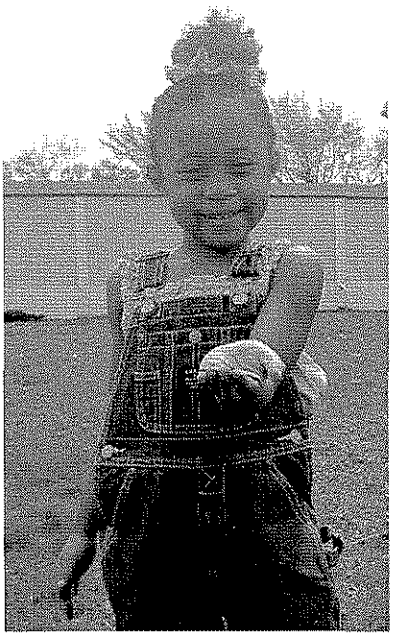
Badger Rock Middle School

Growing Resilient Learners One Project at a Time



Badger Rock Middle School is a year-round charter school -- connected to a neighborhood -- with a culturally relevant, inquiry-oriented, place-based curriculum that focuses on design and environmental sustainability. Badger Rock is an educational system that combines...

- Small school design
- Innovative, multi-age learning
- Vital partnerships with The Center for Resilient Cities, Growing Power, The Center for Investigating Healthy Minds and many others

... to provide middle school students opportunities to learn by doing, learn by achieving, and learn by making a difference.

At Badger Rock Middle School a resilient learner is one who can call on inner strengths and outside resources to keep moving forward -- creating solutions for a changing world.

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With this school kids will learn about the land – and about what they can contribute to their family, to their community - they can grow vegetables, make dinner for their family and feel like they can make a contribution.

(Hispanic resident and parent, Moorland-Rimrock)

August 4, 2010

Superintendent Nerad, President Cole and Members of the Board,

Please accept this detailed proposal for Badger Rock Middle School, a project based charter school proposed for South Madison, which focuses on cultural and environmental sustainability. As you know, our charter school concept is part of the larger Resilience Research Center project spearheaded by the Madison based Center for Resilient Cities (CRC), bringing urban agriculture, community wellness, sustainability and alternative energy education to South Madison and the MMSD community.

We are proud of the work we have been able to accomplish to date and the extraordinary encouragement and support we have gotten from the neighborhood, business and non-profit community, local and national funders, and MMSD staff and Board. We are confident that Badger Rock Middle School, with its small class size, collaborative approach, stewardship and civic engagement model, will increase student achievement, strengthen relationships and learning outcomes for all students who attend, while also offering unparalleled opportunities for all MMSD students and faculty to make use of the resources, curriculum and facility.

Our stellar team of educators, community supporters, funders and business leaders continues to expand. Our curriculum team has created models for best practices with new templates for core curriculum areas. Our building and design team has been working collaboratively with architects Hoffman LLC, the Center for Resilient Cities and MMSD staff on building and site plans. In addition, outreach teams have been working with neighborhood leaders and community members, and our governance team has been actively recruiting a terrific team for the governing board and our fundraising team has been working hard to bring local and national donors to the project. In short, we've got great momentum and have only begun to scratch the surface of what this school and project could become.

We are submitting the proposal with a budget neutral scenario for MMSD and also want to assure you that we are raising funds to cover any contingencies that might arise so that additional monies from MMSD will not be needed. Our planning grant from DPI has recently been approved, seeding the school $175,000 in planning grant monies immediately, with another $175, 000 to arrive before the school opens in August 2011.

We ask for your full support of this proposal and the creation of Badger Rock Middle School. BRMS will surely be a centerpiece and shining star of MMSD for years to come.

Thanks for your consideration.

Sincerely,

Badger Rock Middle School Planning Committee

VISION AND PHILOSOPHY

Mission

Badger Rock Middle School (BRMS) will prepare our diverse student citizens to meet the challenges of the 21st century, helping them thrive as environmentally responsible, justice-oriented problem solvers and life-long learners. Our interdisciplinary academic program thrives on authentic, community, project based learning at its core, with ecological systems as our comprehensive framework. Badger Rock Middle School will be a model for environmental sustainability, culturally relevant teaching, stewardship and civic engagement, integrating best practices in sustainability education, design, and systems thinking into every aspect of the learning experience.

Badger Rock Middle School: Growing Resilient Learners One Project at a Time

Vision

Badger Rock Middle School (BRMS) is a project-based charter school focusing on environmental sustainability developed in partnership with Madison Metropolitan School District, Madison based Center for Resilient Cities, internationally recognized organization Growing Power of Milwaukee, Center for Investigating Healthy Minds and a host of community partners. The school is one piece of a larger center for sustainability and urban agriculture education called the *Resilience Research Center*. The school will be located on a four-acre property in south Madison on a campus with a vibrant working farm, a Neighborhood Center, café, and adjacent City of Madison park.

Badger Rock's vision is to empower its students to thrive as citizens, entrepreneurs, leaders, collaborators and innovators, working to restore the natural world and better the cultural environment while creating just, nourishing and sustainable communities. The on-site farm, sustainable energy demonstration site and surrounding environment will serve as a living lab for students, allowing them to learn side by side with professionals, mentors and community members. Community partnership, learning and citizenship are crucial elements of the school's overall vision to increase student engagement and strengthen relationships and learning outcomes. With passion, a healthy, informed optimism, and a well-stocked tool kit, students from Badger Rock Middle School will become our future leaders, reshaping our communities in socially, ecologically and economically sustainable ways.

The school will engage all members of the learning community in authentic experiences meant to help students, staff, and the community explore issues of sustainability, local culture, interdependence, social justice, and global awareness. The school will combine the best features of traditional and innovative curriculum, propelling students to think critically and strategically, solve problems creatively and collaboratively, and gain knowledge and skills to be catalysts and change agents in their communities. In doing so, the school will meet and exceed all local and state academic standards and create a dynamic new model for holistic education based upon principles of sustainability.

Philosophy

Badger Rock Middle School is built upon a holistic educational model, which helps students develop knowledge, skills and attitudes they will need beyond their formal schooling to become engaged citizens who can respond effectively to dramatic global change. This philosophy is based upon an organic worldview that recognizes the universe is made up of interconnected parts and systems

that can only be fully understood in relationship to one another. This systems thinking approach will help students understand the complex interactions between natural and social systems, and develop strategies that facilitates student interests and investigations. Our purposeful approach is based upon authentic real world experiences, is rooted in place and tradition, and engages the whole person to think critically and live with compassion, energy and purpose.

Our school's philosophy is a participatory, inquiry based learning model, which places a strong emphasis on helping foster social change within the local community. Our place-based curriculum provides relevant and meaningful service learning and community collaboration experiences for students, outside in our gardens in partnership with Will Allen and Growing Power and beyond the classroom walls. The school's curriculum is both theme based and interdisciplinary, with a blurred line between typical "subjects" and a strong emphasis upon nurturing an ethic of caring, between students, staff, families, people of diverse cultures and between diverse species.

Using the Environment as Integrating Context for Learning model (EIC), our school will use the natural and cultural environments as a comprehensive focus and framework for learning in all areas, general and disciplinary knowledge, problem solving, thinking skills and basic life skills.

B. Description of how the proposed charter school supports and advances the mission, vision and strategic priorities and goals as established by the School Board, including a description of how the proposed school aligns with and advances the District's Educational Framework and the Framework's key principles of student engagement, relationships, and learning.

Badger Rock Middle School supports and advances the mission, vision and new strategic priorities and goals adopted by the School Board in September of this year and advances the District's Educational Framework and key principles of student engagement, relationships and learning in a number of compelling and innovative ways. Badger Rock Middle School will build upon the district's strengths, providing a model that can be adopted and incorporated into other district schools. In addition, the proposed charter school will proactively advance and support the district's upcoming Food and Sustainability Initiatives, providing opportunities to pilot key components of these initiatives, including local garden to school lunch programs, among others.

The Badger Rock Middle School (BRMS) curriculum and its alignment with district mission, vision, strategic priorities and goals can be understood most clearly by seeing it from a variety of perspectives.

***District Perspective*:** MMSD School Board members, administrators, and curriculum specialists will find our curriculum coherent and consistent with MMSD's Strategic Plan, Educational Framework, and grade-level standards. BRMS staff will work with these documents during both planning and operational stages, and accept the responsibility to make our curriculum understandable from this district-wide perspective.

***Staff Perspective*:** Working in professional learning communities, teachers and support staff will experience the curriculum as a complex system, some parts of which will be more traditionally scheduled and very stable (such as the core mathematics curriculum), while other components (such as projects undertaken with local partners) will be emergent and require design process and project management skills and strategies. Distributed teacher leadership will engage staff in efforts to ensure flexibility, collaborative team teaching, reflective practices, timelines, feedback loops, and rapid prototyping. Staff will continuously assess student performance through skills-based formative and summative assessments and adapt the standards-based curriculum and instruction to assure that students are acquiring required skills and knowledge.

Student Perspective: Students will most often experience the curriculum as a set of projects undertaken to meet real-world challenges, a way of thinking perhaps very familiar to them from their day-to-day experiences including playing video games, seeing the world as a set of complex systems which they can explore, understand, and influence. Students will read, write, and "do" math, science, and social studies every day, but progressively see these more as authentic actions than as school subjects. Multi-age classrooms, cooperative teamwork and real-world projects will prompt students to experience BRMS as a work community. Students will deeply appreciate the instructional variety at BRMS, as they alternate between traditional classroom work, collaborative projects, educational games, fieldtrips, and hands-on activities with our Badger site partners. Through these activities, student's abilities and needs will be well-understood by their teachers, who will ensure that every individual is both challenged and supported to reach their full potential.

Community Perspective: Parents will have a permanent invitation to participate in school learning projects, which will be intentionally designed to be collaborative and community-based. As students observe, survey, interview, map, and otherwise document their families, neighborhoods, and nearby natural habitats for homework assignments, their parents will discover that family knowledge and values are highly regarded in the BRMS curriculum. Businesses, not-for-profits, and neighbors will view the BRMS curriculum as a context for working with staff and students who have energy for physical and intellectual work and commitment to designing and implementing sustainable solutions.

Thoroughly integrating our pedagogical vision with district plans and frameworks will require time for additional consultation with MMSD staff and the resources that a planning grant from the Wisconsin Department of Public Instruction could provide. Nonetheless, our initial research and formulation prompts us to believe that we will be able to immediately pilot much of what is called for in the 2009 MMSD Strategic Plan. Consider how some of our strategies already map with the five "Curriculum Action Plan Focus Areas":

ADVANCING THE MISSION, VISION AND STRATEGIC PRIORITIES

Accelerated Learning: The Strategic Plan asks for "a sequenced learning pathway accessible to all students that supports each student to proceed to the next level of achievement, regardless of grade level or age, at the learning rate appropriate to their needs [and] targeted learning options that allow students to close achievement gaps as quickly as possible by providing intensive, research-based instruction specific to their learning needs." The Educational Framework makes clear that accelerated learning requires student engagement, high expectations and academic rigor, and positive relationships. Some of our approaches may include:

Multi-aging (6th, 7th, and 8th graders in the same classroom for three years) provides ongoing opportunities for any students to show leadership and demonstrate their expertise to other students –not only through academic mentoring, but also showing how things are done (e.g. research protocols, use of technology, classroom culture). Once well established, the long-term relationships in a multiage classroom create a positive and collaborative learning environment where moving to "the next level of achievement" is supported and honored.

Place-based projects deeply engage learners by providing authentic challenges, opportunities for choice, culturally- relevant contexts for understanding facts and skills, and a great variety of tasks that can appeal to all learning styles. High expectations and deadlines are experienced not as arbitrary requirements created by teachers but as real-world limits inherent in the challenge itself.

Students expect their classmates to complete their individual tasks that build toward a final product (e.g. media, community action).

Games that are technology based are deeply engaging for middle school students and structure "a sequenced learning pathway." UW Professor Kurt Squire, co-director of the premiere University program devoted to games and learning, will serve on our advisory board, guiding us in our selection of educational video and place-based games and the creation of a game-coherent pedagogy. With his guidance, and additional involvement of other faculty and graduate students in the Games + Learning + Society Initiative, we confidently expect BRMS to be a leader in the integration of individualized and social learning in games, standards-based accelerated learning, and design-based classroom projects, all of which lead to higher level thinking.

Civic Engagement: We embrace the Strategic Plan's expectation that MMSD students will have "the knowledge, skills and experiences to participate in a democratic society," something that will happen as we "directly connect their learning to the civic responsibilities required in a democratic society." We understand why the Plan's first action step is to "Research effective, culturally relevant standards-based practices in Civic Engagement (e.g. service learning, participatory education and democratic classrooms)," since it envisions developing curricula for the entire district; however, we believe our planning team and advisory boards have the experience and expertise to immediately put the Plan's vision into practice in one school.

Service learning is built into the center of our curriculum, where civic "knowledge, skills and experiences" are deeply embedded through the core experiences of all students. Our sustainability projects (social and environmental needs met by social action) are all service learning projects. Direct action and service to others helps students gain essential life skills while discovering that they can be an asset to their community.

Local projects usually have the best potential to engage the hearts and minds of middle school students. Local community needs can be directly experienced; nearby issues, groups, and events are close enough and often of small enough scope for students to understand and influence; students are able to make decisions as they design and implement plans; and the results of their engagement can be assessed and honored first hand.

Community partnerships, with the Center for Resilient Cities and other organizations, will provide contexts, models, and mentors for civic engagement. Other important civic relationships will be established as students interview neighbors, conduct surveys, and organize workshops or other events.

Cultural Relevance: Culturally relevant teaching is a term created by UW Prof. Gloria Ladson-Billings, a member of our advisory board. The Strategic Plan quotes her as saying, "Culturally relevant teaching is a pedagogy that empowers students intellectually, socially, emotionally and politically by using cultural referents to impart knowledge, skills, and attitudes." BRMS embraces the various actions steps of the Plan, such as the expectation to have a "Standards-based curriculum to incorporate and reflect the cultural backgrounds of district students" and the requirement that classrooms "evidence positive images and cultural references (arts, curricular materials, teaching resources) for all learners." Our approaches will include:

Guidance from Prof. Ladson-Billings and from MMSD teachers Kira Fobbs and Diane Coccari (known in our district for the passion and precision of their culturally relevant teaching) will inform and guide the planning and implementation phases of this initiative in regards to culturally relevant teaching pedagogy.

Place-based homework, where students document nearby cultural and environmental communities, and then exchange this information with their classmates, will bring the cultures of their families and neighborhoods into the curriculum. Students may also exchange this information electronically with students outside of Madison with similar interests. All students will have their languages, practices, traditions, expressions, and beliefs regularly referenced and valued in their classrooms.

Local projects and place-based homework will provide regular opportunities for teachers to more deeply experience the cultures of the school community.

Parents, neighbors, and other community partners will be invited to lead, support, and participate in school projects and activities. Because BRMS is located in a multicultural community and will have parents from multiple backgrounds, students will have positive relationships with respected adults from many backgrounds that role-model and support the development of a student's social, psychological, and academic wellness.

