged students (SED) and overall student mobility. In 2010, Wood Middle School moved into Program Improvement. In addition, since 2006 the school district has identified Wood Middle School for possible closure several times.

The demographics of the school have changed dramatically since 2005. Since being designated as a PI school, 150 students, many of them proficient or advanced, opted out of Wood School. Students from transitional housing moved over to Wood when Chipman Middle School became a charter. The threat

of impending closure, the public perception of being a “bad” school because of PI status, and the lack of consistent leadership led to a lack of cohesion in instruction and a breakdown of collegiality. Declining enrollment resulted in the cancellation of elective choices and a loss of new and innovative teachers. Potential closure and ever-changing leadership compelled some experienced, trained teachers to transfer to other open positions within the district. In 2011, a team of teachers wrote and submitted an application under the district sponsored innovative schools initiative. The proposal was not approved.

Unique Offerings

During this time of transition and challenge, Wood Middle School has maintained and implemented areas of excellence. In 2007, teachers partnered with ACOE and Stopwaste.org to launch the Service Learning and Waste Reduction Program (SLWRP) which continues to thrive and receive grants, awards and recognition. Wood has an outstanding VAPA program and recently received a grant to continue and grow arts integration work. WMS has an exceptional counseling program with two full time counselors to support the student body. WMS has partnered with Purdue University and was the first Middle School in their EPICS (engineering and service learning) program. Currently Wood offers Teen Techs, an afterschool enrichment that thrives on its partnership with community volunteers. Wood has worked with the coaches from the University of Kansas to train teachers in the use of SIM strategies to implement school wide and has a SIM professional developer on staff to train and coach colleagues. This year, County Supervisor Wilma Chan’s office adopted the school. She, along with her staff and over 100 community volunteers, built a new school garden and painted Ocean Guardian murals. In addition to these innovative programs, each spring the school sponsors the Wood Museum, a multidisciplinary showcase to celebrate learning. Student projects are displayed for the public at the Alameda Free Library.

Logistical Challenges

Declining enrollment as the result of Program Improvement and the opening of new middle school options, loss of teachers and the lack of administrative consistency have made it difficult to build and staff a comprehensive academic program. Over the past four years, there has been significant staff turnover in the math department, which does not allow for professional growth or deep implementation of the district sponsored mathematics initiative. This year, Alameda Community Learning Center (ALCLC) moved onto the campus resulting in crowding and loss of facility use. The reduction in campus classrooms led to the diversion of approximately 40 inter-district students from WMS, further decreasing enrollment and restricting the ability to provide a robust elective program. The increased number of middle school options from local charters (ALCLC, NEA, AoA) and innovative school programs (Junior Jets and Bayfarm School) has necessitated that Wood School market itself and offer programs that will attract students and families. In addition, when there are a variety of

educational choices, students with academic, language and socioeconomic challenges are often left behind for the regular public school to educate, changing the balance and landscape of the classroom.

Process for Determination of Restructuring Option

Decision Making Processes

Wood Middle School School's Site Council oversees the Single School Plan for Student Achievement (SPSA). There is a site leadership team comprised of a representative body of teachers, a counselor and the administrative team. In November 2012, Kirsten Zazo, Director of Student Services for AUSD, came to a staff meeting and explained the implications of PI Year 3 and the Alternative Governance Options. She also presented the district projections for impending declining enrollment for Wood School and the likelihood that a portion of the campus would be offered to ACLC Charter School.

Stakeholder Input

In the spring of 2013, WMS held a series of five Saturday sessions to gather stakeholder input about the PI status of the school and goals for the restructuring. Session participants included parents, community representatives, Board of Education members, district staff, teachers and site administration. The high mobility rate of the student body, changing student demographics, the constantly changing leadership, lack of effective collaboration, and threat of closure were continually cited as obstacles to student achievement. The realization that over 30% of the students were English Language Learners, many of whom are SED or SPED, has had a significant impact on instruction and professional development needs.

Analysis of Options

When a school is in restructuring status, like Wood Middle School, the LEA must choose one or more solutions that best address the identified needs of the school and the school community.

1. Reopen the school as a public charter school – the parent community of WMS and the BOE rejected this option. They wanted a public, non-charter middle school available to students on the west side of Alameda.
2. Replace all or most of the school staff that are relevant to the failure to make AYP – in spring 2013 the Principal was replaced.
3. Enter into a contract with an entity, such as a private management company, with a demonstrated record of effectiveness, to operate the public school – this option was not pursued.
4. Turn the operation of the school over to the SEA – this option not permissible in California.
5. Any other major restructuring of the school's governance arrangement that makes fundamental reforms, such as significant changes in the school's staffing and governance, to

improve student academic achievement in the school and that has substantial promise of enabling the school to make AYP as defined in the state plan under ESEA Section 1111 (b) (2). – The LEA selected this option.

Research-based Strategies for School Reform

To fulfill the mandates of option 5 and in response to the analysis of the data, community meetings, staff input and the implementation of the Common Core State Standards, the following research based strategies will be utilized to improve professional practice and student learning at Wood Middle School. Each of these strategies will be discussed in depth in part IV of the restructuring plan for school improvement.

Wood Middle School Restructuring Goals for Year 1

1. Integrated Learning Training for all Faculty
2. STEAM = STEM + Art
3. Professional Learning Communities

District Instructional Elements to be refined and implemented

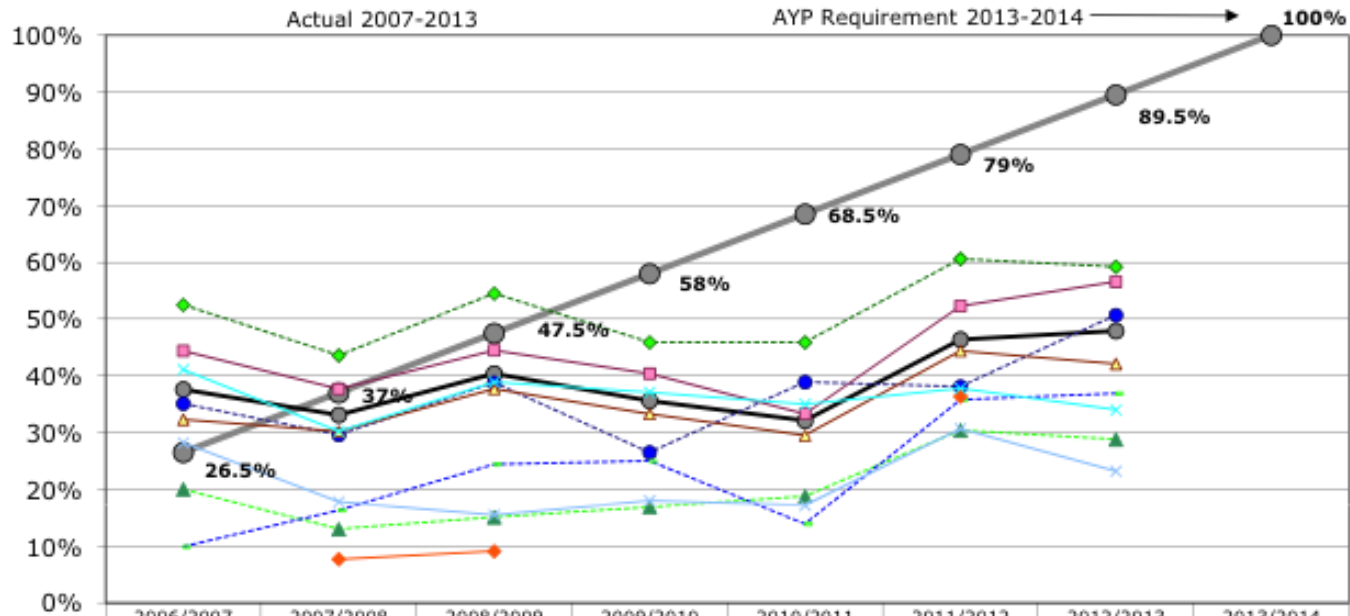
1. Training in Best Practices for English Language Learners
2. Strategic Instruction Model (SIM)/FUSION
3. RTI
4. PBIS

