



2015-2016 School Nominee Presentation Form

ELIGIBILITY CERTIFICATIONS

School and District's Certifications

The signatures of the school principal and district superintendent (or equivalents) on the next page certify that each of the statements below concerning the school's eligibility and compliance with the following requirements is true and correct to the best of their knowledge. *In no case is a private school required to make any certification with regard to the public school district in which it is located.*

1. The school has some configuration that includes grades Pre-K-12.
2. The school has been evaluated and selected from among schools within the Nominating Authority's jurisdiction, based on high achievement in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental education.
3. Neither the nominated public school nor its public school district is refusing the U.S. Department of Education Office of Civil Rights (OCR) access to information necessary to investigate a civil rights complaint or to conduct a district wide compliance review. The Department of Defense Education Activity (DoDEA) is not subject to the jurisdiction of OCR. The nominated DoDEA schools, however, are subject to and in compliance with statutory and regulatory requirements to comply with Federal civil rights laws.
4. OCR has not issued a violation letter of findings to the public school district concluding that the nominated public school or the public school district as a whole has violated one or more of the civil rights statutes. A violation letter of findings will not be considered outstanding if OCR has accepted a corrective action plan to remedy the violation.
5. The U.S. Department of Justice does not have a pending suit alleging that the public school or the public school district as a whole has violated one or more of the civil rights statutes or the Constitution's equal protection clause.
6. There are no findings of violations of the Individuals with Disabilities Education Act in a U.S. Department of Education monitoring report that apply to the public school or public school district in question; or if there are such findings, the state or public school district has corrected, or agreed to correct, the findings.
7. The school meets all applicable federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

U.S. Department of Education Green Ribbon Schools 2015-2016

Public Charter Title I Magnet Private Independent Rural

Name of Principal: Mrs. Lisa Hendrix

(Specify: Ms., Miss, Mrs., Dr., Mr., etc.) (As it should appear in the official records)

Official School Name: Hellgate High School

(As it should appear on an award)

Official School Name Mailing Address: 900 S Higgins Ave, Missoula, MT 59801

(If address is P.O. Box, also include street address.)

County: Missoula County State School Code Number *:

Telephone: 406-728-2402 Fax: 406-542-4098

Web site/URL: <http://www.mcpsmt.org/hellgate> E-mail: ljhendrix@mcps.k12.mt.us

*Private Schools: If the information requested is not applicable, write N/A in the space

I have reviewed the information in this application and certify that to the best of my knowledge all information is accurate.

Date: 1/14/16



(Principal's Signature)

Name of Superintendent: Mr. Mark Thane

(Specify: Ms., Miss, Mrs., Dr., Mr., etc.) (As it should appear in official records)

District Name: Missoula County Public Schools

I have reviewed the information in this application and certify that to the best of my knowledge all information is accurate.

A handwritten signature in black ink that reads "Mark A. Thane".

Date: 1/14/16

(Superintendent's Signature)

Nominating Authority's Certifications

The signature by the Nominating Authority on this page certifies that each of the statements below concerning the school's eligibility and compliance with the following requirements is true and correct to the best of the Authority's knowledge.

1. The school has some configuration that includes grades Pre-K-12.
2. The school is one of those overseen by the Nominating Authority which is highest achieving in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental and sustainability education.
3. The school meets all applicable federal civil rights and federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

Name of Nominating Agency: Montana Office of Public Instruction

Name of Nominating Authority: Ms. Denise Juneau

(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

I have reviewed the information in this application and certify to the best of my knowledge that the school meets the provisions above.

A handwritten signature in blue ink that reads "Denise Juneau".

Date: 1/14/16

(Nominating Authority's Signature)

SUMMARY AND DOCUMENTATION OF NOMINEE'S ACHIEVEMENTS

Provide a coherent summary that describes how your school is representative of your jurisdiction's highest achieving green school efforts. Summarize your strengths and accomplishments in all three Pillars. Then, include concrete examples for work in every Pillar and Element. Only schools that document progress in every Pillar and Element can be considered for this award.