Assessment: BRMS students will participate in district-wide testing and staff will use a variety of formative and summative standards-based strategies common in other MMSD middle schools to assess and support student learning. Teachers, students, parents, and administrators need to continually assess student's conceptual understanding and skill development through authentic and relevant assessment. Our distinctive approaches are totally aligned with the Strategic Plan's call for "Measurement strategies that are aligned with the primary goals of instruction [which] may include: portfolios, lab practical exams, performances, long-term projects, and public exhibitions" and for the "Use [of] assessment data to make continuous improvements at the classroom, school and district levels." A few examples:

Multi-age classrooms When teachers know students more deeply over time, their informal observations during regular classroom events may be more insightful. Comments, physical actions, and student texts may gain more interpretive value when teachers engage with students more deeply over an extended time frame. By taking a longer 3-year view for each student, teachers will feel they have time to pay more attention to things they are not required to or are unable to assess (e.g., cultural competence is a critical success factor, which all teachers can support).

Project-based learning requires varied informal types of assessment. The Strategic Plan wisely includes "portfolios, lab practical exams, performances, long-term projects, and public exhibitions" as possible strategies for measuring individual learning. Suppose a classroom has just completed a whole-class extensive survey of energy-efficient transportation (e.g. biking and walking paths, bus routes and schedules, car pooling) in the larger community. Individual learning in this project can be effectively assessed not only by reviewing the contributions of individual students but also by having them use this classroom model to survey transportation in their own immediate neighborhoods. Design-based project learning requires persistent feedback to improve both the design process and the product. Team reflections and often user testing are needed at every stage and revision, a cycle of research and mockups and prototypes leading to a final product. The complexity of projects allows teachers to assess students' performance on advanced standards (e.g., understanding of complex systems).

Embedded game assessments will allow BRMS students to receive immediate feedback on their game performance and eventually allow teachers to digitally track players' choices, amount of time spent on specific tasks, and other variables. This strategy increases the amount and timeliness of feedback for students, and the amount of quantitative data on student performance, all with little or no teacher time required.

Flexible Instruction: According to the Strategic Plan, "Flexible instruction (e.g. differentiation, universal design) provides students with different ways to learn content, make sense of ideas and demonstrate understanding. Flexible instruction is responsive to individual student strengths and needs through learning experiences that are relevant and engaging, and require critical thinking from all students." The action steps for this plan are very compatible with our proposed school. Indeed, the "visible result" for one step sounds like a blueprint for BRMS: "Instruction will include multiple options for student learning (e.g. open ended tasks), range of instructional methods (e.g. simulations, project-based), and assessment strategies (e.g. demonstration, portfolio) in all classrooms." But how do some of our strategies mentioned above fit with flexible instruction?

Place-based projects, if extended and well designed, can offer a myriad of ways to learn and present content. For example, many students deeply appreciate being able to learn outdoors, while walking around, while interviewing, while exercising choices. Other students dislike talking to people and prefer taking pictures, or even dislike being responsible for choices and prefer being told what to do. Hearing and sight impaired students, students using wheelchairs, or students struggling with literacy and numeracy have other needs for differentiation that can be accommodated in a complex project, especially in a multiage classroom where students are used to giving and receiving help. In the classroom, students benefit from active participatory learning by designing a presentation with stories, or visuals, and perhaps technology. With planning funds from the Department of Public Instruction, we hope to retain the services of experienced project-based teachers to mentor teachers as the school starts up, as many teachers may not have familiarity or extensive experience with place-based projects. After a few years, students will pass on project learning skills to younger students in our multi-age classrooms, and our full-time teachers will pass on to new teachers the project management skills that they have learned from mentors and experience. Current and recently retired teachers on our advisory board (Youngerman, Spitzer, Mathews, Fobbs, Affeldt, Domini, and Wasserman) are all highly skilled in project-based teaching.

Authentic projects will be designed to fit within a framework that can be re-used, modified or re-designed overtime, so that teachers are not expected to redesign afresh with each project. A thoughtful framework would allow students to begin taking on design responsibility when they become comfortable with repeated use of a rich and fruitfully designed framework. Finding appropriate challenges and necessary community partners, aligning activities and standards, drafting guidelines for students, and arranging fieldtrips, just for starters could wear out even the most energetic teacher. Flexible instruction with projects will be most possible at first in a charter school. Since teachers in our charter school will share common approaches to teaching, they can share the work of developing types of projects that can be adapted with each new opportunity. But to get a jump at building sustainable, highly effective, multi-age learning cultures, passed forward through generations of students, we need great projects the first year. Funds from DPI for charter schools can make this possible.

This school will bring people in the community together – right now everyone lives behind closed doors. Parents don't know each other.

(Hispanic parent, Southdale)

Games are a great tool for differentiation. Players make choices of which game to play, how fast to play, who to play with, what roles and tasks to try out, what data (textual, visual, numerical) to access, etc. Game designers are very effective at creating engagement in a place, time, and learning activity. According to a survey conducted by the Pew Internet & American Life Project in November 2007 with partial funding from the MacArthur Foundation, 97% of youth (99% boys, 94% girls) play

video games. That 97% engagement provides an opportunity for us to expand student learning. Games will be selected that best match MMSD standards, assist differentiated teaching and relate specifically to standards within the curriculum. One example of this might be using the game *Civilization* in context with the 6th grade curriculum standard to teach ancient civilizations, while classrooms explore local Indian mounds and the civilizations that built them.

Universal design is a great opportunity for a project in a design-based classroom. Universal Design for Learning (UDL) is a framework for designing educational environments that enable all learners to gain knowledge, skills, and enthusiasm for learning. This is accomplished by simultaneously reducing barriers to the curriculum and providing rich supports for learning. Classes could research universal design guidelines and develop site specific projects at the Badger School site to allow for maximum access and learning support for all users, staff, students, families and community members.

ALIGNMENT WITH DISTRICT'S EDUCATIONAL FRAMEWORK AND KEY PRINCIPLES

The district's highest priority outlined in the Strategic Plan is to create and sustain a learning environment that enables all students to maximize their potential. It is clear from looking at district test scores, middle class flight from Madison public schools, high school dropout rates and other metrics, that there are currently many children whose needs are not being met. Our goal with this charter school is to cultivate the potential of children whose needs are currently not being met because of socio-economic, cultural, or learning style issues, all of which can lead to lack of engagement with the curriculum and subsequent lack of school success. Badger Rock Middle School will strive to serve a healthy mix of students from all socio-economic and cultural backgrounds, and will create avenues for everyone to feel welcome.

Student Engagement

The school will advance MMSD's mission by creating a curriculum with a flexible structure, culturally relevant teaching, and a project-based structure that emphasizes student, family and community engagement. A flexible structure ensures that teachers can adapt their methods and approaches so that all students feel personally engaged in learning. The school will help narrow the achievement gap of students it serves and better engage disconnected youth by creating real world experiences that are driven by student's own interests and questions. True engagement with school comes from feeling connected to one's purpose, finding a keen relationship with the subject matter, and finding personal meaning and ways to relate new learning into one's own life. Engagement also stems from feeling that one's work has meaning and value to others. BRMS will provide ample opportunities for students to share their learning with others and find value in that exchange.

Relationships

Trusting relationships will form the backbone of the learning style at Badger Rock Middle School. Relationships between students, teachers, families and community partners will be emphasized throughout the curriculum and school structure. The very backbone of this project is deep community engagement and strong community partnership with the school across non-traditional lines of collaboration. Multi-age classrooms which encourage mentoring between older children and younger children will be commonplace; collaboration will be the norm not the exception with our long list of community partners; involvement from mentors from UW will be greatly increased, and we'll increase opportunities for family involvement through proximity to school for some students through family cultural gardening activities, and through a family volunteering agreement signed at the beginning of the semester. By initiating this, it is our intent to help parents build a stronger parental support community. This will also empower parents to be proactively involved in their children's learning community.

The relationships among the teachers and other staff in the school will be based on trust, teamwork and mutual support. Teachers must understand or be willing to learn to understand the students they teach and their families, through cooperative learning environment in which teachers work well together. The school staff must be willing to work closely with students and their families to collectively find ways to improve instructional practice and support structures. Further, through collaboration and use of professional learning communities teachers can continue to develop and set high expectations for all students, and then work together to find ways to inspire and support all students to meet and exceed those standards of performance.

Learning
Best practices in culturally relevant teaching, project-based environmental curriculum, along with the strong emphasis on student engagement and strong relationships will provide students with greater opportunities for academic achievement. The school will be a safe and welcoming place for all, where student diversity is celebrated, and woven into the fabric of the school community. All students will be supported to allow them access to the full curriculum, through innovative and flexible approaches to learning that can be easily modified or adapted to meet student needs. This program by its very nature addresses the district's desire for more flexibility and more alternative programs.

Because of partner Will Allen's proven track record for working with disconnected youth and his deep desire to foster passion for learning and growing in young people, we are confident that all students, and especially young black males who attend the school, will find a mentor and mentorship program that fuels their love of learning and gets them deeply engaged with their community. The urban farm collaboration with Growing Power also provides opportunities to expand apprenticeship programs, another stated strategic goal.

C. The underlying theories of research

Environmental education is not a new concept for educators in the state of Wisconsin. According to the Wisconsin Administrative Code [see PI 8.01(2)(k)], "environmental education objectives and activities shall be integrated into the kindergarten through grade 12 sequential curriculum plans, with greatest emphasis in art, health, science, and social studies" if every school district. Furthermore, a press release from the Wisconsin Department of Public Instruction (2009) demonstrates the continued support of the state's educational leaders regarding environmental education:

"In an effort to ensure that every child graduates with the environmental skills and knowledge needed to build Wisconsin's economy and a sustainable future, the Wisconsin No Child Left Inside Coalition will develop the state's first environmental literacy plan."

The release continues:

"Wisconsin schools need robust environmental education programs that not only teach environmental science, but that also stress the need for citizen involvement and solving problems through critical thinking and collaborative working relationships," said Jesse Haney, coordinator of the Wisconsin No Child Left Inside Coalition.

Given the seemingly increased attention on environmental education within our schools, it seems wise to explore the research for signs of effectiveness.

Due largely to the multiple definitions and desired outcomes of environmental education writ large, research on environmental education is fragmented and "disappointingly quiet on the more general question of 'what works'" (Feinstien, 2009, p. 35). That being said, a variety of research on the specific instructional strategies of Environmental-Based Education (EBE)/Place-Based Education (PBE) has brought about consistently promising results in terms of academic achievement and, to a lesser degree, environmental behavior.

In a widely cited report prepared by California's State Education and Environment Roundtable titled *Closing the Achievement Gap: Using the Environment as an Integrating Context for Learning,* Lieberman & Hoody (1998) discuss findings from a study of 40 schools (representing elementary, middle, and high-school levels) located in 12 different states that implemented EBE strategies. Evidence based on survey results, site visits, interviews, and gains on standardized test scores and G.P.A.s suggests that students learn more effectively within a comprehensive environmental-based educational framework than students within a more traditional, compartmentalized educational framework. Observed benefits of EBE focused schools included an increased performance on standardized tests measuring academic achievement, a reduction in behavior issues, and a qualitative change in student engagement and motivation.

More recent quantitative and qualitative studies (Athman and Monroe, 2004; Falco, 2004; NEETF, 2000) document the same benefits, even expanding the range of positive effects. For example, Falco (2004) found that students in 10 middle schools in South Carolina participating in a program that used the environment as an integrating context (EIC) showed a degree of improvement in attendance, discipline, and academic achievement. Powers (2004) notes some especially intriguing initial findings concerning students with special needs and ESL students. Qualitative data indicates that students with a range of special needs perform better during place-based learning activities.

One common and important characteristic of many of these successful programs is that the environment and environmental issues are the focus of the majority of a school's curriculum. Consequently, successful PBE programs utilize several means of connecting students to place. One method gaining recent popularity in the U.S. is the school gardening movement. In a review of 12 quantitative and 7 qualitative studies on gardening projects within U.S. schools, Blair (2008) notes some positive and significant trends. For example, 9 of the 12 quantitative studies demonstrate that students engaged in school gardening programs attain higher science achievement and improved food consumption behavior. Common themes among the 7 qualitative studies include an increase in student bonding and teamwork and an improved school attitude.

Another noteworthy feature of many EBE/PBE curricula is strong tendency towards using student-centered approaches such as project-based learning. Project-based learning is consistent with constructivist approaches to education that assume students need opportunities to construct knowledge by asking and refining questions, direct investigation, interpreting and analyzing information, and drawing conclusions (Rivet and Krajcik, 2004; Blumenfeld et. al., 1991). Scholars in science education appear to be at the forefront of this research. A growing body of literature indicates that Project-Based Science (PBS) yields significant positive results for students. For example, a team of researchers has been working on a large-scale PBS project in collaboration with the Detroit Public School District. Results indicate that a standards-based, inquiry science approach increases standardized achievement test scores, including a decrease in the gender gap among African-American males (Geier et. al., 2008). Equally promising, results from Cuevas et. al. (2005) indicate that an inquiry-based approach to science education for elementary students is effective for promoting students' inquiry ability, including their ability to plan procedures and draw

conclusions. In their study, low-achieving, low-SES, and ELL-exited students showed particularly significant gains in these areas.

The studies discussed above represent some of the larger contributions to the broad field of environmental education research. Individual case studies from a wide-range of school settings document the success of environmental education efforts. We do not want to romanticize the power of EBE, PBE, or project-based approaches as, obviously, no "magic bullet" exists that will address all of the issues faced by our school district. However, a growing body of research leads us to believe that using the environment as an integrative context in the curriculum is both an efficacious and promising strategy.

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D. A description of why the charter school is necessary to achieve the vision.

A charter school is necessary to achieve the Badger Rock Middle School vision for a number of reasons:

Test Scores: Data indicates a need for new approaches. Students in the target demographic of this school are currently falling further behind and their learning needs are not currently being met. Grade point averages from students in the school's target neighborhood average 1.58 for seventh grade and 1.98 for 8th grade, which are slightly lower than the all Sennett 7th grade average of 1.67 and all Sennett 8th grade average of 2.14. *(from Tim Potter, MMSD).* Working with the Center for Investigating Healthy Minds and implementing culturally relevant, authentic, hands-on participatory education with an inquiry based focus and opportunities for real life engagement have great possibilities of influencing disengaged youth.

Smaller Class Size: A charter school would provide a smaller teacher to learner ratio for the middle school level (Our goal is 20 students to one teacher, with a ten students to one adult ratio, when including support staff). In addition, some classes would be further supported by adult volunteers.

Flexible Schedule and Teaching Approaches within A Standards-Based Setting: A charter school would allow the freedom to meet and exceed the state standards, and would support teachers to take different and more effective approaches to engage students in hands-on, project based learning that engages children and makes the curriculum meaningful and relevant to the student's own lives.