Part II **Student Achievement Data Summary and Conclusions and Other Data Evidence Considered**

Table 1 – 3-Year Comparison, Percent Proficient (AMOs)

GROUPS	English-Language Arts			Mathematics		
	10-11	11-12	12-13	10-11	11-12	12-13
Schoolwide	51.2	51.6	53.4	32.1	46.4	47.9
Black or African American	34.8	33.7	45.6	18.8	30.4	28.8
American Indian or Alaska Native						
Asian	55.7	54.3	55.9	45.9	60.6	59.2
Filipino	55.6	55.6	52.2	38.9	38.1	50.7
Hispanic or Latino	44.6	50.9	48.5	13.9	35.8	36.9
Native Hawaiian or Pacific Islander		36.4				
White or Caucasian	60.9	66.3	69.7	33.3	52.3	56.6
Two or More Races						
Socioeconomically Disadvantaged	43.8	45.0	46.3	29.5	44.4	42.1
English Learners	46.1	35.1	32.1	35.0	37.8	34
Students with Disabilities	40.6	33.3	31.7	17.2	30.7	23.2

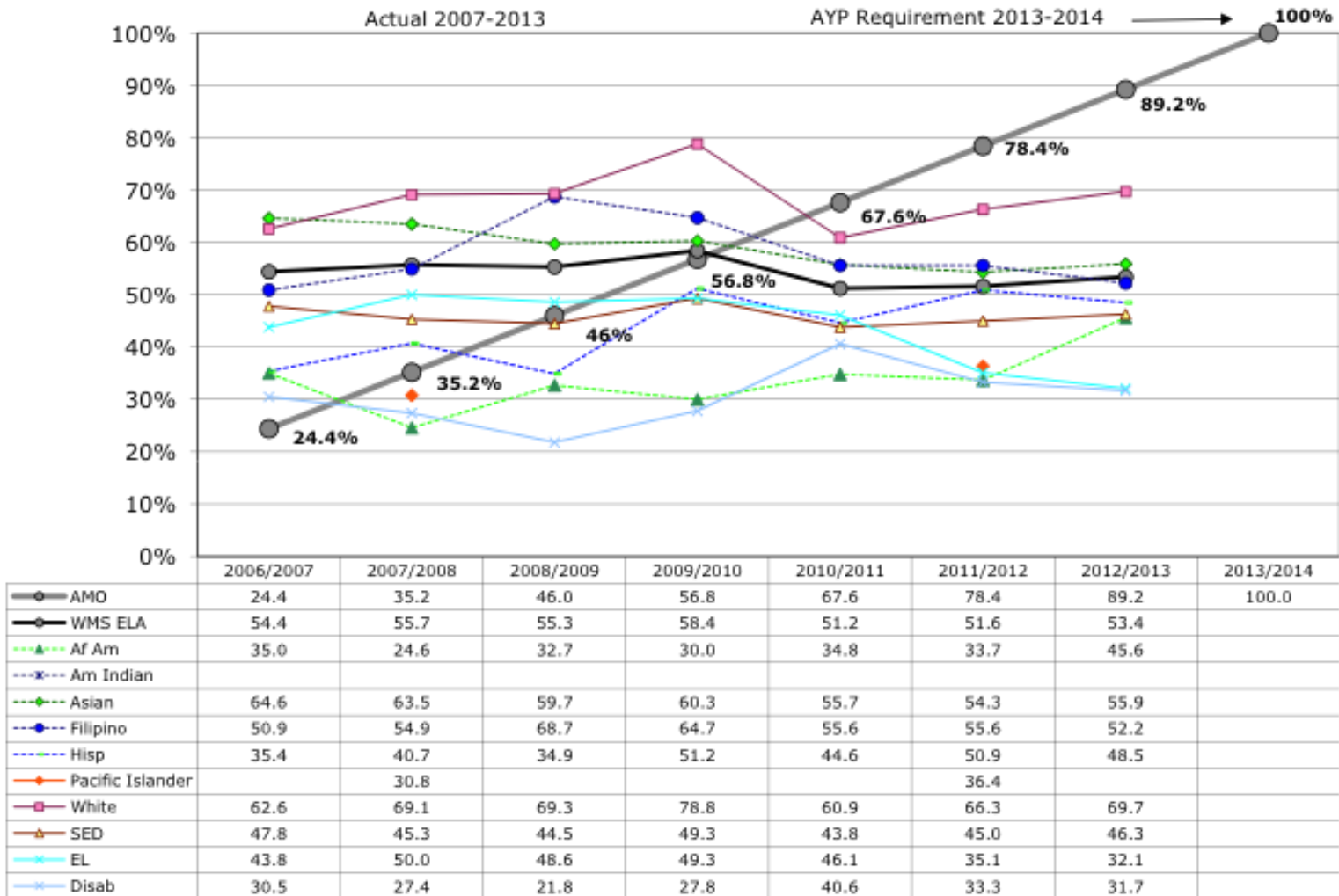
Annual Measurable Objective Updated with 2013 AYP Results Wood Middle School - Mathematics



	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014
AMO	26.5	37.0	47.5	58.0	68.5	79.0	89.5	100.0
WMS Math	37.6	33.1	40.4	35.6	32.1	46.4	47.9	
Af Am	20.0	13.0	15.1	16.9	18.8	30.4	28.8	
Am Indian								
Asian	52.5	43.6	54.5	45.9	45.9	60.6	59.2	
Filipino	35.1	29.6	38.8	26.5	38.9	38.1	50.7	
Hisp	9.9	16.3	24.4	25.0	13.9	35.8	36.9	
Pacific Islander		7.7	9.1			36.4		
White	44.4	37.7	44.5	40.4	33.3	52.3	56.6	
SED	32.3	30.2	37.7	33.3	29.5	44.4	42.1	
EL	41.1	30.2	38.9	37.1	35.0	37.8	34.0	
Disab	28.2	17.8	15.5	18.0	17.2	30.7	23.2	

Blanks indicate a non-significant subgroup for school year.

**Annual Measurable Objective
Updated with 2013 AYP Results
Wood Middle School - English Language Arts**



Blanks indicate a non-significant subgroup for school year.