SUBMISSION

The nomination package, including the signed certifications and documentation of evaluation in the three Pillars should be converted to a PDF file and emailed to ed.green.ribbon.schools@ed.gov according to the instructions in the Nominee Submission Procedure.

OMB Control Number: 1860-0509

Expiration Date: March 31, 2018



Public Burden Statement

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this information collection is 1860-0509. Public reporting burden for this collection of information is estimated to average 37 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The obligation to respond to this collection is required to obtain or retain benefit P.L. 107-110, Sec. 501, Innovative Programs and Parental Choice Provisions. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the U.S. Department of Education, 400 Maryland Ave., SW, Washington, DC 20202-4536 or email ICDocketMgr@ed.gov and reference the OMB Control Number 1860-0509. Note: Please do not return the completed ED-Green Ribbon Schools application to this address.

PART II – SUMMARY OF ACHIEVEMENTS

Hellgate High School, Montana

Achieving Excellence in Sustainability

Hellgate High School is set within the wilderness of the Rocky Mountains. The community of Missoula is surrounding on all sides by National Forest land and mountain ranges. To the north is the Rattlesnake Wilderness Area, to the west is the Frank Church Wilderness Area and to the east is the Bob Marshal Wilderness Area. This community has a profound relationship with the natural environment that envelopes it. Natural stewardship and conservation of the land is a principal value maintained by the community. In many ways Hellgate High School is an extension of the ethos of care for the environment and nature held by the community. The school works to foster sustainability through facilities, wellness of the entire school community and through learning.

The school has a long history of sustainable practices. In building a culture of sustainable practices the school serves as a regional model for sustainability. The sustainability initiative at Hellgate High School utilizes both specific targets strategies and broad programming approaches. Through this focus on sustainability the school works to build and sustain an operating culture based on sustainability practices and values. The program is guided and driven by student engagement. Hellgate High School's environmental group is active and committed to creating a more sustainable school. Students Against the Violation of Earth or S.A.V.E. functions as the main driver of sustainability within the school. The S.A.V.E. student group contains four working committees. These committees consist of the recycling, composting, gardening/earth week and grant writing. Each of these committees has a student chair with supporting member students.

Through the presence of this group the entire student body is actualizing a high degree of civic engagement and civic leadership specific to sustainability. This students group is transforming their school and learning experience in order to foster a more sustainable future. Through the actions of this student group, all students at the school are becoming aware of topics and issues related to sustainability. By empowering others through their student leadership they are empowering others to take action towards the issues facing the school and the broader community. Through assuming different leadership roles within the school students have the opportunity to learn about and experience sustainable behaviors and practices.

The school has aligned itself to the three pillars contained within the Green Ribbon Schools program. The first pillar of reducing environmental impacts and costs has occurred through a well-developed recycling and resource efficiency program that includes solar panels and the use of an Earth Tub composter. The school has used its energy audit and data collection as a basis for ongoing analysis. The resulting analysis has led to the creation of an Energy Management Plan. The management plan is the result of many hours of planning, data analysis and behavioral change. In reducing waste the school is using resources more efficiently and empowering student to experience what waste reduction looks like in action. Waste reduction is tantamount to reductions in consumption. As the school continues to analyze the data received from its energy audit it continues to develop and implement specific energy conservation practices. Through careful documentation of energy use and resource conservation the school demonstrates its commitment to energy conservation and waste reduction. Through the work done in this initial year of programming for Green Ribbon Schools we know future data will show significant decreases in energy consumption thereby reducing the school's environmental impacts and costs. Strategies for energy reduction have been identified and the school is taking steps towards



achieving even greater facility efficiency.

In addressing the second pillar of improving the health and wellness of student and staff, the school continues to apply a multifaceted approach to wellness that includes incorporating strategic nutrition initiatives, improving student activity levels and developing emotional wellness programming. These activities serve to benefit and improve the overall school wellness. Given the interdependent linkages shared between the three pillars this pillar focuses on provide for the needs of the individual's health and wellbeing.