Free and Reduced Hot Lunch: The property, located in the Sennett Middle School attendance area, is an area approaching "at risk" conditions, with over 76% of the students in this neighborhood receiving free or reduced hot lunch. Here are current statistics of students south of the Beltline in Sennett attendance area.

Grade 4 - 76%	Grade 6 - 81%	Grade 8 - 78%
Grade 5 - 76%	Grade 7 - 71%	

Neighborhood School=Increased Parental Involvement Prospective students from the neighborhood are currently bussed 45 minutes out of their neighborhoods to Sennett Middle School. Teachers at Sennett report that these students' school and home lives are not naturally connected because of the great distance. For the past two years Sennett has hosted its "all school" picnic in the proposed charter school neighborhood in an effort to connect families with the school. This has met with great success and indicates that a neighborhood school, especially one with an adjacent Neighborhood Center hub could create a higher degree of family involvement.

Timing/Urgency: There is great momentum both locally and nationally for this kind of school/community sustainability and food initiative. Additionally, there is a real urgency for schools across the country to figure out how to be more responsible environmental citizens addressing climate change, and reflect those values in their curriculum. Charter schools provide a fast and flexible way to try out new concepts on a smaller scale before adopting them for a larger district.

Middle Class Flight: Too many middle class families are leaving the district because of a real or perceived lack of options for certain learners who might excel in school. The experiential learning style and charter school concept that would be part of this school culture would appeal to many families who might otherwise look for other options.

Site, Partnerships & Community Collaborations This vision is only possible because of the site, the location and the outstanding community partnerships. The same vision could not happen within an existing school, or on different grounds because of the synergy of the partnerships, the opportunities for on-site service learning, civic engagement and collaboration. A gardening and sustainability operation of this magnitude, run by world renowned professionals, would not be possible on school grounds given District budget constraints.

E. A description of how this charter school is unique and how it will differ from the schools and programs now available to students enrolled in the district.

Badger Rock Middle School has a series of unique features based upon its site, its on-site collaborating partners, its location and the urban farm aspect, all of which make it unique and not immediately replicable at other school sites.

Methods / Approach

- *Collaboration:* The level of daily collaboration with on-site partners Growing Power and the Center for Resilient Cities and community partners is not currently available in the district, nor is this kind of site-specific curriculum.

- *Project Based, Interdisciplinary Learning:* Authentic on-site, field-based projects form the core of the curriculum and help students learn interdisciplinary problem-solving skills and processes. Projects are all standards based and aligned to the Wisconsin Model Academic Standards, but allow for multiple modes of engagement and assessment of learning.

- *Homerooms of multi-age, multicultural, and varied-ability learners:* Multi-age classrooms, with students of diverse cultures and strengths help foster an environment of leadership. Student communities of 20 –25 will constitute small learning communities, where each group member is recognized for what they can contribute and each team member is valued.

- *Assessment*: Student achievement is demonstrated in part by project-based experiences that culminate in exhibits, performances, publications, and public service to the community—something that might be deemed more "real" or meaningful because it has an external, real world audience.

- *Meals serve as learning opportunities:* Students will play an integral role in growing food and preparing nutritious meals for the school community. Urban agriculture is interwoven in to every aspect of the curriculum. Working on-site with *Growing Power*, and the expertise of local working urban farmers, students will learn all aspects of caring for the land, planting and harvesting crops, and preparing meals with the food they grow.

- *Site-based Curriculum:* The curriculum will be intimately tied to the school's building and site and its relationship to the land, the surrounding community, and nearby natural and social resources. The Badger Rock Middle School curriculum's environmental focus will stem largely from an urban agriculture framework. In addition, every aspect of the physical environment including the school building, the grounds, gardens, greenhouses and operation will model sustainability, from building materials, to energy sources, to cleaning products, to meal practices, to waste disposal, to animal care and beyond. Understanding and studying both the natural and built environments will be part of the curriculum. At the same time, students will venture off-site to investigate other parts of the watershed and adjacent watersheds.

- *Curriculum stems from the critical study of three key branches of investigation:*
    - **Sustainability**- cultivating an awareness of how the way we live and work impacts our ecosystem. Urban farming, on-site energy systems and the built environment will be the primary focus during the school's first years.
    - **Place**- instilling a curiosity to examine the factors that have shaped and will continue to shape our place.
    - **Culture**- developing an appreciation for how different cultures adapted to the environment through their celebrations, social structures, food, language, and arts.
- *A Year Round Schedule:* Three week breaks follow each quarter of school with a five week break during the summer. Additionally, a year round schedule affords children the chance to work outside in the gardens during the height of the growing season.

PURPOSE

A statement as to why the charter school is being proposed

Badger Rock Middle School reflects a local and national trend toward rethinking our educational practices, as they relate to individual and community wellness, best practices for engaging students and best practices for promoting civic engagement and citizenship. These ideals are especially important now in light of new information about the threats of climate change. The number one challenge during our lifetime is reconciling the impact of human existence with the limits of our ecological systems. The qualities, depth and extent of learning that takes place globally in the next ten to twenty years are critical to the human future.

The "Great Work" ahead is remaking our human relationship with the earth and rethinking how we provide food and shelter, use materials, earn our livelihood, and protect and nurture our young. Education is the core and is essential element needed to create a generation equipped to respond to these enormous challenges. The stakes have never been higher for students in Madison Metropolitan School District to become active engaged citizens, who are critically aware, engaged with their neighborhoods, and learning how to work together to change their communities and become stewards of the earth.

Badger Rock Middle School is being proposed because there is increasing demand for this kind of school within our community and district, the climate is ripe for the kind of in-depth sustainability education that only a charter school can provide, the timing and opportunity is right, and the caliber and expertise of community partners that have come together to develop this partnership is truly remarkable. The opportunity to have this charter school at this time in collaboration with Will Allen is something of which other school districts could only dream. Further, the neighborhood and students who would largely be served by this project are some of the MMSD's most needy and challenged youth. We believe creating Badger Rock Middle School can help our school district and community model and chart a progressive approach to sustainability education that responds proactively to these challenges.

LEADERSHIP AND GOVERNANCE

The name and professional qualifications of the person who will be in charge of the charter school and the manner in which the administrative services will be provided

The administrative relationship between the Governing Board and the charter school will be one of mutual support. BRMS will be run on a daily basis by an oversight principal and lead teacher model. The oversight principal will have a regular presence at the school, with scheduled office hours, but will not be on site full time. A lead teacher, who also doubles as the school's learning coordinator, will coordinate the functions of the school when the oversight principal is not on site. The position of oversight principal and lead teacher will be determined after board approval of the charter school and the hiring process has been determined in consultation with MTI.

BRMS Lead Teacher, Oversight Principal and Governing Board will be responsible for making the educational decisions aimed at raising student achievement and meeting the mission, vision and goals of our charter contract. A shared leadership model will be used to make decisions for the school. We will follow a shared leadership model that empowers our staff to offer opinions on school issues such as budget, discipline procedures, building concerns and curriculum before presenting items further to our Governance Board. It is important that our teaching staff follow the democratic, distributed style of leadership in order to promote a positive school climate and develop strong teacher leadership to meet the needs of our students, parents and community set forth within our charter.

The governance structure of the school, including the method to be followed by the school to ensure parental involvement

BRMS will be an instrumentality school within MMSD as delineated in Wisconsin State Charter Law. The BRMS Governing Council will be responsible for the budget, curriculum, personnel, calendar, and policies of BRMS detailed in the Charter School Contract developed between the MMSD School Board and BRMS. The Governing Board will have the authority to make decisions regarding the overall operation of the school as long as it meets MMSD and DPI regulations and policies, unless mutually determined to be exempt from such policies.

The Governing Board will work hard to maintain the existing relationship between MMSD and MTI and work to ensure that BRMS operates under conditions that have been negotiated into the Collective Bargaining Agreement between MMSD and MTI. Any necessary Memorandum of Understanding would be negotiated in full collaboration with MMSD and MTI. Our intent is to be fully compliant with and work as part of MTI structure and be as transparent as possible. During the planning grant phase, we will work with the MMSD and MTI to learn how to best negotiate and work within the collective bargaining agreement and still maintain the autonomy that is necessary to achieve our charter school goals.

The Governing Board will work with MMSD during the planning grant phase to determine which policies can be made independent of MMSD, and which require input and partnership with MMSD policies and standards. For example, BRMS will need to be in full compliance with MMSD procedures regarding student safety, but hopes to have more flexibility in other areas regarding curriculum. BRMS would be developed in full partnership with MMSD staff and administration, with direct oversight from the Board of Education.

BRMS is currently working with a three branch planning committee for its organizing structure. The three Advisory Boards include Educational, Business/Community, and Operational/Site and are overseen by the Executive Committee, which consists of leaders/co-leaders of each advisory board and project founders. During the late summer of 2010, the Executive Committee will be organizing the Governing Board that will be formed by late October 2010. The Governing Board will consist of volunteer community members with diverse professional experience in education, educational law, finance, governance, community partnerships, sustainability, environmental education, culturally relevant teaching, etc. They will have 2-3 year term commitments. Governance bylaws, policies and procedures will be outlined prior to receipt of the planning grant, developed during the planning grant phase, and in place before the implementation phase of the grant begins. The Governing Board will first establish its by-laws, and then proceed to negotiate a charter contract with the MMSD Board of Education. This contract will be secured by January, 2011. The Governing Board will meet each month and have designated Advisory Committees (the same as during planning phase, possibly with a few additional groups, including Fundraising, Marketing, Outreach and Governance) made up of a majority of community members and parents—that leads the multi-faceted work of the school. The Governing Board will be responsible for developing a strategic plan for the school as well as evaluating and updating it each year. They will also work with supporting committees to develop a marketing plan for the school to help recruit students and community partners.

To strengthen the autonomy of BRMS, the Governing Board will seek to establish a non-profit status for the charter school. Together, the Governing Board with support from the Advisory Committee leadership will establish a non-profit foundation and endowment that will support the multiple projects and student initiatives of the school, and generate funds through local and national foundations, private support and grants.

Advisory Committees will meet on a monthly basis once the school is open. An Executive Committee will be developed that represents both the Governing Board and Advisory Committees, and will serve as members to the larger Resilience Research Center Board, which oversees the larger project and ensures that the school is working most effectively within the community partnership.

CURRICULUM, INSTRUCTION AND ASSESSMENT

A description of the educational program of the charter school and examples that illustrate the instructional methods, professional practices and assessment that will be used

*SEE APPENDIX A – for specific examples of individual units in more detail

In an economically and ethnically diverse neighborhood, Badger Rock School, along with The Resilience Research Center, will engage middle school youth by promoting attention and emotional regulation to enhance an inquiry/design-based curriculum that emphasizes project and place-based education, relevant real world experiences, and a strong ethic of community involvement. Partnering with The Center for Investigating Healthy Minds, Growing Power, Sustain Dane and Madison Gas & Electric, teachers and students will practice using healthy ways to navigate new social and academic challenges as they explore curricular issues of place, sustainability, cultural relevance and resilience.

The school will combine the best features of traditional and innovative research and curriculum to propel students to think critically and strategically, solve problems creatively and collaboratively and gain the knowledge and skills to become catalysts and change agents in their communities. Typical student projects will combine exploration of essential questions, research, interviews of experts, collecting and analyzing data and summarizing and sharing results. As demonstrated in sample curriculum units, student work will follow a rhythm of individual, small and large group experiences that are designed to cross all disciplines and develop a broad range of student skills. Linking the ability to regulate attention and emotions with both scholastic and social competence is a critical component in supporting students as they work to meet and exceed all academic standards; and creates a dynamic new model for education based upon principles of resilience and sustainability.

The year round school will be flexibly organized with regular routines, emergent events, adaptable space, and multi-age groupings. Students will be encouraged to think in creative, innovative ways about problems or questions that do not have standardized answers. Priority will be given to practicing skills of personal and social responsibility as described above to more fully foster development of curiosity, effective time management and scientific investigative skills. Students will learn about urban agriculture, foodways, renewable energy, and other complex systems by investigating the school site, adjacent neighborhoods, and nearby natural areas. Working collaboratively, students will use flexible and critical thinking, imaginative problem-solving approaches, and a range of technology tools. BRMS students will frequently practice planning, reading and writing in real world contexts, active listening to achieve tangible results as well as consensus decision-making. Students will leave 8th grade with solid understandings, grade level proficiency and the essential tools for 21st century success. Teaching and learning experiences will center around three main programming blocks: literacy learning, multi-age investigations, and emergent interest groups, with periodic all school experiences or celebrations. Our goal is to grow resilient learners, preparing them to problem solve in a changing world, one project at a time.

Measuring Student Progress:
BRMS students will participate in district-wide testing and staff will use a variety of formative and summative standards-based strategies common in other MMSD middle schools to assess and support student learning. Our distinctive teaching approaches are totally aligned with the MMSD's Strategic Plan calling for "measurement strategies that are aligned with the primary goals of instruction [which] may include: portfolios, lab practical exams, performances, long-term projects, and public exhibitions" and for the "Use [of] assessment data to make continuous improvements at the classroom, school and district levels." We will use MMSD Grading Guides to support teacher professional thinking during the process of assessing and grading academic growth in the content areas. A range of assessment strategies are included in each of the attached units in Appendix A to demonstrate varied possibilities to assess student learning.

Partnering with the Center for Investigating Healthy Minds, specifically Richard Davidson, we expect to better understand teacher and student mindfulness training to regulate attention and emotions and be better able to adapt our classroom techniques to positively impact students' social, emotional and cognitive growth. Truly unique, the later will offer Badger Rock Middle School an opportunity to take a leadership role nationally in addressing school issues that get in the way of learning such as bullying, violence, academic failure and teen depression. Documenting student progress will inform our teaching and help focus our efforts as we support each student in developing their potential as they progress through Badger Rock Middle School.

Academic Audits

Specific plans for the annual academic audit will be developed during the planning year. The audit will be designed so a picture of Badger Rock Middle School can be seen from distinct vantage points. In general, there will be a check-in with all stakeholders: teachers, parents, students to document what is taking place. A curriculum map will be available to show the depth and breadth of what is being offered and data that demonstrates student learning progress, attendance, discipline measures, implementation of school policy and future goals. It is our intent to use an academic audit to inform our decision making for continual growth and success.

A TYPICAL DAY AT BADGER ROCK MIDDLE SCHOOL

A typical day is described below with examples of specific curricular units listed that can show in greater detail how each of these blocks might function. Collectively, the curriculum examples show the varied and innovative methods that will be used to enable student to attain educational goals as well as the assessment techniques that will measure student progress.

The Literacy Learning Block

This block of time will be organized with grade level groupings and meet daily for 90 to 120 minutes. Students will engage daily in mathematics, language arts and the resilience of healthy living. These learning experiences may be more teacher-directed than others. They will strongly reflect school priorities: linking social, emotional and cognitive learning to the increased ability to regulate attention and emotions and structuring curriculum to promote inquiry/design, project involvement and collaborative learning.