Narrative of Data Analysis

STAR results for 2013 showed a slight increase in the level of proficiency for ELA and a significant increase in Mathematics over a two-year period for the school as a whole. Results for individual student groups in ELA were mixed. Mathematics showed double digit increases in percent proficient for African American, Asian, Latino, Caucasian, and SED students compared to 2011.

Of particular concern is the continuing disparity in proficiency between the lowest and highest performing groups of students. In Mathematics, Asian and Caucasian students continue to perform at levels almost twice as high as African-American and Latino students. In ELA the achievement gap between the highest and lowest performing groups has increased since 2011.

Student Mobility at Wood Middle School, which is defined as the percentage of students who enroll after CBEDS in October, hovers around 20%. This is significantly above the district average and is an important consideration for the allocation resources and development of programs to meet student needs and optimize student success.

EL students at WMS are successful in making progress in English Language Development as measured by the annual CELDT test. Last year, 62% of EL students either advanced a proficiency level or maintained Early Advanced or Advanced status. The federal expectation is 57%. However, EL proficiency on the STAR tests in ELA has been in decline over the last five years. While some of this is attributable to WMS becoming the middle school "New Comer Center", EL students need an increase in resources and programming support to achieve proficiency in state standards on an accelerated timeline.

Part III Analysis of Previous Changes Made in School Governance/Structure

Wood School has implemented a variety of structural, staffing and pedagogical changes since being designated as a PI school in 2010. Many of these efforts were implemented simultaneously, so it is difficult to assign improvements to any one change or strategy. However, Wood has had 2 years of double digit increases in API. Changes include:

Moved to a 6-period day which increased instructional time in each subject

Eliminated Core structure, which enabled teachers to focus on specific subject area content

Designed an alternative 8th grade pre-algebra math course (Site administration recognized poor performing students in algebra were not successful despite being enrolled in a supplemental math intervention class., so staff revamped placement criteria for placing students in Algebra.)

Revised curriculum of Learning Center (Staff consulted with AUSD Special Education Department and Professional Developers from University of Kansas SIM Program. WMS piloted revised program.)

Fully implemented Inquiry by Design, which poised WMS ELA teachers to be able to transition to CCSS

Provided lunchtime and afterschool tutoring by classroom teachers

Practiced school wide implementation of key SIM components

Invested in the training of an onsite SIM Professional Developer to provide coaching and training

Provided FUSION 1 & FUSION 2 reading classes in a variety of schedule formats

Created a counseling support team (Dwyer, Hill & Bowser) to monitor student progress, address conflicts, changed climate and provide better social-emotional support, enabling students to focus on learning in the classroom. Counselors have implemented structures for student recognition, mentoring and improving the home-school connection (i.e. parent information and training events,

Fall 2013 Changed Site Administrator

Rationale for Restructuring Option

By creating an Integrated Learning culture with a STEAM (science, technology, engineering, arts, and mathematics) focus, WMS will increase student participation, engagement, and achievement as well as prepare students for the unknown challenges of a rapidly changing world. Integration requires collaboration, research, intentional alignment and practical application on behalf of the teachers who take on this challenge. From the students, integration demands creativity, problem solving, perseverance, collaboration and the ability to work through the rigorous demands of multiple ideas and concepts woven together to create real world, generative learning opportunities that engages their thinking and processes towards performance based learning. Integration is not simply combining two or more contents together. It is an approach to teaching which includes intentional identification of naturally aligned standards, taught authentically alongside meaningful assessments which take both content areas to a whole new level. Put together, these components set the foundation for how we will facilitate the Common Core State Standards.

Integrated Learning (IL) will be the unifying instructional approach that builds cohesion and purpose into the classroom teaching at Wood Middle School. Through the lens of IL, teachers will connect the content of STEAM to all academic subjects through projects, exploration and inquiry.

Integrated Learning: Culturally Responsive Pathways to Student Success

WMS will partner with ACOE to provide Integrated Learning Training to all teachers through their integrated Learning Specialist Program (ILSP: <http://www.artiseducation.org/what-we-do/our-programs/integrated-learning-specialist-program>). This training aligns with the work of Maya Lin School and improves classroom teaching and learning across all subject areas through arts integration, performance-based assessments, and collaborative curriculum design. This successful, research-based approach builds upon Harvard's Project Zero pedagogies: Teaching for Understanding, Studio Habits of Mind, and Making Learning Visible. The training will provide teachers with skills to navigate the transition to Common Core State Standards and enable them to implement relevant curriculum across disciplines, assess what students know and can do, and to differentiate to meet the needs of every student.

STEAM

When determining the best model for restructuring Wood Middle School, we considered the question: "How do we prepare our students to be successful in a world that is rapidly changing?" The careers and jobs of tomorrow do not exist today.

The answer is: by providing a STEAM education (Science, Technology, Engineering, Arts and Mathematics). A STEAM education provides students with content knowledge, critical thinking and innovation while developing students' interests and skills for future success.

According to the California Department of Education a STEM education is a sequence of courses or

program of study that prepares students, including underrepresented groups for successful employment, post-secondary education, or both that require different and more technically sophisticated skills including the application of mathematics and science skills and concepts, and to be competent, capable citizens in our technology-dependent, democratic society.

Why STEAM? STEM to STEAM is a Rhode Island School of Design led initiative to add Art and Design to the national agenda of STEM education and research in America. STEM + Art = STEAM. The goal is to foster the true innovation that comes with combining the mind of a scientist or technologist with that of an artist or designer.

1. *Science* is the study of the natural world, including the laws of nature associated with physics, chemistry, and biology and the treatment or application of facts, principles, concepts, or conventions associated with these disciplines.
2. *Technology* comprises the entire system of people and organizations, knowledge, processes, and devices that go into creating and operating technological artifacts, as well as the artifacts themselves.
3. *Engineering* is a body of knowledge about the design and creation of products and a process for solving problems. Engineering utilizes concepts in science and mathematics and technological tools.
4. *Art* is the explorative vehicle demonstrating the expression of bigger concepts of creativity, innovation, critical thinking, problem solving, communication, collaboration, flexibility, adaptability and social and cultural skills.
5. *Mathematics* is the study of patterns and relationships among quantities, numbers, and shapes. Mathematics includes theoretical mathematics and applied mathematics.

STEAM education is an interdisciplinary approach to learning where rigorous academic concepts are coupled with real-world problem-based and performance-based lessons. At this level, STEAM education exemplifies the axiom "the whole is more than the sum of the parts."

STEAM education in the Middle Grades:

- Introduces an interdisciplinary program of study consisting of rigorous and challenging courses and aligns with Integrated Learning Frameworks.
- Continues to provide standards-based, structured inquiry-based and real world problem-based learning that interconnects STEAM-related subjects.
- Bridges and connects in-school and out-of-school learning opportunities.
- Increases student awareness of STEAM fields and occupations, especially for underrepresented populations.
- Increases student awareness of the academic requirements of STEAM fields and occupations.
- Begins student exploration of STEAM related careers, especially for underrepresented populations.

To make the transition to STEAM viable and effective, Wood Middle School staff will leverage programs that are already in place; Integrated Learning with ACOE, Service Learning Waste Reduction

Project (SLWRP) with StopWaste.Org and the EPICS/Teen Techs Robotics program with Purdue University.

Professional Learning Community (PLC)

The work of PLCs revolves around three key questions:

What do we want students to learn?