Curriculum integration is an ongoing and reflective practice within the sustainability program. Through achieving the third pillar which consists of effective environmental and sustainability education, students have engaged in experiential and place-based learning activities which enable them to incorporate sustainability topics into their lived experience. Through careful attention to scaffolding and the developmental needs of students this program will ensure that all students receive sustainability education that is meaningful, applied and ultimately transformative. Through support and mentoring from our strategic partnership with the University of Montana's Department of Curriculum and Instruction the school has achieved professional development that has led to both vertical and horizontal alignment of sustainability curriculum. Helping students to see how their actions impact both themselves and others will be a primary goal of the program. In demonstrating the ways in which our behaviors shape our environment both now and in the future students will be changed through sustainability programming. A particular strength of the curriculum at Hellgate High School pertains to STEM integration of sustainability topics in building 21st century competencies. School leadership on part of students plays a primary role in maintaining an inquiry-based learning approach to sustainability education.

Through partnerships with the University of Montana and various other community-based organizations our program will have the support it needs to succeed. The school has created numerous relationships with local non-profits that focus on wide variety of sustainability-related topic areas. The school has documented and demonstrated the success of its program through fidelity to the Green Ribbon School framework and structure. Through a reflective and deliberative process the needs of our school community and the broader community are being achieved through the ongoing sustainability programming that is occurring at the school.

PART III – DOCUMENTATION OF STATE EVALUATION OF DISTRICT NOMINEE

Pillar I: Reduce Environmental Impact and Costs

Element IA: Energy

The Energy/Facilities program is focused on increasing energy efficiency within Hellgate High School. Our primary energy consumption needs arise from using energy derived from electricity and natural gas. Improving energy efficiency in the building that was first erected in 1908. The facility is more than 245,000 square feet in size and has undergone several major renovations over its 107 year history. The approach taken by the Energy/Facilities Committee is to identify areas in our school that could become more energy efficient and program for that reduce in use. Increasing energy efficiency is reducing electricity usage, decreasing the school's contribution to climate change, and saving the school energy costs in the facilities budget.

One of the major achievements of the facilities team was to draft a comprehensive remodel of the school that incorporated passive solar light and other important green/ecologically aligned retrofits. The facilities committee successfully integrated within the plans for the failing and antiquated boiler system to be replaced with a more efficient heating delivery system. The other major contribution to sustainability within the plans was to increase the amount of solar panels that the school has. The plan calls for the entire south facing roof to be retrofitted with solar panels in the facilities plan. This plan includes an entire remodel of the school that



focuses on improving the learning environment through opening spaces, increasing passive solar light, updating heating systems and replacing the failing boiler. The identified replacement boilers would be about as large as a commercial freezer as compared to the 20 feet tall boilers that currently exist at the school.

A direct action being committed at the school to reduce energy waste and consumption is to monitor energy use using EPA's energy start portfolio manager. The school currently has an average rating score of 77. The school is currently in the process of applying for Energy Star certification.

Strategies for energy conservation and improve efficiency consist of having integrated light sensors in all of the gyms and many of the classrooms. Utilizing smart power strips with load sensing technology in the computer labs and offices. The school has also improved some existing light fixtures to both LED and T5 fluorescent light tubes.

As a result of the work of Hellgate students and staff the school was awarded a grant from Northwestern Energy. The \$14,000 grant and donated materials from local businesses allowed the school to purchase 12 solar panels that consist of a 3kW energy production system. Although the solar panels produce only a small fraction of the several thousand kilowatt hours the school consumes monthly, it provides a powerful learning tool and symbolic representation of the necessary transition required towards green energy sources. This strategic initiative within Hellgate sustainability program allows science students real-time updates on solar power generation through an internet link to the panel's supply monitor. The placement of the panels facing one of the main streets within the community serves as a strategic reminder to the community about the efforts the school is making toward sustainability. Through community support the \$21,000 cost of the set-up, installation and maintenance was achieved. Below are data of the energy benefits and carbon offsets of the panels.