Some examples of Literacy Learning Block units:

- I Am From – writing about who you are and honoring where you came from
- Statistics - an exploration of data collecting
- Stepping Stones to Symmetry - modeled from 8th grade Connected Math
- *Seedfolks* - a community building, cultural writing experience
- Mindfulness Practice- proposed curriculum from the Center for Investigating Healthy Minds
- Garden Journaling - seasonal writing, annually for each grade

The Multi-Age Real World Investigative Learning Block

This block will be organized with an equal number of students drawn from each grade level and meet daily for 90-120 minutes. Specifically, this grouping of students will engage in key science and social studies investigations around broad topics such as energy, agriculture, nature, and culture by investigating the school site and the world beyond. Students, teachers, and community partners will co-design interdisciplinary projects that excite curiosity, meet state standards, serve community needs, and generate products useful for assessing student learning. Students will regularly solve authentic problems, work in collaborative teams, reflect on experiences, network globally, play educational games, and work for social justice.

Badger Rock Middle School's place-based curriculum will be very evident in this program block. Themes involving phenology, foodways, cultural practices, environmental sustainability and renewable energy will be critical in guiding curriculum development and student learning. Essential questions such as What Makes A Resilient Garden? will drive teaching and learning during this block with differentiated methods practiced by teachers and students.

Some examples of Multi-Age Real World Investigative Learning Block units:

- Planting
- Building Energy
- Family Foodways
- Community Food Systems
- Neighborhood Mobile Games
- Garden Lab
- Studying Pricing, Marketing and Trade in a Global Economy

The Emergent Interest Block

This block will be more informally organized with expectations that students select learning experiences from a menu of choices generated by both teachers and students. Students may be enrolled in multiple interest groups during any one time and will meet with those groups from 1-5 times a week for 45-120 minute blocks. Focus areas of physical activity, technology learning, and the arts would be evident in this learning block. There will be some requirements or expectations such as fulfillment of a service learning project, while other experiences might be selected purely on the basis of student interest. Eighth graders might pursue an internship, be expected to analyze three years of phenology data or some other more in depth learning experience.

Interest-driven classes might arise from students who wish to pursue more of something they have experienced in a different learning block or to expose students to new and different ideas. Some students may wish to read or write poetry and host their own poetry slam. Others might choose to learn a foreign language, create public art, ride bikes, learn about bike safety, video production, form a band, develop their entrepreneurial skills or learn more about money management. We have not detailed any of the specific examples listed above. We anticipate these classes will be very student centered and evolve from other learning blocks or expressed interests of students.

While the formatting of interest based classes might be more student centered, assessment practices will integrate the learning standards and may include: tracking student progress by reviewing work samples, grading with teacher or student designed rubrics, assessing performances that demonstrate student understanding, holding individual conferences and teacher observation of student performance.

All School Celebrations or Learning Experiences will build community, excite curiosity and/or expose students to new ideas. Annually, teams of students and/or the student governing body would likely have strong input designing these special days. These events will be opportunities to launch new learning experiences or culminate an investigation.

The charter school can be like a community square -this community needs this, kids need to be more tied to this community's strengths

(African-American parent, Southdale)

Examples of All School Celebrations, Events, Tasks, and Projects will likely include

- Fall harvest festival
- Badger Rock Resilience & Sustainability Conference (Sample Unit in Appendix A),
- Earth Day Celebration or
- March 14th - Pi Day: A Mathematical Experience
- Preparation of School Lunches
- School Store
- Student Governance Body

PERSONNEL

The approximate staffing level that is planned for the charter school.

The staffing levels for the school will vary significantly during the first three years, with the staffing growing each year as the student body grows with each grade level added. It is anticipated that the school would open in the fall of 2011 with 40 sixth graders. The school staff will include 2.3 full time teachers and a full time learning coordinator who will also assume some teaching responsibilities each day. The learning coordinator will also be responsible for coordinating the school's instructional program, including curriculum, standards alignment and assessments. With final actual allocation to be determined after enrollment has concluded, it is estimated the school would have 0.67 special education teacher allocation in the first year. Addition estimates include 0.52 special education assistant allocation and 0.17 special education supplemental allocation.

Regarding students services staffing, the school staff will include a 0.2 school counselor, a 0.1 school psychologist, a 0.1 school social worker, and a 0.1 nurse assistant. Support staffing in the first year will include 0.24 allocation for noon supervision, 0.9 Educational Assistant, a 0.1 custodial staff member, a 0.5 clerical staff member and a 0.25 technical support staff member.

On any given day during the first year there will be approximately 4 instructional staff members and another 2 to 3 support staff members in the school. We believe that the inherently small learning community of the school, the purposeful connections with the community and community partners and the delivery of a flexible, relevant and dynamic curriculum will allow the school to flourish with what is an otherwise small staff.

The process for recruitment and assignment of the charter school staff

Teachers will be recruited and assigned to the school using existing hiring practices and procedures as agreed to by MMSD and Madison Teachers Incorporated (MTI). When needed memoranda of understanding will be negotiated.

The process for supervision and evaluation of the charter school staff

School staff will be supervised and evaluated by an oversight administrator, who will visit the school regularly to ensure a safe and effective learning environment, to provide staff supervisory functions as specified in the Collective Bargaining Agreement and in any times of crisis.

The qualifications that must be met by the individuals to be employed by the charter school

Teachers employed by Badger Rock Middle School must be licensed by the State of Wisconsin to teach middle school students. It is likely given the size of the staff that all teachers will hold a Wisconsin Department of Public Instruction license for Elementary Teachers. This license, according to the DPI website,
"allows the educator to teach any subject in a self-contained class, except a foreign language, and the following subjects in a departmentalized or other school organization pattern: language arts, mathematics, science, social science, and health within the grade or developmental range of the educator's license" (http://www.dpi.state.wi.us/tepdl/fqlcode.html#eled, accessed 7/26/2010)

We would also like to explore the option of having secondary specialists (licensed 6-12) in a limited capacity to augment our science, math, social studies and literacy curriculum. Their expertise would be an outstanding resource school wide and provide opportunities for enrichment and expanding capacity among the entire staff.

Additionally, given the focus of the school and associated unique curricular elements, teachers in the school will have additional experience in place-based and project-based instruction based on inquiry and design, real world applications of curriculum and community engagement. Ideally, those hired will have multiple certifications, for example in special education, English Language Learners or Bilingual instruction in addition to elementary certification.

All other staff employed by the charter school must meet the same criteria used for other employees in the District in their area of certification and licensure.

STUDENTS

The minimum and maximum number of students that will be enrolled in the charter school for the first year and for future years

Year One – Fall 2011	School will open with approximately 40 sixth grade students.
Year Two – Fall 2012	An additional 40 students will be added for a total of 80 in 6th and 7th grades.
Year Three – Fall 2013	The third group of 40 students will be added for a total of 120 in 6th – 8th grades.

It is our intention to try and keep enrollment at approximately 120 students each year once all grades have been added. A minimum of 12 students would be necessary per section or 24 per grade level. Our hope is to maximize the enrollment from students living in the surrounding neighborhoods.

At this time we do not anticipate any problems filling the spots in Badger Rock Middle School as interest from parents and families with future middle school age students has been significant from the greater Madison community.

Opening with one grade level to start allows us to make significant investments in the future student leaders of the school. These students will be the role models for those that come after them – demonstrating through their actions, as well as words, what it means to be a successful student and community member of Badger Rock Middle School. It is critical that our founding 6th grade class be involved in creating the routines, systems and school norms that will provide future students a healthy, engaging and empowering place to learn.

The procedures that the charter school will follow to ensure the health and safety of the pupils

Students and staff at Badger Rock will follow MMSD guidelines for health and safety.

We have been working with School Security Services Director, Luis Yudice, in conjunction with the architects at Hoffman LLC to ensure that we have a building design which provides for student's safety while at school. At this phase of planning it appears that the school will occupy the top floor of the building and have rooftop garden and outdoor classroom to provide a secure working space for students. The roof will of course meet all required safety codes associated with that type of space.

One challenge of our project is the overlapping use of the adjacent neighborhood center and Growing Power spaces. We are looking at a central entry point - with a high degree of visibility as well as a number of other security features. We will provide the Board with updates on these features as they are designed. Growing Power officials have agreed to have all potential volunteers fill out an MMSD volunteer background check form as part of their volunteer orientation. All volunteers with BRMS will do the same. Monitoring our mixed use space and the people entering in and out will be a priority while at the same time cultivating a sense of community and an invitation to participate.

While the mixed use features of The Resilience Research Center (RRC) make some of the safety issues a bit more complex, our partnerships and pedagogy are designed to drastically improve the physical and mental health of students (and their families). Students will have routine access to healthier, fresh food from the garden, produce which they will learn to grow, harvest and prepare. Our hope is to alter and improve student's eating patterns significantly. They will also be outside for a greater portion of their day on average, moving and being more active. Students benefit not only physically but emotionally from this increased activity. In addition our partnership with the Center for Investigating Healthy Minds and Dr. Richard Davidson will provide students with the tools they need to regulate their emotional well-being, which also impacts their physical health and academic success. We plan to have researchers on site as part of the larger project to measure and monitor these potential health benefits. One additional benefit for students of attending BRMS is an increased connection to their neighborhood, their families and each other. We believe this systemic approach to learning and health will reap great long term benefits for the entire community.

The means by which the school will achieve a racial and ethnic balance among its pupils that is reflective of the District student population

The student body will be drawn from the Rimrock and Badger Road neighborhood currently attending Sennett Middle School, LaFollette attendance area and other Madison neighborhoods. Serious efforts will be made to attract students to BRMS that will accurately reflect the racial and economic diversity of the city, and more expressly the surrounding neighborhood. BRMS will be open and accessible to all middle school students of MMSD and the admissions policies will comply with all State and Federal laws, including IDEA and Federal civil rights laws. BRMS will not discriminate on the basis of gender, race, national origin, color, income, disability, or age factors. BRMS will serve approximately 40 students during the first year (2011) in grade six, 80 students the year after (2012) in grades six and seven and at 120 at full capacity with 6th – 8th grades.

Our intention is to create a school that clearly reflects the diversity present in the Madison School District. We are working with District legal counsel to help create attendance boundaries and procedures to maximize the likelihood that the school reflects this growing racial and ethnic diversity.

Outreach: We have held a number of neighborhood family events, and have gone door to door to encourage neighborhood interest in the project. We have presented at neighborhood association meetings and are participating in neighborhood meetings with the Center for Resilient Cities in order to gather support and help neighbors to really feel a sense of ownership over the school. Of course, this is just a starting point. We are in the process of recruiting governance board members and members of the planning team from the neighborhood.

These efforts, along with reaching out to community organizations that have proven track records serving racially and ethnically diverse populations in the Badger Rock neighborhood is a major goal and strategy for truly creating a school that reflects the neighborhood's racial and ethnic balance.

The process for selection if interest exceeds projected/authorized enrollment

In the case that more applications are received during the enrollment window than spaces available, this initial group of applicants will make up a lottery pool. Random selection will ensure fairness without regard to ethnicity, national origin, disability, gender, income level---in effect all students are welcome---with equal access. BRMS will perform a lottery and it will be part of the school record. Those students not accepted by the lottery will be placed on a priority waiting list in the order drawn. Students will then be contacted in the order established by the lottery, or if no lottery is required, in the order applications are received, if and when openings occur.

The requirements for admission to the charter school

All placements will be by mutual consent of the student's parent/guardian, the student, BRMS and the MMSD. Upon admission, the parent/guardian will sign a one-year agreement of commitment. Once a student has been admitted, he/she may remain in attendance through subsequent grades without reapplying for admission.

The procedure for disciplining students

Based on safety, respect and responsibility, the three District-wide behavior expectations, the Badger Rock Middle School staff and school community will take a proactive approach to discipline. The well-researched benefits of smaller learning communities will facilitate strong and authentic relationship building, allowing all students to develop deep connections to the school. By being well-understood and well-supported, and by engaging in a flexible, relevant and dynamic curriculum, the expectation is that discipline issues will be limited, and disruptions to the learning environment, will be few.

As in all MMSD secondary schools, Badger Rock Middle School will develop a Positive Behavior Support program. This program will ensure all staff know and understand students and their backgrounds, and will be very clear and intentional about teaching and detailing expected behaviors to maintain a safe, fun and effective learning environment. Further, the staff will recognize and reinforce positive behavior, as a means of further promoting positive behavior.

In the event that significant behavior events arise, staff at Badger Rock Middle School will follow the recently revised MMSD Student Conduct and Discipline Plan. This includes all associated behavior categorizations, educational features, restorative actions and restrictions.

Information, if necessary, that identifies an alternative District school for pupils who reside in the charter school's attendance area and do not wish to attend or are not admitted to the charter school

Students are not, nor would they be, required to attend BRMS. For students who wanted to attend BRMS but space was not available, they would attend their neighborhood middle school as usual.

Information related to the extent to which the charter school will be prepared to meet the special needs of the students

Students with disabilities will be served through a variety of services, including following the students' IEP. Personal Learning Plans will be developed with all students to provide the time and guidance for student ownership of their learning. Students with disabilities will be part of an interdependent learning community that will help those students with exceptional needs to be included and supported in all areas. Special education services will be provided by a Special Education teacher. In addition, all facilities will be fully accessible and comply with Americans with Disabilities requirements.

We need a charter school- my daughter has learning problems and she feels lost right now – she needs a school where the teachers have more time for her to understand how she learns –and give her more opportunities to showcase her special talents.

(Resident, Indian Springs)

BUSINESS, FACILITIES AND OPERATIONS

The proposed financial relationship of the charter school to the overall District budget

As an instrumentality of the District, Badger Rock Middle School will have the same financial relationship with the overall District budget as do other existing middle schools. After establishing the budget neutral funding levels, the school will allocate and budget resources on the same timeline and same process used by existing schools.

A budget for the first year of operation based upon the stated enrollment assumptions

SEE NEXT PAGE

The business and support services to be provided by the District

Badger Rock Middle School will also utilize the business and support services of the District in a manner similar to other existing schools.

The manner in which annual audits of the financial operations of the charter school will be performed

Badger Rock Middle School will also undergo annual financial audits coordinated by the Districted in a manner similar to other existing District schools.