How will we know when they have learned it?

What will we do when students are not achieving?

Wood staff will actively participate in ensuring that ALL students achieve, committing to constant examination of data and practices, and functioning as a community (not as silos) so that all students will benefit from a choreographed program of planning, best-practices instruction, assessment, intervention and enrichment. This sort of comprehensive, school-wide, frontal approach to ensure academic achievement for all underlies all PLC-led schools and accounts for many of them receiving United States Department of Education Blue Ribbon Awards for raising student achievement in schools with true heterogeneity in terms of socio-economic status, race and former academic performance levels.

Teaching and nurturing the whole child

It is the intent of the faculty of Wood Middle School to provide a safe and nurturing environment where the academic, social-emotional and physical needs of a child are supported. This will be done through school wide implementation of AUSD adopted Positive Behavior Intervention System (PBIS), systemic Response to Intervention (RTI) and mentorship through an Academic-Social Advisory taught by all credentialed faculty.

All students will be members of small learning communities where teachers will collaborate to create meaningful, and aligned content in a balanced academic program.

Staff will participate in training to implement a 6th Grade orientation and mentoring program led by representative 8th grade students. This program will help facilitate and ease the transition to middle school. In response to the high mobility rate at WMS, a systematic approach to welcoming and assimilating students who enroll throughout the school year will be implemented and monitored through the advisory course.

Master Schedule Considerations (See Appendix A)

Add a sheltered science course

Class size reduction 25:1 for core classes (Budget impacts TBD pending enrollment)

Provide all students access to an enriching elective

Create and implement an Advisory Course

Part V: **Action Plan for Implementing Restructuring Plan**

Teaching and Learning

- By February of 2014, a student survey will be implemented to determine the exploration courses/electives that will be offered by August of 2014.
- Teachers and administrators will be trained in Integrated Learning by Alameda County of Education. Course A must be completed by June of 2015. All three courses must be completed by June of 2016.
- A team of teachers and administrators are receiving training on Response to Intervention. The training will be completed by June of 2014. The team will train remaining teachers and para-educators on differentiation and ensure Tier 1 interventions are implemented in all courses. Training to build all staff's capacity to deliver lessons in whole and small group instruction, with clearly articulated learning objectives, and using gradual release model will be ongoing. Teachers will utilize a variety of teaching strategies, including SIM, IBD and multiple methods and modify assignments and assessments.
- All teachers and para-educators will be active members of authentic professional learning communities. In June of 2014, PLC's will meet and complete first cycle of inquiry and end of unit culminating project-based assessment. Each month, PLCs will be released to have additional collaboration time to plan integrated lessons.
- By June of 2014, character curriculum for the advisory class aligned to the anti-bullying initiative, TUPE and Lifeskills, will be developed. All students will participate in a weekly, multi-grade level advisory to foster school community, and to support students' social and emotional development.
- Administrators and teachers will continue being trained on Positive Behavior Intervention Supports (PBIS). By August of 2014, school wide incentives, student expectation grid, and consequences will be completed. In addition, all students will be enrolled in an advisory class.
- Strategic Instructional Model –Site SIM professional developer will continue to collaborate with District SIM Coach on plans for site implementation of strategies for 2014-2015 school-year. This will include teachers embedding, supporting and integrating strategies.

Goal	Item	Cost	Categorical	PTA	Student Body	Grant	District	When
Integrated Learning Training	Train 25 Teachers	\$22,500				\$13,500	\$9,450	Over 2 Years
	Teacher Stipends (\$500/class)	\$37,500	\$37,500					Over 2 Years
	Integrated Learning Summer Institute (10 Teachers)	\$2,990	\$2,990			\$900		Summer 2014
	Staff Attend Future Summer Institute (15 Teachers)	\$8,970					\$8,970	Summer 2015 & 2016
	.02 Coaching in Integrated Learning	\$15,000					\$15,000	Ongoing
Professional Learning Community	Staff Retreat	\$5,250	\$5,250					Summer 2014
	Summer Planning Time	\$2,400	\$2,400					Summer 2014
	Release Planning Time for Teaching Teams	\$5,400	\$5,400					2014-2015
Engineering & Technology Courses	Teacher Training - Project Lead the Way	\$15,000					\$15,000	Summer 2014, 2015, 2016
	Autodesk Lab	\$28,600					\$28,600	One time- Summer 2014
	Equip Technology & Engineering Lab	\$20,000					\$20,000	Summer 2014
	Consumable Engineering Materials	\$1,500					\$1,500	Ongoing
	Convert Classroom to tinkering/Maker Space	\$3,000				\$3,000		Summer 2014
	Create Multi-Media Lab	\$17,000					\$17,000	Summer 2014
Orientation/Advisory	Train 2 Staff Members in WEB program	\$5,000			\$5,000			Spring 2014
	6th Grade Orientation	\$250		\$250				Fall 2014
	Organize and reproduce Advisory Curriculum	\$860	\$860					Spring 2014
Increase Student Enrollment	Print & Mail Post Cards	\$750	\$750					Winter 2015
	Print & Post Banners	\$500		\$500				Spring 2014
	Advertisement in local Paper	\$250	\$250					Winter 2015
Field Trips	All students participate in minimum of 3 Field Trips	\$20,000		\$5,000	\$5,000	\$5,000	\$5,000	2014-2015
25:1 FTE	Class-size reduction in core classes	TBD						
TOTALS		\$212,720	55400	5750	10000	\$22,400	\$120,520	

School Goal # 1 All Wood Middle School teachers will be trained in Integrated Learning strategies (ILSP), frameworks, and intended student outcomes through Alameda County Office of Ed, Integrated Learning Specialist Program. (See Appendix B & C for ILSP specifics and 2013-2014 grant funding)

Means of evaluating progress toward this goal:
 -Evidence from ACOE Course matriculation sheets that all teachers are matriculating through the 3 core courses in the program: Course A – Integrated Learning Strategies, B – Performance Based Assessment and C – Collaborative Curriculum Design.
 -Teachers take leadership role at site in presenting to each other at staff meetings the work they are doing and their learning in these courses to build collaborative learning community at WMS.

Evidence of effective implementation:
 -Teachers implement Integrated Learning curriculum they develop through the ILSP program – this is used during teaching observation/evaluation days to evaluate shift in pedagogical approaches in their classrooms
 -Teachers present students work at faculty meeting to show/share portfolios of learning
 -WMS Admin track new Smarter Balance assessment tests over the next 3 years of implementation to gauge effectiveness, student learning and performance assessments
 -Parent/Community Exhibitions of Learning to show students’ learning and engage larger community in dialogue about the success of our student’s explorations.