<u>Description of Savings</u>	<u>Quantification of Savings</u>	
Solar Array Output	3,285	kWh
Solar Array - CO2 Offsets	2.20	Tons of Carbon Annually
Solar Array - CO2 Offsets	4,402	Pounds of Carbon Annually Eliminated
Solar Array - Cars off the Road	0	Cars Taken off the Road For One Year
Solar Array - Gasoline Equivalent	227	Gallons of Gas
Solar Array - Tree Equivalent	66	Trees Cleansing the Air For One Year
Solar Array - Tree Planting Equivalent	2	Trees Planted for Life
Solar Array - Average Homes Powered	0.37	Homes Powered for One Year
Solar Array - Average Lightbulbs Powered	28.13	Lightbulbs Powered for One Year

Element IB: Water and Grounds

One area of particular strength within the Hellgate High School sustainability programming is its use of water. The water conservation of the school is evident in a variety of areas. One of the most visual and important achievement related to sustainability at the school are the five water filling stations located throughout the school. Over the last three years the senior class has donated 1-2 water bottle filling stations. This practice has offset the amount of plastic water bottles used at the school significantly. One station recorded 23,000 fills over a period of 10 months. The gardens around the school are landscaped with drought resistant native trees, bushes and plants to as to minimize water consumption. The remaining lawn areas around the school are irrigated within automatic sprinklers and are set to go off at 2 am in order to minimize evaporation.

Element IC: Reduced Waste Production

One of the strongest programs for sustainability within the school is the recycling program. Each week an



average of 18 students from the S.A.V.E. group gather recycling from the 20 student accessible color coded bins around the school. Students collect paper, plastics of all types ranging from #1-7, aluminum and glass for recycling on Thursday's after school. In order to accomplish this level and array of recycling on the part of the school the student group switched providers. The student group created a recycling map that identifies where the bins needs to go in order to return to their designated proper location.

One of the strategies used by the S.A.V.E. to build a culture of recycling within the student body at Hellgate was to create an incentive program. At lunch S.A.V.E. members would offer candy to students who recycled. Another mechanism for promoting recycling within the school was to create partners with teachers offering extra credit for supporting the program and through programs such as National Honors Society. In order to make sure the recycling program was effective in achieving its goals, students within the group conducted numerous audits to determine what was being thrown into the garbage and what was being recycled. This process allowed the group to gain valuable insights into the culture and practices of the school community related to recycling.

For years the school has implemented a strong recycling program. This commitment has shaped an ethos and organization culture of recycling and sustainability within the school. Each month the recycling materials are weighed and measured. The recycling is then taken to the recycling center. The amount of paper and cardboard that the school recycles is immense, each week an entire 3 cubic yard dumpster of both paper and cardboard is recycled. In addition to paper recycling bins located in the hallways and offices of the school, each classroom has a paper recycling bins. Students from different vocational education programs collect the paper for recycling every Wednesday. The school received a mini-grant from the Montana Department of Environmental Quality which is used to funds the recycling program and purchasing of new bins. The recycling program also sells pumpkins that are donated from a local urban farm nonprofit to fund the program.

Weekly Average of Recycling Weight and Volume

Plastics = 15 lbs – 10 (55 gallon bags)

Aluminum = 5 lbs – 2 bags (55 gallon bags)

Glass = 4 lbs – 1 bag (55 gallon bags)

Monthly Garbage Created by the School

Average of 36.607 cubic yards of waste per month

Monthly Recycling and Garbage Rate per Student

Average of 2.08 cubic yards of recyclable material per month

Recycling Rate = $(2.08/36.607) \times 100 = 5.706$ cubic yards

Monthly waste generated per student = $(36.607/1200)$: 0.0305 cubic yards

Composting and the Earth Tub

A component of the waste reduction at the school is the composting program. The composting program has taken tremendous strides with the inclusion of an Earth Tub composter. The Earth Tub is capable of composting as little as 40lbs or 500lbs of food a day. The Earth Tub was awarded to Hellgate High School by the University of Montana Dining Services. The school conducted an audit of food waste at the school and determined that the amount of food and paper waste created at the school would be enough to supply the earth tub. The school is planning to finalize the installation of the earth tub in the Spring of 2016 for full operation. The student group plans to provide its rooftop gardens with compost from the Earth Tub and to sell the remaining compost to the community at a discounted rate in order to support the many sustainability initiatives the school program is running. As food and organic waste shifts from going to the trash bins the school hopes to further decrease the amount of waste generated at the school. The composting program was awarded a grant from the Montana Lt Governors SMART Schools Challenge.