Badger Rock Middle School Budget Summary for Year 1

Budget Category	Cost neutral figures from MMSD		Proposed expenditures for BRMS	
	2011-12		2011-12	
	FTE	COST	FTE	COST
Enrollment Projection	40		40	
Instructional Staffing				
Allocation:				
Base	1.80	143,357	1.80	143,357
Discretionary				
Unallocated Discretionary	1.93	153,711	0.50	39,822
Learning Coordinator	1.07	85,218	1.07	85,218
Small School				
Supplemental	0.40	31,857		
Special Education Teachers	0.67	53,095	0.67	53,095
Additional:				
Extended Employment				
Support Staffing				
Allocation:				
Guidance	0.50	39,822	0.20	15,929
Psychologist	0.20	17,547	0.10	8,774
Social Worker	0.20	17,547	0.10	8,774
Nurse				
Nurse Assistant	0.10	5,224	0.10	5,224
Special Education Assistants	0.52	22,816	0.52	22,816
Special Education Supplemental	0.17	7,360	0.17	7,360
Additional:				
Noon Supervision			0.24	11,116
Librarian				
Food Service				
Custodial			0.10	7,390
EA			0.90	41,630
Clerical			0.50	35,479
Tech Support			0.25	18,326
Security				
Purchased Services				
Maintenance:				
Site Maintenance				
HVAC Maintenance Contract				
Operations (elevator, fire, pest)				2,604
Equipment Repair Svcs				
Utilities:				
Gas				5,000
Electricity				10,000
Water/Sewer				3,000
Phone				1,000
Transportation:				35,100
Insurance				
Property				385
Workers Compensation				
Liability				
Delivery Services				
Supplies				
School Improvement Plan (SIP):				
Allotment		249		1,766
Additional				
Classroom Supplies:				
Allotment - General Formula		5,022		5,022
Additional - Small School Allotment				
Start up Costs				
Library Materials:				
Allotment - Common School Fund				
Additional				
Staff Development:				
Allotment		265		265
Additional				
Custodial:				
Food Service - Food Costs		11,929		11,929
Non-Capital Equipment				
Classroom Furniture			DPI Implementation Grant	
LMC Furniture				
Computers, Peripherals			DPI Implementation Grant	
Networking				14,000
Classroom Set-up		1,360	DPI Implementation Grant	
Food Service				2,000
Site Security (camera/alarms)				
Capital Equipment				
Kitchen Equipment/Set-up			DPI Implementation Grant	
Additional Programming				
MSCR				
Intermurals				
Additional Programming				
Total	7.56	596,379	7.22	596,379

A description of the school facilities

SCHOOL BUILDING, SITE AND PROCESS

Badger Rock Middle School will be part of a larger 4 acre campus located on the site of the former Badger School on Rimrock and Badger Roads. The BRMS team is working closely with the Center for Resilient Cities and their partners, and Hoffman LLC of Appleton on preliminary space plans, program descriptions and operational objectives, in order to lay out the overall master plan for the site and make best use of the available space.

Hoffman LLC, a total project management firm, will oversee every aspect of the project from planning, design, and construction management, to build out. They come with exceptional experience in school design (they built the first two LEED certified schools in Wisconsin), non-profit design, and innovative community design expertise. Hoffman also has the distinction from the US Green Building Council as having designed and built the highest rated LEED (Leadership in Energy and Environmental Design) New Construction building in America for Holy Wisdom Monastery in Middleton.

Hoffman also brings skills in facilitating communication and collaboration amongst key stakeholders the project. For the school portion of the project, the Center for Resilient Cites, BRMS and Hoffman have held several meetings with MMSD staff to gain an initial understanding of the District's needs in the school design and functionality including food service, janitorial services, safety, transportation, building design, and curriculum. In addition BRMS is collaborating with Hoffman, CRC, Growing Power and other project stakeholders to discuss ways to best utilize and share resources.

Vision

BRMS is envisioned as a separate enclave, within the larger Resilience Research Center complex. Though currently in schematic design phase, with work on massing studies and adjacencies underway, it is probable that the school will occupy approximately 6,500 - 8,500square feet (excluding shared spaces) within the overall Resilience Research Center complex.

The school will contain an assortment of multiple-use project learning spaces, some for small groups of 3-8 students, others for groups of 20, and other spaces that can be expanded or contracted based upon need. Additionally, the school will contain conference areas, outdoor space, a green house, art/workshop/science areas, a mud room, project storage areas, janitorial space, a place for teachers to gather, restrooms, etc.

The school is being designed and built for 120 as the ideal number served. In addition to these separate quarters exclusively for the school, BRMS will have use of and access to collaborative shared space throughout the campus.

Shared, Collaborative Space

Collaborative shared space is the heart and soul of the Resilience Research Center. Spaces that are shared or collaborative will be used by a variety of site users at different times during the day. Shared spaces will be located largely on the RRC's ground floor, with additional shared space outside. Here is a preliminary list of shared spaces:

Kitchen

The kitchen is the centerpiece of the larger project, and will be built and designed so that it can take into consideration all of the varied and multiple users and needs. Hoffman is bringing in the

expertise of a school kitchen consultant to advise on this complex kitchen. It is anticipated that the kitchen will have shared use of some of the more expensive equipment (dishwashing equipment for example), and that the kitchen may have several wings. That is, there may be a section of the kitchen that is used as the "teaching kitchen", this part of the kitchen would be set up for use by the school for up to 20 children at a time, or for use by the Neighborhood Center or Growing Power, for example, as they need. Another portion of the kitchen, which would be off-limits to students, would be the professional kitchen, where food is processed and prepared. A larger freezer might have locked sections within it, for each partner.

Classrooms
The RRC complex will have 1 to 2 classrooms, outside of the school setting, that could be used by any of the project partners, including BRMS. For example, one room could accommodate public presentations using technology.

Outdoor Space
A portion of the outdoor space will be shared for all project participants. These areas may include garden space greenhouses and hoop houses, a natural playground, orchard, shaded seating, woodshop/outbuilding, mudroom, and picnic area.

Neighborhood Center/Gym
The neighborhood center and gym will be able to be used by all tenants and community groups. BRMS students will have use of the gym and associated neighborhood center amenities each week for a variety of purposes: gym class, all school assemblies, family potluck, etc.

TIMELINE:

The current goal is to have an interim school facility for one grade level in August 2011 with the new building completed in spring of 2012, which would allow for the school to be fully functional and available for an additional full grade level of students by fall of 2012. It is intended to have hoop houses and additional growing areas ready and already in production by the start of school in August 2011.

2010	
June-August:	Preliminary program development; meeting with all community partners/MMSD; massing studies and adjacency requirements established; zoning/city processes underway.
August:	Conceptual Site & Building Design
September	Schematic Design completed, city processes continue
November:	Design Development completed
2011	
February	Construction Documents complete
March/April	Start Construction
July	Completion of Phase One for School Occupancy
2012	
February	**Construction complete**

Temporary Structure Contingency:

During our first year of operation, BRMS will have a maximum of 40, sixth grade students attending school on site. To insure that the school will be open in fall of 2011 the plan will include a contingency for a temporary school structure. The temporary structure would be located on-site, or in close proximity to the site, allowing for the learning community to be witness to the construction of the Resilience Research Center campus. . This will give students and neighborhood members a real sense of ownership over the larger project.

With safety in mind, the temporary structure would be located away from the actual construction zone, with safe access for car and bus drop off. The Center for Resilient Cities is working with BRMS to determine the size and type of structure that is most appropriate, if needed.

We are currently looking at several options for the temporary school, from renting or leasing a portable classroom structure, to retrofitting a large temporary house. There are many companies within our area that provide temporary classroom structures, and several options for configurations. Walbridge School in Madison uses this type of structure for their fulltime school. Costs for renting or purchasing the temporary structure would be rolled into the larger total project cost, and would be covered by our fundraising efforts, rather than by MMSD.

Since the overall indoor building space will be smaller during the inaugural year, BRMS staff and planning team see this as fantastic opportunity to build community partnerships. Students will have more time in the community during the first year, with projects happening throughout the community. For example, students may use space at Edgewood College for study of lake ecosystems, or the Children's Museum for art classes, or the nearby Lussier Heritage Center or Jennie & Kyle Nature Preserve for studying wetlands.

BRMS will work closely with MMSD to ensure that the site and facility chosen for this first year are in accordance with MMSD policies and procedures.

The types and limits of the liability insurance that the charter school will carry and the effect of the establishment of the charter school on the liability of the District.
We will need to investigate this further with District legal counsel. At this time we are not certain.

EXEMPTIONS FROM STATUTES, POLICIES OR CONTRACTS

The specific state statutes or district policies from which it will be particularly important for the charter school to be exempt

We are seeking waivers from official MMSD School Board Policy to allow for maximum flexibility and autonomy. We will seek a waiver with respect to the school calendar, so that BRMS can operate on a year round schedule (180 days). Other waivers will be sought to excuse the requirements of world languages, physical education, and fine arts. Each of these activities will be incorporated into the school experience in an alternative fashion. Staff at BRMS will also be excused from MMSD Professional Development and in-service days, as teachers will be engaged in very site-specific professional development. We will continue to work collaboratively with MMSD staff to identify additional areas where policy waivers may be necessary.

The anticipated variations or waivers in collective bargaining agreements

At this time we have had several initial meetings with MTI to identify areas where we may need to seek Memoranda of Understanding (MOUs). To date our conversations have been productive. We will continue to have regular meetings with representatives to address any areas that would need additional contract language to address.

Potential Variations and/or Waivers

- **Academic year calendar** - switching from a traditional 9 month calendar that most MMSD schools use to a year round calendar. Still 180 days but the timing of breaks is different. This will need to be negotiated as it is part of the contract. This may have additional contract language issues that will need to be resolved as a result of the different schedule.
- **Attendance at District Professional Development** – given the unique nature of our curriculum, District level professional development may not pertain to what is being done at the Badger Rock site. There may also be need to negotiate release time for professional development which is different than the current MMSD schedule.

- **Hiring Timeline** – Given the year round nature of the Badger Rock school year it may be necessary to make adjustments to the hiring cycle – especially year 1.

- **Custodial** – Because Badger Rock will not be housed in a facility owned by MMSD there will need to be an agreement reached about the nature of BRMS custodial service – especially year one (2011-12) when we only have 40 students in a temporary building. It is the intention of the Resilience Research Center to explore the option of hiring MMSD custodians (supported under the Collective Bargaining Agreement) to serve as custodians for the larger facility beyond the school areas.

- **Waiver of PE, foreign language and related arts teachers**- we are not providing students with foreign language, PE and related arts in a traditional sense. This will be incorporated throughout the curriculum and administered/overseen by the classroom teacher. There will be a need to adjust the language in the Collective Bargaining Agreement.

INVOLVEMENT AND INPUT

A description of individuals, groups and processes used in the development of the proposal

The process to put together the proposal for Badger Rock Middle School has been complex, dynamic and extremely collaborative among the members of the planning team and our many community partners. This is no ordinary project and has required us to take on many different roles as we move forward. We could not have gotten this far without extensive collaboration and routine conversations with MMSD staff especially Pam Nash, Sally Schultz and Steve Hartely on the Central Administration Leadership Team.

A real community has a school.

(Hispanic resident and parent, Indian Springs)

Planning Team Bios

Jay Affeldt was born and grew up in Madison, and is a 1991 graduate of Madison Memorial High School. He is in his eleventh year as a teacher back at Memorial, and created the AP Environmental Science program there in 2000. He is in his second year as the school's Project REAL Smaller Learning Communities Grant Coordinator, and also coordinates the Professional Development School partnership with the University of Wisconsin- Madison for both Memorial and Jefferson Middle School. He received his Bachelors in Education from the UW, and also has Masters Degrees from the UW in Educational Psychology and Educational Leadership and Policy Analysis.

Sara Alvarado is a past Nuestro Mundo board member and named founder of Madison's highly successful dual immersion charter school. She is passionate about education and an active mom to Alex, 4th grade and Leo, Kindergarten at Nuestro Mundo Community School. Sara and her husband, Carlos moved into the Indian Springs Neighborhood (in the Badger Rock School neighborhood) to make sure their children could attend Nuestro Mundo Community School. Sara grew up in Madison and graduated from Madison West and University of MN-Minneapolis and lived in Mexico for 3 years before returning to Madison in 2002. Sara and Carlos own a local real estate company, The Alvarado Group that is committed to community involvement and service. Their company won the 2008 Green Built Award from MABA (Madison Area Builders Award) and a Grassroots Leadership College Award. Sara founded Madison's Green Agents, a group which was later adopted by the Realtors Association of South Central Wisconsin as their Green Committee and has lead the industry in the education and innovation of sustainable practices in real estate and among homeowners. She is currently a board member for Sustain Dane and also on the board for the Realtors Association of South Central Wisconsin.

Brenda Baker is an artist and Director of Exhibits at Madison Children's Museum, where she has worked for the past 20 years designing and developing project and place-based cultural and environmental exhibits, many in collaboration with MMSD schools. She has been at the forefront of the sustainability movement within the museum field for the past 15 years and is founder of greenexhibits.org. Brenda has an MFA from UW Madison and a BA from DePauw University. She has received numerous awards for her work in informal education from the UW School of Education (Outstanding Alumni Award), the Wisconsin Department of Public Instruction for her work with community based cultural projects, and from the American Association of Museums and Association of Children's Museums for her groundbreaking work with cultural projects and sustainable exhibit design. She is a mother of two MMSD students (Randall and Hamilton).

Jamie Domini will serve as the Project Planning and Implementation Coordinator for Badger Rock Middle School during the 2010-11 school year, funded through the DPI Planning Grant. She has been teaching middle and high school for 13 years - both public and private. Jamie has lived in Madison for most of her life and is a proud graduate of West High School and the University of Wisconsin. Throughout her career Jamie has routinely incorporated service learning and active citizenship into her teaching. She had the opportunity to serve as a principal intern at Thoreau Elementary during Summer School 2010 and is currently working on her administrative and curriculum director licenses. Jamie will be participating in Edgewood College's Sustainability Leadership Program in partnership with MMSD staff this summer.

Kristen Joiner has 15 years of experience in leading initiatives for social change. Kristen is Executive Director of Sustain Dane, where she helps spearhead sustainability initiatives throughout Dane County. Prior to coming to Sustain Dane, Kristen was the Co-Executive Director and Co-Founder of the educational non-profit organization, Scenarios USA. Scenarios USA was founded in 1999 in collaboration with a group of New York City public school teachers, filmmakers Doug Liman (Mr. & Mrs. Smith) and Avram Ludwig (Fast Food, Fast Women) and producer Maura Minsky

(ABC News), to engage young people in their own health and education. Over the past ten years, Kristen led Scenarios USA's development from an abstract idea to an award-winning organization that has been cited as a model for sex education, innovative school redesign and school engagement. The organization has a $1,000,000 budget, eight employees and major investments from the Ford Foundation. Scenarios USA brings millions of dollars of in-kind contributions into public school districts across the country by partnering Hollywood filmmakers with teachers and students.

Before starting Scenarios USA, Kristen developed her skills as an advocate and a community organizer. She worked in international public policy as the Program Officer for the Sustainable Development & Population Program of Parliamentarians for Global Action (PGA). Through PGA, an international organization of national legislators, she educated and mobilized politicians around the world to take action on the Program of Action developed at the International Conference on Population and Development (ICPD).

Sara Krauskopf spent 11 years teaching high school biology and environmental science, earning an Herb Kohl Teaching Fellowship in 2005. She received her B.A. in Biology from Carleton College and an M.S. in Science Education from the University of Wisconsin-Madison. Throughout her career she has worked in curriculum and teacher development programs both in Wisconsin and Latin America. She now directs Education and Outreach for the Great Lakes Bioenergy Research Center, at UW-Madison and serves on the Board of Directors for the Wisconsin Association of Environmental Education.