Actions and Strategies to Reach This Goals	Timeline	Person(s) Responsible	Proposed Expenditures	Estimated Cost	Funding Source
Enroll all 25 WMS teachers including Principal in program and matriculating through all 3 core classes of the ILSP program Course A, B and C.	June 2014-June 2016	--Principal -Integrated Learning Specialist	\$299 Tuition per teacher/per course	\$900 per teacher for 3 core courses Estimated WMS share of the cost after the ACOE discount will be \$9,450.00	ACOE is funding 3 teacher/leaders full tuition for the 3 classes. ACOE is offering 50% tuition break on remaining teaching staff to go through the program. Teaching & Learning Department
Teacher Stipends for their time taking course (outside of tuition costs)	June 2014-June 2016	-Principal -Integrated Learning Specialist	\$500 per teacher per course	Site total est. \$37,500	Categorical

Core Leadership Team from WMS (ILT) Integrated Learning Summer Institute through ACOE for IL and STEAM	August 2014-ongoing	Principal	\$299 for 10 teachers	\$2,990	We will work with ACOE to help offset costs of funding through scholarship opportunities for our teachers can apply for.
WMS Instructional Leadership Team (ILT) present as teacher leaders at the Integrated Learning Summer Institute through ACOE for IL and STEAM learning and curriculum	August 2015, 2016 and ongoing	Integrated Learning Specialist	No cost	No cost	-----
Remaining WMS Teachers attend Integrated Learning Summer Institute (teachers other than leadership team from site)	August 2015-2016	Integrated Learning Specialist	\$299 for 15 additional teachers	\$4,485 per year Total \$8,970	District – however we will work with ACOE to help offset costs of funding through scholarships

School Goal # 2 Build Professional Learning Community – WMS staff will participate in ensuring all students are achieving, committing to constant examination of data and practices, and to functioning as a community.

Means of evaluating progress toward this goal:

- Active Staff Participation in collaboration time
- Review of agendas and minutes from collaboration time
- Teacher feedback
- Cycles of Inquiry

Evidence of effective implementation:

- Teachers implement Integrated Learning curriculum they develop through the ILSP
- Teachers present students work at faculty meeting to show/share portfolios of learning
- WMS Admin track new Smarter Balance assessment tests over the next 3 years of implementation to gauge effectiveness, student learning and performance assessments
- Coordinated units of study

Actions and Strategies to Reach This Goals	Timeline	Person(s) Responsible	Proposed Expenditures	Estimated Cost	Funding Source
Staff Retreat	August 2014	Principal Vice Principal	Teacher Hourly Food	\$5,000 \$250	Categorical
Summer Planning Time	June 2014- August 2014	Principal Vice Principal	4 hours per teacher	\$2,400	Categorical
Release Time for Teaching Teams 2 times during academic year to plan and refine curriculum	Fall 2014 Winter 2015	Principal Vice Principal	Substitute costs to release 3 teaching teams of 6 teachers twice	\$5,400	Categorical

School Goal #3 Add engineering and technology courses to master schedule with trained teacher to provide a comprehensive STEAM education (Science, Technology, Engineering, Arts and Mathematics).
(Refer to Appendix D)

Means of evaluating progress toward this goal:

- Student work samples and projects
- Evidence of engineering in other content areas
- Increased participation in student work exhibitions

Evidence of effective implementation:

- Teacher trained and prepared to teach engineering elective offerings
- Materials purchased and installed in lab
- Operational tinkering space in use by students and community members

Actions and Strategies to Reach This Goals	Timeline	Person(s) Responsible	Proposed Expenditures	Estimated Cost	Funding Source
Train 1-2 teachers in Technology & Engineering Program such as Project Lead The Way for year 1 curriculum	Summer 2014	Principal	Summer institute at local university	\$5,000	Categorical
Purchase Non Consumable Materials for Technology Engineering Lab Includes Membership in PLTW (One Time Start Up Costs)	Summer 2014	Principal	Curriculum Units and Materials	\$20,000	Teaching & Learning
Technology and installation for Engineering Lab	Summer 2014	Principal	25 computer work stations, 1 teacher laptop, Wiring & installation	\$28,600	Teaching & Learning
Engineering Kits Consumable Materials for Year 1 for 4-sections (In subsequent years will be the ongoing Introductory STEM course/6 th grade course) On going expense	Summer 2014	Principal	Foundational Design & Modeling Automation Robotics	\$1,500	Teaching & Learning
Convert a classroom into a Tinkering Lab/Maker Space	Summer 2014	Principal	Basic Equipment and Materials	\$3,000	Seeking matching funds from Donor's Chose and materials from Freecycle.

Technology and installation for Multi Media Lab	Summer 2014	Principal	15 Work Stations Software Wiring & installation	\$17,000	Teaching & Learning
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School Goal #4 Build Community; facilitate transition and adjustment to middle school for all new students through orientation program and implementation of advisory course to continue building school culture and climate, educate about anti-bullying and teach school procedures. Address issues resulting from high mobility rate (22%).

Means of evaluating progress toward this goal:

- Decreased mobility
- Monitor attendance and tardies
- Monitor transition of students entering school throughout the year

Evidence of effective implementation:

- Successful Orientation event
- Student Satisfaction survey for student leaders and participants
- New students get involved and feel part of school community

Actions and Strategies to Reach This Goals	Timeline	Person(s) Responsible	Proposed Expenditures	Estimated Cost	Funding Source
Train 2 staff members in identified program (WEB)	Spring 2014	Counselors	Registration and travel	\$5000	Student Body Funds
Recruit and Train Student Leaders	May 2014	Counselors	-	-	-
Orientation Event	August 2014	Counselors	Snacks for participants & Supplies	\$250	Student Body Funds
Design Master Schedule that has Advisory	March 2014	Vice Principal	None	None	n/a
Organize and reproduce Advisory Curriculum	June 2014	Principal Counselor SIM Teacher	Teacher Hourly Photocopies	\$360 \$500	Categorical

School Goal #5 Increase Student enrollment.

Means of evaluating progress toward this goal:

- Compare attendance from 2013, 2014 to 2015
- Monitor enrollment and opt outs

Evidence of effective implementation:

- Increased attendance on school tours and at information night
- Increased enrollment in school

Actions and Strategies to Reach This Goals	Timeline	Person(s) Responsible	Proposed Expenditures	Estimated Cost	Funding Source
Print Post Cards Mail Post Cards	December 2014	Vice Principal	Printing & Postage	\$750	Categorical
Print Banners to Display on Building to inform public and community of STEAM education at WMS	Spring 2014	Principal PTA Rep	Production, Printing and Mounting	\$500	PTA
Reach out to AUSD schools and community via auto dialer and Newspaper Announcement	January 2014	Principal	Advertisement in local paper	\$250	Categorical

School Goal #6 Provide opportunities for Field Trips for all students to allow equal access to content. Frequently the SED students have not had experiences with Art, Technology or Geography that enable them to easily access core content. By beginning units of study with field trips, all students can build schema about the content enabling greater understanding and increasing likelihood of academic success.

Means of evaluating progress toward this goal:

- Qualitative student surveys
- Review of field trip requests
- Criteria for identifying potential field trip locations

Evidence of effective implementation:

- Student work samples
- Increase of student engagement and achievement

Actions and Strategies to Reach This Goals	Timeline	Person(s) Responsible	Proposed Expenditures	Estimated Cost	Funding Source
Take all students on a minimum of 3 content related field trips per year.	2014-2015 academic year	Principal Vice Principal	\$50 per child	\$20,000	\$5,000 from student body funds, \$5,000 from PTA, \$5,000 Curriculum and Instruction, \$5,000 Community Partnerships

Plan for Monitoring the Effectiveness of the Restructuring Plan

We will look at both qualitative and quantitative measures to evaluate the effectiveness of the restructured program. We will use data and feedback from assessments, surveys, student work samples and observation to guide cycles of inquiry to continually refine and improve the program. Information will be shared with all stakeholders through community meetings, school newsletters and board reports. Some of the information used for program evaluation is listed below.