Recycling and Reusing Furniture and School Supplies

An important practice conducted at the school is reusing school supplies and materials. Currently half of the desktops and furniture tops are made from recycled materials. Every year the school custodial staff replaces necessary desktops. Instead of replacing the entire desks recycled materials are used to create a new desk top. The S.A.V.E. group also promotes the practice of reusing learning supplies such as 3 ring binders and notebooks. At the end of every year students are encouraged to place unwanted materials in bins and carts around the school. The contents of the bins are then sorted and categorized. Students then have access to those items when school starts in the again next year. Teachers and students throughout the school reuse paper for scratch paper or other items.

Element ID: Alternative Transportation

Hellgate High School uses many forms of alternative transportation to reduce the energy and carbon impact from vehicles coming to and leaving the school. One of the main forms of alternative transportation that is used is the public buses. Students use the public buses free throughout the community. The partnership created with the Mountain Line Public Transit allows students to access the community at different times through the week as they need. The convenience and consistency of the public bus schedule allows students to not depend on having their own vehicles for transportation. Over 40% of the school community used public or school buses each day. Given the location within the community of the school, bike transportation is widely used in the Fall and Spring months. More than 100 students cycle to school during those months.

The school developed an effective parking plan that focuses on improving student safety and reducing idling cars. By reducing idling cars and having a more efficient system in place to pick-up and drop-off student emissions are being reduced, safety is improved and overall wellbeing is benefited. This very simple but effective task improved the health and wellbeing of the school community, while ensuring GHG reduction and improved energy efficiency in terms of gasoline expenditure.

Pillar II: Improve the Health and Wellness of Students and Staff

Element IIA: Environmental Health

Understanding the energy sources, heating systems and air ventilation systems at the Hellgate High School was a huge undertaking. Through this sustainability initiative the school now has a much better understanding of the different systems that interact to run the school's air and heating processes. Hellgate High School was originally built in 1908. From 1935 to 1992 there have been five major renovations and additions. With each construction/renovation process new systems have been added that interact with existing systems. These systems serve a facility space of 245,694 square feet. There are three sources of heating within the building. Steam heating constitutes 75% of the heating that occurs in the building. Electric serves to provide the building with 5% of the heat generated and water serves to heat 20% of the building. Both gas and electric energy sources are used to generate the heat needed for the building. Given the variance in sources of both energy and heating mechanisms there are multiple heating delivery systems.

The school works hard to ensure the environmental health and wellbeing its school community. The school utilizes support from local, regional and state entities. The school uses a variety of approaches to pest management that includes the use of peppermint oil and other non-pesticide based strategies. In using this management approach the school will work to make effective decisions that minimize pests and reduce potential for reoccurrence of pests in the future.

Safeguards are put in place to ensure that neither staff nor students have any potential risk exposure to cleaning products. In addition to all cleaning products being secured in a locked room, they are also clearly labeled and marked. The school purchasing practices seek to purchase environmentally safe and non-harmful products. The school is putting in place documentation to track the use of cleaning materials.

Air quality within school is a high priority. Each classroom's air quality is regulated and monitored to minimize potential asthma triggers. HVAC maintenance and filter changes occur at regular intervals. The HVAC systems is set to conduct regular system flushes. In this way air movement and quality is ensured for the entire school community. Our school has local exhaust systems for major airborne contaminant sources.

Mold abatement is an important element for the school in ensuring a healthy school environment. When mold is identified the school immediately contacts external mold abatement experts to check and conduct a mold abatement. Given the climate of Missoula this is not a common problem but is addressed when necessary. Facilities personnel inspect the classroom dampers, heating ventilation filters and ventilation fans on to ensure optimal air quality. Healthy air quality is important to the school and efforts are made to ensure that quality. Each classroom's air quality is regulated by a damper and fan. When the head is running a ratio of fresh air is taken in to ensure clear air quality. That damper opening is set and checked on a regular basis to ensure the correct amount fresh air intake.