James Lewicki has provided significant coaching leadership to over 100 new schools -- elementary and secondary, rural and urban -- across the country and will serve as the planning and implementation coach for Badger Rock Middle School. Recognized as a national expert in place-based education, Lewicki has been at the forefront of a growing network of small place-based, charter schools. His expertise is an outgrowth of 10 years of YMCA camp and outdoor education work and 17 years of public school teaching, where he was recognized for innovative teaching as a 1994 Wisconsin Teacher of the Year finalist. His many workshops and presentations have been warmly received at local, state, national, and international conferences, trainings, and symposiums.

Mark Wagler designs place-based games and curricula and researches student learning at the UW Local Games Lab. He has taught at all levels from pre-school to college, including 19 years in MMSD. His 4th and 5th grade Randall students created year-long cultural tours of Dane County, Wisconsin Hmong communities, Park Street, and the Greenbush; studied Lake Wingra wetlands in bi-weekly Mornings-in-the-Marsh and helped create the Randall Outdoor Classroom; and created web sites, videos, museum exhibits, book, community survey, community conference, city council resolution, and hundreds of articles published in Great Blue: A Journal of Student Inquiry. His publications include *Teacher's Guide to Local Culture, Kids' Guide to Local Culture* and *"Getting Places: Using Mobile Media to Augment Place-Based Learning."*

David Wasserman has been teaching at Sennett Middle School in a multi-age, multi-subject classroom for the past 5 years. He has also taught at Wright Middle School, one of MMSD's charter schools, as well as at the Environmental Middle School (another multi-age, multi-subject, homeroom-based school) in Portland, Oregon, where he wrote and developed a portion of their place-based curriculum, and worked as Program Leader at an outdoor wilderness program within the Portland Metropolitan School District. David has been honored as an Aristos Scholar (nominated group of "innovative and effective educators" in the district), and has been recognized for his development of a number of school-based projects. He also was selected by MMSD as a district representative to participate in Edgewood College's Sustainability Leadership Graduate Program. David has two children who attend a MMSD elementary school.

Nan Youngerman taught in the Madison Schools for over thirty-five years. During that time she was also active as a member of Madison Teachers' Inc She has received numerous awards for innovation and excellence in teaching, including a Presidential Award for Excellence in the Teaching and Learning of Mathematics. She has worked locally and nationally with action research projects designed to promote change. Her classroom passions include nurturing student curiosity and creativity, curriculum development, and building community within the classroom setting. Most recently she has mentored initial educators within the Madison Schools. When not doing school related activities, she might be traveling, cooking or bicycle riding!

BRMS Planning and Curriculum Teams' Responsibilities

Jay Affeldt	Planning team: budget and operations, teacher allocations, MMSD liaison
Sara Alvarado	Planning team; project leadership, neighborhood representative; voice of experience (founder of Madison's other charter school – Nuestro Mundo); community partnership liaison; liaison with MMSD and board members
Brenda Baker	Planning team; project leadership, proposal and grant writer; community partnerships; liaison with MMSD board, staff and collaborating partners; fundraising
Jamie Domini	Project Coordinator; Planning team member, fundraising, curriculum development, community partnerships, grant writing and proposal development, CRC liaison, union liaison, charter school association liaison, and neighborhood outreach
Kristen Joiner	Planning team; project leadership; community partnerships; liaison with MMSD board, staff and collaborating partners; fundraising; sustainability
Sara Krauskopf	Curriculum development team member
James Lewicki	Planning and Implementation coach for Badger Rock Middle School.
Susanne Smebak	Curriculum development team member
Bob Tabachnick	Planning team, teacher training, curriculum development, assessment oversight
Mark Wagler	Planning team, curriculum development; cultural learning, oversight of advisory boards, union liaison
David Wasserman	Planning team, curriculum development, neighborhood outreach
Nan Youngerman	Planning team, curriculum development, teacher training, community and board liaison, fund development, union liaison, and general all around wonder woman

Additional Educational Advisors

Gloria Ladson-Billings	Chair, UW Curriculum & Instruction, and leader in the field of culturally relevant pedagogy
Kira Fobbs	Teaches 2/3 grade at Falk Elementary School, formerly at Lincoln Elementary
Jim Mathews	Social studies and media teacher, Middleton Alternative High School, UW Madison doctoral student, Local Games Lab staff
Kurt Squire	Associate Professor, Curriculum & Instruction, UW; Co-Director, Games + Learning + Society Initiative; Associate Director of Educational Research and Development, Wisconsin Institutes for Discovery
Bonnie Trudell	Faculty of School Health Education Program Dept. C & I UW- Madison (Retired), Courage to Teach facilitator and BRMS Neighborhood Resident

Community Advisors:

Tim Bruer	Alder
Betty Banks	Community leader, South Madison
Sam Dennis	UW Madison Professor in Landscape Architecture
Sarah K. Khan	Director of Tasting Cultures Foundation and Ethnobotanist/Researcher at the UW Madison Center for Integrative Medicine
Nathan Larson	Education Director for Troy Gardens
Jim Lorman	Professor of Biology at Edgewood College
Anne Pryor	Traditional Arts Coordinator at the Wisconsin Arts Board; Folklorist
Margaret Nellis	Manager of Academic Partnerships at University Health Services, UW Madison

Community Organizations:

We have community support from Madison area businesses and organizations that support the vision and mission of the larger project and BRMS's charter. This list is preliminary only and will greatly expand once initial support is established. Current supporters include:

Lead Project Partners:

The Center for Resilient Cities owns and manages the Resilience Research Center LLC with operational responsibility for Agriculture, Neighborhood Center, Project-Based Middle Scool, Mixed-Use/Neighborhood Services, Energy Services Center, Wellness Services, Water Resources, and Research/Measurement/Outreach functions carried out by separate Boards.

Thomas Dunbar	Executive Director; spokesperson, oversight of Center for Resilient Cities, oversight of project design and development
Kate Stalker	Special Projects Coordinator; oversight of City process, facilitation of advisory committees/boards, coordination of volunteers, publicity, & events
Joe Sensenbrenner	Board President; spokesperson, oversight as owner for project, adherence to project vision and mission, local and national fundraising

Growing Power- Will Allen, Robert Pierce and Martin Bailkey will oversee development of agricultural uses, fabrication of greenhouses, and have oversight of all growing operations on site. Growing Power Inc is a national nonprofit organization and land trust supporting people from diverse backgrounds, and the environments in which they live, by helping to provide equal access to healthy, high-quality, safe and affordable food for people in all communities. Growing Power implements this mission by providing hands-on training, on-the-ground demonstration, outreach and technical assistance through the development of Community Food Systems that help people grow, process, market and distribute food in a sustainable manner. (Growing Power Inc. website)

The Center for Investigating Healthy Minds – Dr. Richard Davidson The Center for Investigating Healthy Minds (CIHM) conducts rigorous interdisciplinary research on healthy qualities of mind such as kindness, compassion, forgiveness and mindfulness. Scientists at CIHM represent an integrated team with a broad array of research methodologies from behavioral to neuro-scientific. The CIHM engages in translational research and outreach with the goal of cultivating healthy qualities of the mind at the individual, community and global levels. They will be working with students at BRMS and their families.

Madison Area Community Land Trust (MACLT) will be instrumental in oversight of the overall site development and urban agriculture planning, including the gardens, working farm and buildings.

Program and Business Partners:

Sustain Dane will connect community partners with the school's evolving needs and facilitate sustainability courses for school administrators and teachers.

MG & E will provide alternative energy, demonstration equipment and educational feedback materials for the site, including but not limited to solar and wind power.

Madison Community Foundation is providing foundation support for the development of the Resilience Research Center, including development of the ground, the charter school and the Neighborhood Center.

Edgewood College Sustainability Leadership Program will provide sustainability leadership training for teachers and administrators. In addition, the Leadership in Sustainability Program may provide volunteers, apprentices or project assistants.

Community Groundworks at Troy Gardens will provide educational training in gardening, nutrition, and organic agriculture.

Madison Children's Museum will serve as an off-site art studio and will provide a public venue for display of student work and performances.

UW Madison staff serves as volunteers, from a variety of departments including, but not limited to:

Department of Curriculum and Instruction
Games +Learning + Society Initiative
Landscape Architecture Department
UW Health Services
Center for Integrative Medicine
Center for Health Systems Research and Analysis
Medicine and Public Health
Community Food Service Research & Planning
Agroecology
Ecosystem and Landscape Ecology
Collaborative Center for Health Equity

South Metropolitan Planning Council will help generate interest and partnerships between BRMS and area business, community leaders and organizations

Wisconsin Charter School Association- John Gee, Ingrid Beamsley, Danny Goldberg, Laurel Cavalluzzo- will assist the school in its development as a high quality Charter School related to its governance board, fund raising, operations, performance management and leadership and professional development.

MMSD Staff Team:

Daniel Nerad	Superintendent of Schools
Steve Hartley	Chief of Staff; liaison between BRMS planning group, the Superintendent and MMSD Board of Education oversees larger MMSD/BRMS planning team meetings
Erik Kass	Assistant Superintendent for Business Services; oversight of finances and budget
Ann Wersal	Administrative Assistant; scheduling meetings
Pam Nash	Assistant Superintendent for Secondary Schools; provides input and data from existing middle schools and gives recommendations for staffing allocations, etc.
Sally Schultz	Director of Innovative and Alternative Programs
Marcie Pfeifer-Soderbloom	Grant and Fund Development Coordinator; provides assistance with grant review
Donna Williams	Director of Budget, Planning and Accounting; assists in developing cost neutral budget scenarios and guidance in budget development
Angela Lee	Assistant Director of Budget, Planning and Accounting; assists in developing cost neutral budget scenarios and guidance in budget development
Frank Kelly	Director of Food Services; provides leadership and oversight of food service issues
Doug Pearson	Director of Building Services; provides oversight of building, custodial and maintenance issues
Rick Hopke	Registered Architect, Coordinator of Facilities Engineering
Lisa Wachtel	Executive Director of Teaching and Learning; provides direction and insight on curriculum
Tim Peterson	Coordinator of Science and Environmental Education; provides direction on science education in charter schools
Mary Teppo	Director of Administrative Services; provides insight on purchasing and transportation.
Luis Yudice	Coordinator of School Security Services; provides insight into all school building and child safety issues
Kurt Keifer	Director of Information Services, Research and Evaluation and Chief Information Officer; school technology and communications advisor providing data on school technology needs
Dan Mallin	Legal Counsel; provides advice on legal issues involved in charter agreement, school staffing and policy development
Kathy Price	Resource teacher, Public Information and Community Engagement
Lucy Chaffin	Executive Director for Madison School & Community Recreation; advisor for after-school programming
Rita Applebaum	Aristos Program Director and advisor to planning team on year round schooling options

ADDITIONAL INFORMATION
Fundraising & Neighborhood Engagement Events

FUNDRAISING

Fundraising efforts for Badger Rock Middle School, as part of the larger Resilience Research Center Project, is being spearheaded by the Madison based Center for Resilient Cities (CRC), under the leadership of Board President Joe Sensenbrenner. While CRC is overseeing the overall fundraising strategy and implementation of both local and national fundraising efforts for the school, neighborhood center, grounds, Growing Power and community partners, each community partner in the project has been actively involved in these efforts. Members of BRMS have brought many potential national funders, grant-making bodies, state wide and local organizations efforts to the table, and will continue to do so under the umbrella of the Resilience Research Center.

The current fundraising goal for the project is between $8 and $12 million. Final cost estimates will be calculated based upon the final space program, which we expect to be completed in September. This includes all monies for the building of the Resilience Research Center and site in which the Badger Rock Middle School resides. We expect to reach the $2 million dollar mark after we have secured approval from the MMSD Board of Education.

It should be noted that we find ourselves in a chicken/egg scenario. Many funders, both locally and nationally, have expressed great interest in funding the project, particularly the school piece. However, they want to have the full endorsement of the MMSD board before they write a check, to ensure that their monies are used for their intended purposes. As soon as we get MMSD approval, a process appropriate to potential donors will be developed that allows eligibility for both local and national grants, which is only possible with MMSD endorsement. We will move forward establishing ourselves as a non-profit organization as soon as we have secured the planning grant funds from DPI to pay for associated legal fees. We anticipate this announcement in the next week or so, and processes are underway to expedite this process.

A separate "flexible fund" is being created by the Friends of Badger Rock Middle School to support programmatic, staffing costs or unanticipated expenses during the first years of operation. This will ensure that BRMS will remain budget neutral for the MMSD and that no additional MMSD monies will be spent on the school beyond what is provided by the standard per pupil funding formula.

In anticipation of MMSD board approval, the CRC Board and the Wisconsin Charter School Association, in partnership CUNA Mutual Foundation, CRC and BRMS planning team, are organizing a community-wide event at CUNA Mutual in Madison. The event is planned for September 22nd, and we anticipate roughly 500 guests and potential contributors to attend, raising awareness of and enthusiasm for this extraordinary endeavor. Additional events will be planned once MMSD approval is attained.

Fundraising Team

While overall fundraising efforts are spearheaded by CRC and lead by former Madison Mayor **Joe Sensenbrenner**, CRC has also retained the services of Chicago-based fundraising consultant, **Margaret O'Dell** who is providing additional campaign leadership and direction for national level donors. She served for almost twenty years as program officer and manager with the Joyce Foundation in Chicago, with grant-making responsibility in the areas of arts and culture, higher

education, and the environment, as well as serving as chair of the Environmental Grantmakers Association, and board member of the Sustainable Agriculture and Food Systems Funders Group, Surface Transportation Policy Project, and Great Lakes United. She previously served as Associate Director of Development Foundation Relations, at the University of Chicago, facilitating the securing of approximately $50 million per year in grants to the University.

BRMS's fundraising team includes: **Louise Root-Robbins**, who has spearheaded a number of capitol campaigns. Louise is actively engaged in fund development both in her professional and community work and has been instrumental in securing more than $10 million from private and public sources to support a diverse range of projects which include the WI Comprehensive School Health Program; Planned Parenthood Comprehensive Reproductive Health Clinic; Lussier Community Education Center; UW System Sloan Project for Academic Career Advancement; Downtown Madison YWCA Renovation Project; and UW-Madison School of Nursing Project WINNERS: WI Network for New Employment & Research Skills. **Kristen Joiner**, Executive Director of Sustain Dane, who has 15 plus years of national fundraising efforts for non-profit organizations; **Brenda Baker**, artist and Director of Exhibits at Madison Children's Museum, who has written and secured large national grants both for her work as an artist and on behalf of Madison Children's Museum; **Nan Youngerman** who has extensive ties across the community, and **Jamie Domini,** whose has strong connections and allies in state government and within the National Education Association have positioned the school and larger project very favorably for future funding. Additionally, **John Gee**, Executive Director for The Wisconsin Charter School Association is serving on our fundraising team.