Qualitative Review

- Surveys of all stakeholder groups (students, parents, teachers, staff) to measure engagement and satisfaction
- PLC-level evaluation of collective efficacy
- An annual Review of Progress toward restructuring goals built into SPSA

Quantitative Review

- EL reclassification
- CELDT Scores
- Student scores on common assessments
- Student scores on district benchmarks
- Monitor changes in enrollment, attendance and suspension

Once new Common Core aligned quantitative measures are established and normed by the CDE and school district, we will incorporate those into our systems of program evaluation.

Appendix A

Criteria for alternative schedule:

- A foundational concept is for **all** students have access to an enriching elective
- Offering a rotation or drop rotation schedule
 - Adding a 7th period to the schedule (6 periods per day)
 - The number of minutes per period will remain approximately the same as currently in place (57 minutes).
 - The actual bell schedule will be voted on as a variance with collaboration Wednesday
 - All 7 periods may meet on Wednesdays
 - Allowing students to see teachers' different times of the day throughout the week
- All students and teachers will have an elective class via a fixed elective 7th Period (see graph below)
 - Fixed elective may be on a trimester basis (Exploratory WHEEL ex: Japanese, robotics, computers, Chess) or possibly yearlong (ex. Yearbook, Leadership)
 - Teachers will be surveyed for their interest determine the elective offerings
 - Current 6th and 7th grade students to be surveyed to assist in determining interest in teacher offerings
- Build in an Advisory –
 - Advisory will be embedded in the time allocated for the fixed elective 7th Period (minutes to be determined: 20 minutes 1-2 times per week with flexibility)
 - All teachers have Advisory with students (separate from 7th period students)
 - Counselor projects (ex. No name Calling, Anti-Bullying)
 - Student Announcements
 - Student/Teacher relationship building

Sample Schedule

DRAFT Wood Schedule 14/15 DRAFT									
Six Day Drop Rotation Schedule									
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6				
1	6	5	4	3	2				
2	1	6	5	4	3				
3	2	1	6	5	4				
4	3	2	1	6	5				
Lunch	Lunch	Lunch	Lunch	Lunch	Lunch				
7	7	7	7	7	7				
5	4	3	2	1	6				
DRAFT: Ten Day Rotation with ALL 7 periods on Wednesdays									
Mon	Tues	Wed	Thurs	Fri	Mon	Tues	Wed	Thurs	Fri
1	6	1	5	4	3	2	1	1	6
2	1	2	6	5	4	3	2	2	1
3	2	3	1	6	5	4	3	3	2
4	3	4	2	1	6	5	4	4	3
Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch
7	7	7	7	7	7	7	7	7	7
5	4	5	3	2	1	6	5	5	4
		6					6		
	Wednesday Options with Collaboration:								
	1) Constant schedule of ALL 7 periods Not in Drop Rotation								
	2) In Drop Rotation with only 6 periods (as shown 1 st graph)								

Appendix B

INTEGRATED LEARNING FRAMEWORK

Integrated Learning Framework (ILF) helps learners to cross disciplinary boundaries and connects knowledge and ideas to generate deep, meaningful, holistic understandings of academic content and its relationship to the learner and their local communities and the larger world. At the core of integrative learning is *creative inquiry*, which thrives in the spaces between disciplines and draws on multiple disciplinary practices, particularly those of the arts. As a tool for learning – the Integrated Learning Framework promotes a *creative inquiry-based* approach to learning and teaching modeled on contemporary practices in the arts, the natural sciences, the social sciences, and the humanities. Its fundamental principle is that meaningful learning and deep understandings are generated through creative play, investigation and creation.

ILF will be useful to educators of all subject areas who want to foster significant meaningful and integrated learning and understanding. It is grounded in the theory, philosophy, and practices of Teaching for Understanding (TfU) and inquiry driven learning. Utilizing the Teaching for Understanding Framework vocabulary, structures and models, ILF provides additional scaffolding to support the development of creative, hybrid teaching and learning practices that foster habits of mind that allow students to think and practice across disciplines and engage through the authentic lenses of contemporary experts and practitioners out in the world. This new framework outlines these *integrative habits of mind* for teachers and learners, and provides guiding templates for teaching and curriculum development.

DEFINITIONS

Integrated Learning and Teaching

Integrative education is defined as education that promotes learning and teaching in non-fragmented ways that embrace notions of holism, complexity and interconnection. Integrative education rejects the common emphasis on transmitted knowledge. Rather it proposes that knowledge and meaning are constructed by the learner through processes of investigative inquiry through interaction with others, the materials, and the social and physical contexts. Integrated education calls to question the traditional gulfs between teacher and learner, and rejects the divisions between physiology, cognition, and emotion in the learning process. **Furthermore, integrative education embraces links, rather than divisions, between the academic disciplines and between various subjective and objective epistemologies and methods of inquiry.** (Gnanakan, 2011, P. 14).

Ken Gnanakan (2011). *Integrated Learning*. New Delhi, India: Oxford University.

Integrated Thinking/Learning:

Is thinking and learning that crosses boundaries and makes connections among knowledge systems to generate new knowledge and deeper understandings, connect knowledge to the learner, and generate learners' agency, curiosity, self-understanding, and care.

The ILF finds a direct correlation between Integrated Learning and L.D. Fink's (2013) *Significant Learning Experiences*. These six dimensions of significant learning as laid out by Fink, are intrinsic to integrated learning.

Significant Learning:

1. *Integration*: Connecting ideas, learning experiences, and realms of life
2. *Foundational Knowledge*: Understanding and remembering information and ideas
3. *Learning How to Learn*: Becoming a better student; Inquiring about a subject; Self-directing learner
4. *Application*: Skills; Thinking: Critical, creative and practical; Managing projects
5. *Human Dimension*: Learning about oneself and others
6. *Caring*: Developing new feelings, interests and values

Reference:

L.D. Fink (2013). *Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses*. San Francisco: Jossey-Bass.

The INTEGRATED LEARNING HABITS OF MIND

1. **Understand the Disciplines**: Understand the individual disciplines, including the arts, as areas of inquiry: their purposes, knowledge, methods and forms.
2. **Think Systemically**: Explore common ground and interconnections of disciplinary knowledge, ideas and practices.
3. **Make Meaning**: Find connections between academic knowledge, oneself, and life outside of school.
4. **Inquire Creatively**: Investigate open-ended questions through a creative process that employs multi-sensory, aesthetic, imaginative, playful, conscious, and intuitive investigations and thinking processes. Apply poietic logic (linear/logical and non-linear/associative thinking).
5. **Think Flexibly**: Flexibly apply knowledge and ideas to new contexts.
6. **Be Metacognitive**: Understand and monitor one's thinking and learning.
7. **Work Independently and Develop Agency**: Develop and follow one's own personal learning path.
8. **Be Open and Resilient**: Develop curiosity regarding the unknown; engage and navigate challenges, ambiguity, and uncertainty.
9. **Care**: Develop care about issues and ideas and the motivation to act or engage in further exploration.
10. **Create**: Construct/invent a creative response to knowledge and ideas.