The school plans to use the IAQ tools to follow the framework outlined by the EPA. Through careful **organization** the school will take steps to create a taskforce that addresses facility/health needs through the IAQ framework. These needs will be **communicated** in a manner that calls for appropriate personnel to **assess** the issues addressed within the school. In conjunction with the personnel the taskforce will **plan** appropriate strategies to **act** to address the issues. Finally both the taskforce and the appropriate personnel will **evaluate** the measures taken to solve the issues pertaining to HVAC, moisture and mold, integrated pest management, cleaning and maintenance, materials selection, source control and energy efficiency.

Element IIB: Nutrition and Fitness

[✓] Our school prohibits smoking on campus and in public school buses.

[✓] Our school has identified and properly removed sources of elemental mercury and prohibits its purchase and use in the school.

[✓] Our school uses fuel burning appliances and has taken steps to protect occupants from carbon monoxide (CO)

[✓] Our school does not have any fuel burning combustion appliances

[✓] Our school has tested all frequently occupied rooms at or below ground level for radon gas and has fixed and retested all rooms with levels that tested at or above 4 pCi/L OR our school was built with radon resistant construction features and tested to confirm levels below 4 pCi/L.

[✓] Our school has identified any wood playground or other structures that contain chromate copper arsenate and has taken steps to eliminate exposure.

Hellgate High School is committed to ensuring the health and wellbeing of the entire school community. Over the last year the school has fully participated in the *Let's Move* program. This has empowered the school take on improving the nutrition of the food served at the school and to increase the activity levels of students. The school has shifted the content of all the vending machines within the building to contain only healthy drinks and snacks. No longer is soda or candy sold at the school. Students at the school participate in physical activities that get them active and in nature. Every year the entire 9th and 10th grade class has a ski day at the Montana Snow Bowl Ski Area. Students also get to snow shoe at Pattee Canyon Recreational Area. An important



partnership that fosters student's activity is with a program called Flagship. Flagship offers afterschool programming that allows students to rock climb, do aerobics and strength training.

The Family and Consumer Science courses provide students with knowledge and experience in making healthy and nutritious food decisions. A new course added this year that aligns with promoting nutrition and fitness is called Sports, Exercise and Health Science. This course allows students to engage directly with the science of human performance and health. These courses incorporate a range of sub disciplines such as anatomy and physiology, biomechanics, psychology and nutrition. Students cover a range of topics while carrying out experiments in both a lab and field setting.

One of the ways that the school promotes a healthy and nutritious diet is through the school garden program. The gardening program consists of 8 large garden bins on the rooftop of the school. The rooftop garden has been placed outside of the library for access to all students. These 4 x 2 feet bins grow a combination of tomatoes, corn, squash and beans. The rooftop garden was made possible through a grant from the National Center for Appropriate Technology. To celebrate the rooftop garden and to promote sustainability at the school each year the S.A.V.E. group hosts a Salsa Party for the school community consisting of the food grown in the garden. The event consisted of a garden tour, visits from community members, bingo games, and newspaper garlic pots to take home. The Salsa Party was featured in the local newspaper called the Missoulian. Having effective community promotion helps to promote school gardens throughout the region. The S.A.V.E. group also takes care of the gardens around the school. In the winter the S.A.V.E. group plants Tulips. When the plants flower they are gifted to the faculty and staff of the school.

Student at Hellgate High School participate with Watershed Education Network. With this program students go on field trips that allow them to hike in the surrounding wilderness, conduct raptor surveys and engage in others hands on learning experiences.