Funding Advantage

The intense interest we have had both nationally and locally in this project stems from its context, strategic alliances, and strong community partnerships. While our fundraising consultant is quick to point out that there are models throughout the country of similar independent projects (charter schools with urban ag focus; alternative energy demonstration sites, etc.) none have the breadth and depth of this project all on one site. What makes this unique, and a model for communities nationwide, is its complete focus on creating a resilient neighborhood and its integrated approach to collaboration between seemingly disparate facets of the community. It is the context and partnerships between school district, colleges and universities , businesses, researchers, community health organizations, urban agriculture experts, local entrepreneurs and community members, with education, urban ag renewable energy and resiliency at its core that gives the project a strategic advantage when looking to larger national funders.

Another funding advantage is that with several areas of collaboration on the site, multiple users and functions, it is possible to wrap the fundraising package in different ways to achieve our ultimate outcome. For example, if we find a donor who is interested in funding the Neighborhood Center and site, including build out of the gym, locker rooms, large kitchen and grounds, these spaces would be available for school use at no cost to BRMS. Or if one of Growing Power's donors comes forward to sponsor all of the urban agriculture on site, this could include the school's greenhouses, outdoor space, mudroom and outbuildings.

The charter school could connect kids to the community, to seniors, and to the different cultures in the neighborhood
(Hispanic resident and parent, Moorland Rimrock)

NEIGHBORHOOD ENGAGEMENT & EVENTS

SEE APPENDIX D for pictures from June 6th event

Badger Rock Neighborhood and Community Partner Events - 2010	
March 3rd.	**Neighborhood Town Hall** – Sponsored by Alderman Tim Bruer. Opportunity for neighbors to come and hear about the project, ask questions, and get involved.
April 26th	**Neighborhood Association Meeting** – attended quarterly neighborhood association meeting and presented information about the project as well as inviting participation and feedback from neighbors. Article placed in the spring newsletter and future editions of the newsletter.
May 11th	**Neighbor and Volunteer Potluck & Outreach** - Potluck with local alder, neighbors and interested volunteers.
May 1st	**Will Allen and Growing Power** – Neighborhood gardening event, chance to meet neighbors and learn more about BRMS
May 20th	**Community Partners Meeting** - over 15 community partners met to look at opportunities to work collaboratively in the planning and implementation stages
June 6th	**Neighborhood Informational Meeting & Ice Cream Social** – On site gathering and informational open house about BRMS, games sponsored by Children's Museum & Aldo Leopold bench building
July 27th & August 6th	**Neighborhood Bike Clinic** - Opportunity to meet on site, connect with neighbors, learn minor bike repairs and hear more about Badger Rock

NEXT STEPS

By the end of August – look for

Completed Governance Board	**Updated and expanded website**
A monthly newsletter going out to community	**Expanded Facebook Page**
More information about fundraiser September22nd.	**Dates for additional neighborhood meetings**

Badger Rock Neighborhood and Community Partner Events	
August 23rd	***Neighborhood Association Meeting*** – Quarterly meeting with neighborhood residents. Will continue to have information in neighborhood newsletter.
September	***Neighborhood Meetings*** - Continue holding small neighborhood meetings and RRC Committee Meetings
September 13th	***Public Hearing*** with MMSD Board of Education
September 18th-19th	***Neighborhood Gardening with Will Allen*** and Growing Power- Hoop Houses will be constructed on site and creating additional raised beds. Neighbors and community members are invited to meet Will and come together to learn more about the school, Growing Power and the Resilience Research Center.
September 22nd	***Fundraiser*** - Wisconsin Charter School Association is partnering with BRMS and CRC to host a major fundraiser and community awareness event.
September 25th	***Food for Thought Festival*** – Badger Rock and partners in the Resilience Research Center will have a booth at the festival to promote awareness about the school and the larger project. **Many more...**

Parents here, no matter what is going on in their life want their children to have a good education. They will do whatever possible to make that happen- they will be involved in this school

(Social worker, Southdale)

APPENDIX A: SAMPLE UNIT LIST AND UNIT EXAMPLES

Block A: Grade-level Literacy (Mathematics, Language Arts, and The Resilience of Healthy Living)
Where I Am From – writing about who you are and honoring where you came from
Statistics ---an exploration of data collecting
Stepping Stones to Symmetry - based on 8th grade Connected Mathematics unit
Seedfolks – a community building, cultural writing experience
Mindfulness Practice- proposed curriculum from the Center for Investigating Healthy Minds
Garden Journaling - seasonal writing, annually for each grade

Block B: The Multi-Age Real World Investigative Learning Block (Social Studies, Science, Social & Environmental Health)	
*Planting	*Community Food Systems
*Building Energy	*Neighborhood Mobile Games
*Family Foodways	Garden Lab
*Studying Pricing, Marketing and Trade in a Global Economy	* Sample units provided

Block C: Emergent Interests **(including P.E., arts, media, languages, academic passions, living skills)** **~ some sessions taught by volunteers; some could be all year, others very short**	
Bike riding, maintenance, safety	Sports (e.g. soccer, basketball, volleyball)
Dance workshops (e.g. hip hop, Hmong, salsa, ballroom)	*Public Art (*Sample Unit Provided)
Video production	DJing, music production
Spanish club	Fractals
Carpentry (bat & bird houses, raised beds, compost bins)	CPR, first aid
Youth Enterprises/Community Service (e.g. baby sitting, pet sitting, snow removal, lawn care)	Money management

Block D: All School Celebrations, Events, Tasks, and Projects
Harvest Festival
*Badger Rock Resilience & Sustainability Conference (Sample Unit in Appendix A)
Earth Day Celebration
Pi Day (March 14): A Mathematical Experience
Preparation of School Lunches
School Store
Student Governance Body

I like living here, but if there was a school here, I could meet with my son's teachers. He is bored and I am afraid he will start making trouble, and if I could meet with his teachers, we could figure out a way to keep him focused, instead of him wandering around the neighborhood.

(African-American resident, Southdale).

GRADE LEVEL LITERACY LEARNING BLOCK

WHERE I AM FROM: Inviting Students' Lives Into the Classroom

Context: Students will have already experienced writing in the classroom and know how to use the six traits to guide their process. In this lesson, they will continue to practice writing, peer editing, finishing a revised draft, sharing their work with others and giving and getting feedback.

Essential Questions:

- *Where Are You From?*
- *What are key writing techniques that move a poem forward (repetition in this instance)?*

Overview: Drawing from thoughts expressed in *Rethinking Our Classrooms Volume 1* teachers are encouraged to make students feel "significant" in their classrooms. This writing experience is intended to help develop emotional and physical safety as students share their real thoughts and feelings. This assignment will help build trust and caring within the classroom and model the kind of democratic and just society we envision, helping students understand what it feels like to live in such a society. This assignment represents one of the building blocks used to create a school that reflects the places from which student come.

Sample Activities:
1. Students read aloud George Ella Lyon's poem where I'm From and discuss it, noting the hook, I am from that is used repeatedly.
2. Students write lists drawn from their lives that match the ones in Lyon's poem and share them aloud.
3. Students brainstorm ways to make their emerging drafts sound like home by adding names or the details of their home, their family or the neighborhood.
4. Students write, using a key phrase like I Am From or a similar phrase that has meaning for them and ending the poem in a way that links their present to their past.
5. Students participate in a "read around" sharing their poems and hopefully finding an opportunity to feel significant and cared about.
6. Seated in a writer's circle, students exchange ideas to give writing feedback to one another to support adding details or authenticity.
7. Making use of peer feedback, students write a revised version that is technically correct and ready to be published.

Variations: Students can write versions that describe places they are from other than their family---such as their 5th grade school or they can use a different phrase to move the poem forward. Students who need modifications might dictate their poem or word with an adult to make needed revisions.

Assessment: Students can devise a rubric that enables them to assess what a good written piece looks like. It might look for voice, grammatical correctness, word choice. Students can also be assessed related to their ability to work with independence, give and take feedback, follow directions and participate in class discussions.

Standards:
B.8.1 Create or produce writing to communicate with different audiences for a variety of purposes.
B.8.2 Plan, revise, edit, and publish clear and effective writing.
B.8.3 Understand the function of various forms, structures, and punctuation marks of standard American English and use them appropriately in communications.
C.8.1 Orally communicate information, opinions, and ideas effectively to different audiences for a variety of purposes.
C.8.3 Participate effectively in discussion.

Resources: *Reading, Writing and Rising Up: Teaching About Social Justice and the Power of the Written Word, Home Wasn't built In A Day*

Partnerships and Supports: Working with professional writers might shed light on working through drafts to edit and improve writing.

GRADE LEVEL LITERACY LEARNING BLOCK

Statistics at the Middle School Level

Overview: As students proceed on this statistical investigation, they will pose questions, collect data, analyze data and interpret results. They will have repeated opportunities to explore and practice these concepts. At the end they will create a project to share their results. Projects chosen will relate to student's real lives, and to the real research projects and data collection needs of the RRC site. For example one project might be collecting data on rainfall, soil temperature over time, or growth time for particular plants.

Context: This is one of the strands from *Connected Mathematics* used in all MMSD middle school mathematics classes. We selected statistics as it is a critically important 21st century skill. Students will use *Data About Us* and the other two books from *Connected Mathematics* in all three years of middle school, developing sound mathematical skills, and learning important questions to ask when analyzing data. Students at BRMS will work with Connected Math in the context of the larger RRC campus, creating real and meaningful surveys, with useful results.

Essential Questions:

- *What is the question being asked?*
- *How might I organize the data?*
- *Which representation is best for analyzing the distribution of the data?*
- *Do I want to determine a measure of center or range of the data?*
- *How might I use graphs and statistics to describe a data distribution or compare two distributions in order to answer my original question?*
- *What is average, mean, median, mode?*
- *What does data look like in different forms eg. graphs, tables, box and whiskers, histograms, scatterplots, etc*

Sample Activities (Mathematical Goals):
1. What's Your Favorites Survey?
2. How is Data Collected and Compared?
3. What Do You Think Is the Typical number of Letters in Everyone's Full Name? Students collect and represent data on their names. Before starting they need to determine exactly what they consider to be a full name: nicknames? formal first names? They can select a way to organize and represent their data before discussing it with the class. Class discussion can touch on concepts of mean, median, mode and range as well as ways to display data.
4. Can students take away two names without changing the median? Explore the concept of median as a measure of center. Gain an understanding of how the median responds to changes in the number and magnitude of data values. ex. Does the median change if we add a very small or very large value to the data? Students can add or subtract certain names and see how it the distribution of data changes.
5. What is the difference between numerical and categorical data? By working with different types of data students can begin to understand what they can and cannot know from a set of data. ie There is no way to organize categorical data so no median or range can be

determined. Numerical data can be divided in half or ordered numerically. How one asks a question determines the type of data collected.

Variations: As teachers gain familiarity with the main concepts in Data Collecting and refine their teaching strategies, they can start to imbed the concepts throughout the school day. Data collecting is a critical 21st century skill that students can practice again and again as they design various projects. Continued practice will help them develop sophistication and deeper understanding of the key concepts. Beyond using these concepts in their own projects, students might recognize some of these concepts when talking or interviewing with community experts and it would be valuable to note their use by workers in various fields. In addition, it is possible to add the use of technology for collecting and/or analyzing data. Students who participate in an all school conference to share their research might be expected to include and explain the types of data they collected and how they analyzed their results.

Assessment: In the Connected Mathematics Teacher version there are a wide range of suggested assessments ranging from observing and listening to student articulation of ideas, looking at student work samples and assessing for complexity of ideas and understanding, based on rubrics and completed final projects

Standards:

Mathematics, Standard E: Statistics and Probability

E.8.1 Work with data in the context of real-world situations.
E.8.2 Organize and display data from statistical investigations.
E.8.3 Extract, interpret, and analyze information from organized and displayed data.
E.8.4 Use the results of data analysis.
E.8.5 Compare several sets of data to generate, test, and, as the data dictate, confirm or deny hypotheses.
E.8.6 Evaluate presentations and statistical analyses from a variety of sources.
E.8.7 Determine the likelihood of occurrence of simple events.

Resources: *Connected Mathematics* student and teacher materials, staff development opportunities offered by the Madison Schools, written material or sharing of teaching strategies by colleagues.

Partnerships and Supports: Learning about how data is collected and analyzed in the real world from partners such as the Center for Investigating Healthy Minds, Growing Power, MG&E and others.

GRADE LEVEL LITERACY LEARNING BLOCK

DESIGNING STEPPING STONES THAT DEMONSTRATE SYMMETRY

Context: We will be exploring concepts within geometry to apply to our creation of stepping stones and garden designs. Basic design elements within larger scale projects have significant influence over what is possible to create. Connecting these lessons to hands-on experiences with tangible, public results will help students stay engaged with their work.

Essential Questions:

- *What two dimensional shapes fit together on a plane?*
- *What different ways can patterns be repeated?*
- *What is a basic design element?*
- *How can you transform an initial idea drawing to a coordinate grid draft and then to a final product?*
- *Can you create a design with reflectional, rotational, and translational symmetry?*

Overview: The purpose of this unit is to familiarize the students with the multiple forms of symmetry, basic design elements, shape relationships, and coordinate grids. The big ideas that we will be addressing are as follows:

- Recognize symmetry in design
- Determine the design element that has been reflected, rotated, or translated to produce a design with symmetry
- Create design with reflectional, rotational, or translational symmetries
- Identify patterns that can be used to predict attributes of designs
- Relate rigid motions to the concept of symmetry
- Describe rigid motions in words and with coordinate rules
- Compose symmetry transformations

Sample Activities:

1. Explore concepts of reflectional, rotational, or translational symmetry and shape relationships (sides and angles) by identifying different forms of symmetry and basic design elements, and creating examples in class and at home.
2. Draft a design for an individual stepping stone that demonstrates symmetry, shape relationships and design elements. Work with rough drawings, coordinate drafts, and a plan for a final product before actually casting the design in a cement form. Plan a large scale garden area design with multiple stepping stones.
3. Create cement garden stepping stones, using glass beads, tiles, and other materials (new or used/recycled) that demonstrate symmetry in the different ways explored during the unit.

Variations/Extensions: Students might further explore symmetry concepts by creating designs on mosaic tiles for building walls (interior and exterior) or design a geometric mural of symmetry.

Designing and building raised beds would demonstrate various ways different geometric figures can have symmetrical patterns and designs. Designing bike racks or building simple structures, like shade structures, or garden hose holders would also demonstrate various ways different geometric figures can have symmetrical patterns and designs.

Assessment: Daily assessment of the students' practice work might include informal feedback or design critiques from peers to check for accuracy and understanding.
Once students have drafted plans for their stepping stones, they could present them to the class using a process similar to a writer's circle. Classmates could offer compliments for what they see as outstanding design and make any necessary suggestions for improvement. In their final work, students can be assessed on the complexity of their designs and the demonstrated understanding of the concepts studied. Each student will submit a paragraph explaining the symmetry and design concepts in their project and be assessed on their ability to articulate clearly the mathematical concepts they used. Finally, students would work as a group to layout and install their designs on the RRC grounds, working with volunteer landscape architects to create a new pathway.