BUILDING BLOCKS OF INTEGRATED LEARNING

Integrated Learning Suggested Components and Scaffolding

1. **Foundational Knowledge:** Identify (or develop) and use:
 - a. Guidelines for concept-mapping of each discipline around the *four dimensions* (purpose, knowledge, methods and forms – part of Teaching for Understanding approach to learning through the lens of experts in the field).
 - b. Guidelines for using disciplinary methods and ways of thinking in inquiry.
 - c. Protocols for mining the *four dimensions* through questions and inquiry.
2. **Integrated Knowledge:** Identify (or develop) and use:
 - a. Guidelines for concept-mapping common topics, concepts, understandings, and ideas.
 - b. Guidelines for exploring connections through questions and inquiry.
 - c. “Mix and match” lists of disciplinary components to identify commonalities.
 - d. List of major “hubs” of integration (where disciplines overlap in purpose, knowledge, methods, and forms).
3. **Creative Inquiry:** Identify (or develop) and use:
 - a. Research workbook guidelines.
 - b. Research workbook protocols: ideas for questions, lists of thinking, learning and creative process strategies, etc.
 - c. Vocabulary for thinking, learning, and inquiry dispositions (develop metaphorical words for thinking, inquiry and creative process).
 - d. Guidelines for developing research questions.
 - e. Creative strategies for investigation and interpretation.
 - f. Protocols for hands-on, minds-on methods of investigation and interpretation.
4. **Metacognition:** Identify (or develop) and use:
 - a. Guidelines for research workbook reflections.
 - b. Scaffolding activities for reflection.
 - c. Activities for extension that foster reflection.
 - d. Thinking/learning/creative process words.
 - e. Guidelines/suggestions for thinking/learning walls.
 - f. Creative activities for reflection: metaphor and mapping.
5. **Care, Interest and Motivation:** Identify (or develop) and use:
 - a. Suggestions for connecting research workbooks to learner interest.
 - b. Suggestions for community-based (outside school) activities.
 - c. Guidelines for questions that connect ideas and content to personal and outside influences/situations.
6. **Poietic Logic:** Identify (or develop) and use:
 - a. Lists of creative strategies divided into categories (investigative/analytical; interpretive/associative).
 - b. Protocols for developing creativity questions: What ifs?
 - c. Suggestions for playful investigative and interpretive activities.
 - d. Protocols for mixing linear and analytic thinking with associative non-linear thinking.

NOTE: Poietic Logic is a combination of analytical, logical and linear thinking with non-linear, associative, and imaginative thinking. It’s the kind of meandering, directional yet circular thinking artists, scientists, writers, mathematicians and all creative investigators use. It’s the heart of creative inquiry.

INQUIRY PLAN

A Sample of Curriculum Building Approach based on Teaching for Understanding as a way to explore inquiry based integrative learning promoted through the ILSP Courses:

Overview: A short description of the inquiry/project.

Throughline: The overarching, generative topic of the curriculum and the context for this inquiry – often presented in the form of a question

Generative Topic: Significant idea or issue the inquiry investigates

Understanding Goals: What you want learners to understand – presented in the form of *Generative Questions* – **questions** that engage the learner in wondering, thinking, inquiry and planning: Jumpstart questions that are specific yet open-ended.

Knowledge (Disciplinary topics, concepts; Cross-disciplinary topics, concepts)

Application (Discipline specific; cross-disciplinary skills, methods)

Thinking (Creative and critical)

Metacognition (Learning skills, self-awareness, monitoring)

Connection to Learner (Interest, care and motivation)

Pedagogical Strategies: Ways you will engage students with the Understanding Goals.

- Methods for going deep: (thoroughly exploring significant concepts in academic content)
- Methods for integration (making connections to curriculum, to learner)
- Methods of catalyzing thinking: (generating critical and creative thinking)
- Methods for building engagement, interest, motivation and caring

Performances of Understanding: The hands-on methods, processes and kinds of thinking learners will engage in.

Inquiry-based and investigative

Multimodal and active

Interactive and collaborative

Assessment Criteria: List of criteria that reflects the Understanding Goals: Understanding of knowledge (discipline-specific and integrated) methods (discipline specific methods and hybrid/cross-disciplinary methods), thinking (critical and creative) and metacognitive skills, and generation of interest, caring and motivation.

Learning Episode Strategies and Guidelines to Consider:

- **Introduction/provocation:** How you will introduce the inquiry, its concepts and processes. This could include a presentation (visual images, music, dance, theater pieces and/or readings), a demonstration, an expedition, or a series of introductory activities.
- **Learners at Work:** A list of steps in the process.
- **Questions to guide inquiry:** Questions along the way that push the inquiry (make connections, go more deeply, guide the inquiry)
- **Closure:** Activities learners will engage in at this stage of the inquiry. This could include written reflections, conversations, engagement with the “products” of the inquiry, public presentations, learner statements, and creative, hands-on ways to reflect on learning etc.
- **Reflection Questions:** A list of questions that help learners to synthesize, internalize and demonstrate what they have learned. Questions that help them make meaning and generate metacognition, a sense of agency, and action.
- **Assessment Procedures:** List of ways learning/understanding will be assessed both in ongoing formative assessment and summative assessment.
- **Extension:** How this inquiry could be continued; where it could lead.

Appendix C

Integrated Learning Grant 2013-2014 School Year

Demo Schools Project Budget Detailed 2013-14	
	Projection
Revenue	
In Kind (NEA, Hewlett grants)	\$12,355.56
TOTAL REVENUE	\$12,355.56
Expenses	
Personnel	
Teaching Artist/Coach	\$5,000.00
Wood (TN)	\$5,000.00
coaching oversight (TN)	
Grant Evaluator (DF)	\$1,000.00
Demo Schools Documentation (LW)	\$1,500.00
Total Personnel Expenses	\$7,500.00
ILSP, ILSI registration	
Wood	\$3,500.00
Non-Personnel	4,150.00
Wood Supplies	\$4,150.00
Indirect Cost Rate (8.79%)	\$994.56
Total Non-Personnel Expenses	\$5,144.56
TOTAL EXPENSES	\$12,644.56

Appendix D

Cost Estimates – PLTW (GTT) Gateway To Technology

Annual Participation Fee	\$750	Per school Per year	Includes all required software license and PLTW support, unlimited number of students/seats
Core Training	\$1,200 (training) + \$750 (lodging)	One time cost Per week per teacher	DM and AR require 1 week training. Most other units are about 2/week
Computers/ Laptops	TBD	1 computer per student +1 Laptop for Instructor	See PLTW Computer Requirements*
Core Setup	\$500	One time cost per PLTW classroom	Assumes classroom already has a printer and projector
Equipment	See table below	Per unit per classroom	One time purchase (assumes 30-35 students per class) See table below.
Consumables	\$350	Per section	Annual purchase (assumes 30 students per class)
MakerBot	\$3,000	Optional	3D Printer with shipping, warranty and supplies
Laser Printer	\$3,500.00	Optional	
Large Format Printer	\$3,500.00	Optional	

* https://www.pltw.org/sites/default/files/Appendix_C_Computer_Specs_2013_2.pdf

Unit	Equipment for ~4 classes per day of 30-35 students	Equipment**
AR/DM	Automation and Robotics/Design and Modeling	\$18,000***
EE	Energy and the Environment	\$3,000
FS	Flight and Space	\$2,000
ST	Science of Technology	\$1,500
ME	Magic of Electrons	\$3,000
GA	Green Architecture	\$2,500
MD	Medical Detectives	\$2,000

** <http://www.pltw.org/program-support/2013-2014-purchasing-manual>

*** multiply this by the number of concurrent sections there will be during the grading period

Appendix E

Technology Requirements (preliminary)

These preliminary requirements represent the current tools needed to implement a comprehensive STEAM program. We know this will be an ongoing acquisition process, with the needs evolving as technology advances.