Pillar III: Provide Effective Environmental and Sustainability Education

Element IIIA: Interdisciplinary Learning

In order to foster sustainability literacy through interdisciplinary learning the follow steps have been taken within Hellgate High School. The first step consisted of introducing the initiative to the S.A.V.E. group. Getting their feedback on ideas and suggestions was an important first step. After that the faculty of the school were inventoried regarding how both the content and approach to teaching they engage in relate to sustainability in terms of the three pillars of sustainability; economy, environment and society. Many teachers provided a feedback that indicated much was being done within the school's curriculum that relates and connects to sustainability. Through engaging subject areas using a professional learning community approach different units were created to guide the integration of sustainability into student learning. One example comes from the English/Language Arts (ELA) department. They decided to integrate themes of sustainability into their instruction through the use of the literary classic *Of Mice and Men*. Through the use of *Of Mice and Men* the ELA department was able to make connections to food production, climate, economy, migration, etc. Another example of curriculum integration occurred within the World Language department. This department approached sustainability through the topic of food. By exploring food students were able to understand how culture, climate, environment, policy and identity impact what, how and why people eat the food that they do. In the several biology classrooms student took a sustainability pre-assessment to gauge how their understanding about sustainability with change and grow of the course of the school year. One of the best examples of sustainability education occurring at the school consists of the Environment Systems and Society courses. These courses serve as a dual enrollment science and social studies course. In this course students are provide with a meaningful overview of the relationships that exist between environmental systems and the societies that



depend on them. This course is intended to empower individual students to develop an informed personal response to a wide range of past, present and future environmental issues that they will and are facing.

Element IIIB: STEM Content, Knowledge, and Skills

Science, Technology, Engineering and Math (STEM) play an important role at the school. Our design classes include Engineering Foundations, Welding, Graphic Design, Architectural Design, 3D Modeling and Animation, Intro to Technical Design and Engineering Design + DDSN Technical Drafting/CAD. In total more than 400 students at Hellgate High School participate in design-related courses. This means that 1/3 of the students at the school are developing 21st century skills and competencies. Each of these courses provides students with the skills and knowledge they need to forward the transition to a sustainable society. An important component of Hellgate High School STEM integration occurs through the Finance Academy. Through courses such as Personal Finance, Business, 21st Century Career Essentials, Technology Tools, Accounting, Business Co-op and Banking Practices students gain real world experiences within how math and technology affect their personal lives and society overall. The goal of the Finance Academy is to prepare a workforce that is ready to meet the challenges of the twenty-first century. One of the most important challenges being faced pertains to sustainability. As students develop the skills and aptitudes related to collaboration and critical thinking that will be well equipped to guide that transition to a more sustainable future.

An example of how sustainability is being integrated through design courses can be seen in the participation of Hellgate Faculty in the course called *Engineering Inspired by Nature*. This biomimicry course allows teachers to understand how principles in nature can integrate into design. One of the Design teachers has used these principles to infuse considerations of building materials, principles for nature and life cycle factors in the designing, construction, prototyping and testing of projects. Students are working to integrate design and construction. Through dual credit partnerships with the University of Montana students are taking technical drafting courses in which they draft design in a digital environment, create welded virtual assemblies, factor material properties and run simulations. These experiences are helping to build the skills needed for a sustainable citizenry.

In order to support the multiple computer labs within the school, the facilities planning committee has emphasized the development of high-speed/high-volume fiber optic distribution to breakout spaces for projects, provide for presentations and technology to function in each learning community space, and enhance with robust wireless and hard-wired access points to internet access throughout the building. A key component of the plans for renovation is a space for STEM related projects. The school values STEM and understands its role in shaping our sustainable future.

Hellgate High School has a close relationship with the University of Montana. In October students participated in Montana STEMfest. This two-day collaboration allowed students to work with professionals and professors. This allowed students to engage in possible future careers experience both in terms of business and higher education opportunities. Student also mentored by science professors at the University of Montana to understand and experience how lab experiments are conducted and analyzed.

Advanced Problems in Science is a course that allows students to develop independent research projects in STEM fields. Students work with both academic and professional mentors outside of school to gain real world experience. Student's works with public and private entities such as engineering firms, US governmental agencies and academic institutions.

The integration of sustainability within the science courses occurs through focus projects in the areas of



persistent organic pollutants or climate change. Students develop projects that explore the interdisciplinary components of these topics by reviewing data sets and creating original presentations. In this way biology, chemistry and environmental science are integrated.