A 21st century integrated learning, STEAM school provides students the tools necessary to research, create, design, build and revise as they learn. This requires re-thinking the traditional school media center/computer lab configuration. Rather than one block of computers in the lab, there might be multiple, smaller work spaces. Technology tools become integrated into the entire learning process.

The engineering technology classroom requires computers that can support auto-desk.

-Digital Multi-media lab with video cameras, computers, digital music capability, animation lab, applicable software, printers, scanner

-Research Area with computers connected to the internet

This will require the following:

- Stable, high-speed wireless internet access
- Investment in new computer hardware and software
- Investment in digital media tools

Schools and districts **looking to purchase computers in the 2014-2015** school year should meet or exceed the specifications below. **Please be sure to make this purchase in consultation with your IT department.**

High School PLTW Engineering and Middle School PLTW Gateway:

- **Please see computer specifications below:**
 - **All teachers must purchase a laptop**
 - **Students may use either laptop or desktop computers**
- **PLTW curricula utilize powerful, industry-based software that may require computer upgrades. Hardware decisions should be made in consultation with your IT department to determine actual needs.**

Processor	Intel® Xeon®, i5 or i7 processor
RAM	8 GB min for 64 bit processor
Hard Drive	500 GB + Hard Drive
Video Card	512 MB min, 1 GB recommended dedicated RAM or greater DirectX (Direct3D) Capable graphics card supporting 1280 x 1024 screen resolution* (Intel Graphics chipsets are not recommended, no integrated video with shared RAM)
Optical Drive	DVD-ROM Drive
Operating System	Windows 7 or Windows 8, 64 bit operating system or Apple MacBook Pro with Bootcamp and one of the above systems.
Network	Must have network connectivity (wireless and/or wired)
Other Software necessary	IE9 or later Firefox 20 or later is recommended for optimal utilization of the PLTW Learning Management System (LMS) Adobe Flash Player 10 or later Microsoft Office, version 2007 through 2013, for iComponents, thread customization, and spreadsheet-driven designs

****IMPORTANT:** Basic Intel graphic chipset or other chipsets with shared memory should not be used for video display. All graphic chipsets must be 3D capable and support OpenGL and DirectX. A third party graphics card is almost always necessary.*

High School PLTW Engineering and Middle School PLTW Gateway - Printer Specifications:

Print speed: Up to 35 ppm
 Resolution: 600X600 dpi
 Memory: 128 MB min
 Paper size: Letter, legal, 11X17 (required)
 Robust duty cycle
 Network ready
 Color not required

Appendix F

Day in the life of a student at Wood Middle School in the new world of Integrated Learning – Ocean Guardian STEAM Collaboration:

The following examples are 3 days in the life of a Wood MS student through an integrated science, math, language arts and visual arts unit that has students examine, explore and come up with tangible solutions to issues they see in their own local environment. Students use Design Thinking process and begin their new explorations in the WMS Tinkering Lab.

CCSS targeted strands for Science, ELA, Math and Art for this unit of study are as follows:

ELA - Interpret/Analyze. Integrate/Synthesize. Construct Arguments. Produce clear ideas in writing and speech. Respond to text with self-awareness.

Science - NGSS - ESS3.A Earth and Human Activity. The role of water and the human impact on earth systems.

Math - Understanding the various math disciplines and their real life applications. Consider and try new skills to create a coherent representation or understanding of the problem at hand.

Students explore the following VAPA strands: Art - 2.0 Creative Expression, 4.0 Aesthetic Valuing, 5.0 Connections, Relationships, Applications

Day One: Introducing a semester long investigative; *As artists and scientists how can we make a change in the world around us?* Science teacher and SLWRP (Service Learning Waste Reduction Program) program leader begins the year with a walk on the local beach at Crab Cove, and leads her 6th grade students in an observation activity to get them to understand what is happening at the local public beach. Students take notes, document with photographs and collect data about what they are seeing and what they find there, pick up objects from the beach and bring them back to the classroom to examine and explore the following day.

In the art classroom, the art teacher asks her students the same question: *As artists and scientists how can we make a change in the world around us?* She introduces a range of local artists who have explored the local marine environments and through their art practice have helped to spread awareness and make change to support local environments to become healthy places again. Marin artist Judith and Richard Selby-Lang

Day Two: In the science classroom, students take out the bags of items found at the beach and start to examine and categorize what they found and have groups discussions about what they saw (working from the notes, photographs and objects collected the day before). They use this data to understand and make deductions about who is using the beach and how, what wildlife lives there and how human interaction (in their own community) has shaped the beach for better or for worse. These ideas are charted by each student group on

large posters with photos, notes and objects they found to support their thinking and to help them develop a hypothesis to move forward with their beach investigation.

In math class, students are learning to visually represent data using a variety of graphing techniques. Students are using the information and data gathered from their trip to the beach to understand how to take their findings and apply them to create tools for their study of the environmental impact on the local coast.

In the art classroom, students use the design thinking process to understand how to use data and other research to create a work of art that tell the story of their learning and helps to promote care and responsibility towards our local shoreline. In collaborative teams they talk about their findings and identify goals for the story they want to tell through their artwork and begin by sketching their ideas. In their groups they discuss and decide on strongest concepts and present their ideas to the whole class for peer supported feedback.

In the Language Arts class students begin to read journals accounts of human impact on our local shoreline. They use this text to start to understand how to begin to form an argument to support their findings.

Day 3: In the science class, a group of experts from Save the Bay visit the classroom. They bring local maps of the area for students to explore water relationships. Students have the opportunity to examine these, ask questions and better understand the interconnectedness of local water systems and how they impact each other. They continue to take notes in science journals to help them develop new lines of inquiry to investigate.

In the math classroom, students add their new data information about local water systems and use it as a data model to explore graphing new field data as a scalable model to understand larger issues in the state of California.

In the art classroom, students use peer feedback to inform their next steps in creating their original artworks. Students discuss the added layer of meaning to artwork through choice of materials. They take a trip to the tinkering lab where they experiment and explore a with a variety of objects and materials. Students make reflective notes on drawings to inform materials, design and construction ideas they explored in the tinkering lab. Together they begin to plan next steps for construction, materials needed and tools required.

In the Language Arts Class, students are divided into 2 groups that will debate the issue of human impact on the local shoreline. Through the action of debate, the data collected from science class and the background of journalism text, they will foster an understanding of what persuasive writing and begin building the foundations of an argument.