Element IIIC: Civic Knowledge and Skills

One of the most important aspects of the sustainability program at Hellgate is Earth Week. Earth week consists of a series of events over the course of a week that Earth Day falls within. One of the events that occur during this week is the Trashion Show. This event highlights sustainability as students create high fashion clothing out of recycled materials and trash. Other events during Earth Week include presentations from community partners such as Garden City Harvest, Americorps, Watershed Education Network, Climate Action Now, 1000 New Gardens, and Home Resources. Each of these community programs plays an important role in supporting the sustainability initiatives at the school. Earth week gives them an opportunity to share their programs with the entire student body at Hellgate High School.

An important contribution of the student S.A.V.E. group was hosting “Montana Crunch Time”. This state-wide celebration focused on recognizing the importance of locally grown foods. During this event the S.A.V.E. group donated Bitterroot Apples to the student body with the help of partners from the regional organization called Food Corps and the school districts Food and Nutrition Services. The S.A.V.E. student group also works with the local community through direct outreach and support. The group has officially adopted the Special Olympics team from Belgrade, Montana.

The integration of community, regional and national leaders of sustainability is an important part of Hellgate High School sustainability programming. On September 29th Scot Horst the Chief Product Officer for the U.S. Green Building Council (USGBC) came to do a day-long visit at the school. During the visit he conducted two information sessions with students in the Auditorium. He toured the school and offered advice regarding sustainable retrofits to the facilities and met with the S.A.V.E. group for a luncheon. The school has also hosted visits from Meghan Oswalt who serves as the Sustainable Operations Coordinator for the U.S. Forest Service, Bill Pedersen the SMART Schools Coordinator for the Montana Department of Energy Quality. Others organization representatives such as the National Wildlife Federation and the Missoula Urban Development Project have presented to students at the school. The Lt. Governor came and spoke to the school to promote the SMART Schools State level sustainability challenge, of which the school became an awardee of for its green projects.

An important aspect of civic and community engagement at Hellgate High School can be seen in the International Baccalaureate program that the school runs. In this program students engage in an 18 month service project. This project is documented and reflected upon over the course of the experience. One example of the project that strengthens international-mindedness is the development by seniors at Hellgate High School of an after school French language program at one of the elementary schools in town.

One way that Hellgate High School students are expanded their global awareness and engagement is through the Global Leadership Initiative at the University of Montana. This initiative creates opportunities for students to ask and address pressing issues of the 21st century while gaining the skills necessary to find the answers. The program gives students access to world-class leaders and provides opportunities to explore society’s questions both locally and around the world. This initiative combined with a vibrant Model United Nations program allows issues related to sustainability to become applied and meaningful experiences for students. Each year students work to promote sustainability by working with Missoula’s Parks and Recreation Department and the Montana Conservation Corps to engage in an outdoor service project. Each year the city identifies the best location for Hellgate students to work. Examples of projects include trail building in

recreation areas around the community. Others examples includes students working to help build homes for Habitat for Humanity.

Hellgate High School Solar Panels



Hellgate High School Rooftop Garden



Hellgate High School Students Enjoying Locally Grown Bitterroot Apples



Hellgate High School – SMART School Award Ceremony



Hellgate High School Earth Week Trashion Show



Hellgate High School Native Plants Garden



Hellgate High School Rooftop Garden Salsa Party Harvest



Hellgate High School Weekly Recycling



Hellgate High School Fall Rooftop Garden Compost Prep



Hellgate High School Boiler Inspection and Maintenance



Hellgate High School Sustainability Lt Governor Guest Speaker



Hellgate High School Earth Tub and Composting Bins



Hellgate High School Student STEM Learning Integration



Hellgate High School Student Created Sign for Willard Alternative High School



Hellgate High School Student Plasma Cutter and pH Exploration Project



Hellgate High School Student Created French Language Program for Elementary Students



Hellgate High School Students Building Trails in Recreation Areas



Hellgate High School Students work with Habitat for Humanity