Standards:
Mathematics, Standard A: Mathematical Processes
A.8.1 Use reasoning abilities to: evaluate information, perceive patterns, identify relationships, formulate questions for further exploration, evaluate strategies, justify statements, test reasonableness of results, defend work
A.8.2 Communicate logical arguments clearly to show why a result makes sense
A.8.3 Analyze non-routine problems by modeling, illustrating, guessing, simplifying, generalizing, shifting to another point of view, etc.
A.8.4 Develop effective oral and written presentations that include appropriate use of technology, the conventions of mathematical discourse (e.g., symbols, definitions, labeled drawings), mathematical language, clear organization of ideas and procedures, understanding of purpose and audience
A.8.5 Explain mathematical concepts, procedures, and ideas to others who may not be familiar with them
Mathematics, Standard C: Geometry
C.8.1 Describe special and complex two- and three-dimensional figures (e.g., rhombus, polyhedron, cylinder) and their component parts (e.g., base, altitude, and slant height) by naming, defining, and giving examples; comparing, sorting, and classifying them; identifying and contrasting their properties (e.g., symmetrical, isosceles, regular); drawing and constructing physical models to specifications, explaining how these figures are related to objects in the environment
C.8.2 Identify and use relationships among the component parts of special and complex two- and three-dimensional figures (e.g., parallel sides, congruent faces).
C.8.4 Perform transformations on two-dimensional figures and describe and analyze the effects of the transformations on the figures
C.8.5 Locate objects using the rectangular coordinate system

Resources: *Connected Mathematics*, Kaleidoscopes, Hubcaps, and Mirrors

GRADE LEVEL LITERACY LEARNING BLOCK

SEEDFOLKS Character Creation based on Paul Fleischman's book

Context: Engagement in the writing process will be on-going throughout student time at BRMS with repeated exposure to professional writers, quality young adult literature and a wide range of opportunities to develop personal writing skills. Themes related to culture, community and other school themes such as sustainability and resilience will be visited and re-visited in read aloud and literature experiences. Students will know the richness of enjoying and extending class read alouds and have experience peer editing guided by the six traits of a writer.

Essential Questions:

- *What does it means to be "Seedfolks" or a community of people who do something for the first time?*
- *Make connections to personal lives and BRMS as we are "The Seedfolks" of BRMS---How does it feel?*
- *What is needed to be successful?*
- *What is community?*
- *How might you describe one addition character that has a unique voice/personality and makes a contribution to the existing Seedfolks neighborhood garden?*

Overview: *Seedfolks* by Paul Flieschman offers a powerful literary experience focusing on the themes of diversity and community building. Flieschman powerfully offers thirteen vignettes that bring out the voice of different members of a run-down Cleveland neighborhood, who bond as they plant and tend a shared garden. Students will be exposed to Fleischman's writing techniques and use them to write their own character sketches. As students write, they will practice using similes, a literacy technique that Fleischman uses to add depth and sophistication to their own writing. Since their work will be published within the classroom, students will need to edit for correctness.

Sample Activities:

1.	Read aloud a character each day and discuss/record key characteristics of that personality.
2.	Teach what a simile and metaphor are and have students listen for and track how Fleischman uses them as each character unfolds. Students can illustrate a favorite simile and explain its meaning for public display.
3.	Invent a new character and draft a vignette using Fleischman's style of writing.
4.	Peer edit written drafts focusing on the following traits of a writer: voice, conventions, ideas, organization.
5.	Finalize personal vignettes and compile into a book that can be shared within BRMS via live readings, video presentations, or quiet personal readings.
6.	Discuss what it means to be "Seedfolks" or a community of people who do something for the first time and make connections to their lives and neighborhood communities as we are the "Seedfolks of BRMS"-----How does it feel? What is needed to be successful? What is community?

Community Building and Service Activities:

- Students will may plan and host a potluck event with the other people and organizations in the Resilience Research Center to help build a sense of community with the people around them every day.
- Students will may investigate opportunities to do service in the neighborhood. They will identify a need and work together to plan, organize and carry out a project that promotes community.

Variations: The book is available in Spanish and could be read in that language. Students could create informal dramatic presentations to show the characters. These dramatic representations could also be made into videos or uploaded to the school website. In addition students might create their own BRMS version of Seedfolks by interviewing the different adult workers or volunteers who are seen daily, but may not be known. This could be written, filmed or dramatized. They can demonstrate their understanding and commitment to *community* by creating an exhibit, a performance or some other final product.

Assessment: Assess by traits of a reader--ability to listen for key ideas and keep a running reading record of the story. Assess by demonstrated identification of similes or other literary techniques and student ability to articulate what they mean. Assess writing fluency and ability to follow the model as portrayed in the book. Edit as described above. Assess peer editing abilities and/or ability to incorporate the feedback from others in order to move from draft form to final form. Assess depth of understanding of literary themes, ability to take action or be involved in our classroom community and students' ability to articulate their understanding of what a community really is.

Standards:

English Language Arts
A.8.1 Use effective reading strategies to achieve their purposes in reading.
A.8.2 Read, interpret, and critically analyze literature
A.8.3 Read and discuss literary and nonliterary texts in order to understand human experience

Social Studies:
E.8.2 Give examples to explain and illustrate how factors such as family, gender, and socioeconomic status contribute to individual identity and development
E.8.3 Describe the ways in which local, regional, and ethnic cultures may influence the everyday lives of people
E.8.4 Describe and explain the means by which individuals, groups, and institutions may contribute to social continuity and change within a community
E.8.5 Describe and explain the means by which groups and institutions meet the needs of individuals and societies
E.8.6 Describe and explain the influence of status, ethnic origin, race, gender, and age on the interactions of individuals
E.8.7 Identify and explain examples of bias, prejudice, and stereotyping, and how they contribute to conflict in a society

Resources: Class set of *Seedfolks* books.

Partnerships and Supports: Having local writers visit as resource people within BRMS, the wealth of individuals within the RRC.

GRADE LEVEL LITERACY LEARNING BLOCK

YOUNG ADULT MINDFULLNESS CURRICULUM

Learning to BREATHE - Empowered to gain an inner edge!

(to be used in MMDS Study 2010-2011) By Patricia Broderick

Lesson 1 Theme: Body

1. Intro and Acronym (BREATHE)
2. Mindfulness/pay attention - My mindful/mindless life
3. Breath Awareness and Body Scan - Pick a practice

Lesson 2 Theme: Reflections Review and check in

1. Awareness of thoughts while sitting
2. The Big Event or Cast of Characters - Student Handbook
3. Thought Meditation (snow globe prop)

Lesson 3 Theme: Emotions

1. Focus on Emotions
2. The Line-up with Emotions Activity
   - "How does it feel?" Questions Activity
   - The Great Cover-Up
   - Surfing the Waves/music CD
3. Meditation on Feelings

Lesson 4 Theme: Attention

1. Wellness/awareness in/external stress
2. Case Study-teen stress
   - How Much Can You Handle? (tennis ball)
   - What's the best Balance?
   - What's my limit?
3. Slow it Down (Pay attention-movement)
4. Mindful Movement (sitting/standing)
   - In Student Handbook (palm press, upward stretch, seated tree, seated twist, mountain pose, cherry pick, forward bend, taking your seat)

Lesson 5 Theme: Take it

Review stress response/meanness (stationary) as it is (non-judgment) Calming your anxious mind

1. Ways we care for ourselves...or not Student Handbook
2. What I wish for myself/Message in Bottle
3. Loving-Kindness Meditation

Lesson 6 Theme: Healthy

1. Choosing to be mindful Habits
2. Mindful Quilt Activity of Mind
3. Closing/wallet cards

Each lesson will be taught in 30 minute sessions 2x/week for six weeks. Session content and activities may vary depending upon what arises from students.

GRADE LEVEL LITERACY LEARNING BLOCK

GARDEN JOURNALING

Overview: Students will be expected to keep a garden journal for the entire 3 years they spend at BRMS. The journal is a continuing record including entries such as garden activities, data about weather conditions that affect plant health and productivity, and mapping locations for crop rotation. These records are essential to analyzing the results for successful gardening which can be understood and transmitted to classes that follow and become part of the accumulated knowledge about successful gardening. The journal will have a literacy component that includes creative writing activities and mindfulness experiences.

Sample Activities:

Journaling will be divided into three parts.

1. **Regular Entries.** Each student will record biotic and abiotic factors affecting the garden : bees, insects pests, rabbits, etc.; rainfall, temperature, humidity, wind speed, etc. The log may also record any gardening activity in which the writer was involved or observed: beds prepared, seeds started, compost moved, seeds sprouted, height and condition of seedlings or plants, etc. Students will enter important data onto a computerized class record.

   Important for follow-up over the three years will be when (and where in the garden) particular varieties were planted, how long till seeds sprouted, how well they are growing and producing fruit or becoming ready to harvest. Emphasis in this section is on accurate, precise descriptions, e.g. shades of colors, signs of healthy or weak growth and developing the vocabulary equal to this running account. These entries can be made as appropriate Students' entries can be shared with the class and discussed. (What words and phrases were used that make the picture of the garden plants clear? Detailed? Accurate? What words and phrases compare plants with each other?)

2. **Mapping section**. Kids create a map of the garden beds where each type of plant is grown so that annual crop rotations can be tracked. Maps can show when varieties are planted (earlier or later in the season, keeping track of succession plantings). This section can include scientific experiments, mapping where some veggies are planted earlier than an expected "optimum" time, or later, to understand possible consequences of different plant times. Or popular ideas can be tested (playing different kinds of music to plants; pruning some tomato plants and not others to see if fruit are stimulated). A class wall-poster spread sheet or graph can provide an on-going, updated visual class record.

3. **Mindfulness Experiences**: On a regular basis students may sit quietly in the garden environment (outdoor or greenhouse) and focus all senses on observing the space around them in the garden: what they see, feel, hear, notice happening. They may describe their observations in words, drawings, or other media.

Creative journaling: Students should be encouraged to use the journal for garden-inspired writing -- poems, stories, essays dealing with some garden issue or event (fair trade, thinking like a weed in a row of lettuce, the secret life of plants, using all my senses to know the garden and all its inhabitants) The ideas for creative work should come from the students and their interests; these are only suggestive of the range of possibilities, though they can be offered to anyone who would like to think and write about them.) On a regular basis, time can be set aside for all students to complete a creative garden poem, story, essay or song lyric. Journal entries will not be limited to words. If students want to illustrate their entries or observations they would be strongly encouraged to do so.

Special interest projects could also be written about in the garden journal or included as art work or song compositions.

Sample Assessment: The journal becomes a garden and literacy portfolio for each student. It permits examining individual student's development in understanding the connections of environmental conditions and garden success, as well as providing evidence of growth in writing vocabulary and literacy skills. Examination of each child's journal can check completion of entries accuracy and descriptive clarity and variety. Favorite entries can be selected by each student to share with the class, either orally or in a collection of "Garden Tales and Poems".

Standards:
B.8.1 Create or produce writing to communicate with different audiences for varied purposes. Write a narrative bases on an experience that uses descriptive language and detail effectively, presents a sequence of events and reveals a theme.
C.8.1 Orally communicate information, opinions and ideas.
C.8.2 Listen to and comprehend oral communications.
C.8.3 Participate effectively in discussion.
D.8.1 Develop vocabulary and ability to use words, phrases, idioms and various grammatical structures as a means of improving communications.
D.8.2 Recognize and interpret various uses and adaptations of language in social, cultural, and professional situations.....

Community Resources and Partnerships: Local Neighborhood Farmers' Market, Robert Pierce CSA, and Growing Power in Madison, Partners in Place Circular/Seasonal Journaling

MULTI-AGE REAL WORLD INVESTIGATIVE PROJECTS

PLANTING

Context: This follows a unit in which students have already decided what they want to plant and created a design for planting. They have already decided how to prepare the planting beds, if they have not actually been outside to prepare them already. Students will be collecting sunrise and sunset data and monitoring the weather prior to this unit. They will already have experience conducting interviews with community members by the time of the year and know how to summarize the interview.

Essential Questions:

- *When is the best time to plant?*
- *How does a seed "know" it is time to germinate?*
- *Do all seeds use the same environmental cues?*
- *How do we decide when is the best time to plant seeds or our seedlings in the garden?*

Overview: Students will answer this question through researching, discussing, and determining the best weather conditions for planting their garden, monitoring environmental conditions until the determined criteria are met and planting their garden. After planting, they will evaluate their criteria based on continued monitoring of their plants. Integral to this unit is discussion of what causes seasons in the Northern Hemisphere vs. other parts of the planet. Students will also discuss how cultural practices related to planting come from an understanding of the needs of plants and an understanding of the seasons, but may need to be adapted if a group moves to a different latitude or different climatic conditions.

Sample Activities

1.	Discuss Leading questions--class choose what we don't know yet that we need to investigate.
2.	Research conditions for planting their particular chosen garden plants and seeds through a variety of methods: interviews with gardeners, consulting the Farmer's Almanac, reading seed packets, internet search—report findings to class.
3.	Discuss as a class which conditions seem to matter and why. (Consider needs of seeds for germination and sustained growth after germination). Which conditions can be measured scientifically? Which conditions are based on cultural beliefs? Do the cultural beliefs need to be adapted to the WI climate, Madison, WI, BRMS, or would they hold true anywhere? Decide what to look for in their garden.
4.	Set up a monitoring system for items such as soil temperature, weather, precipitation. 5. Activity to discuss what causes seasons, changes in day length., "Journey North Mystery Class experience that is all computer based --- all based on sunrise / sunset data that leads to this question (Why are seasons and day length more variable in WI than near the equator?
5.	Plant when the time is right!
6.	After planting, consider how we will be judge success? How do we know we chose the right time? How should we record our decisions and results for next year's class so we can learn from successes or failures? Revisit our criteria over next few weeks. Were we right? How do we know? Refer to Aldo Leopold's phenology records and look at them/try to keep our own.

Variations: Other classes would cover areas such as how to plant, how to use garden tools, making bed markers (plant id)

Sample Assessment: Each student group will report to the class on results of Activity #2. They will be assessed on whether or not they addressed the class questions from #1, if they conducted their interview or research in an appropriate and/or professional manner (discussed earlier in school year), if they understand what they are presenting, if they are clear about what they are presenting.

Science Standards addressed:
A.8.6 Use models and explanations to predict actions and events in the natural world B.8.6 Explain the ways in which scientific knowledge is useful and also limited when applied to social issues
C.8.2 Identify* data and locate sources of information including their own records to answer the questions being investigated
E.8.6 Describe through investigations the use of the earth's resources by humans in both past and current cultures, particularly how changes in the resources used for the past 100 years are the basis for efforts to conserve and recycle renewable and non-renewable resources
E.8.8 Using past and current models of the structure of the solar system, explain the daily, monthly, yearly, and long-term cycles of the earth, citing evidence gained from personal observation as well as evidence used by scientists
F.8.6 Understand that an organism is regulated both internally and externally Social Studies:
A.8.4 Conduct a historical study to analyze the use of the local environment in a Wisconsin community and to explain the effect of this use on the environment
A.8.7 Describe the movement of people, ideas, diseases, and products throughout the world
A.8.8 Describe and analyze the ways in which people in different regions of the world interact with their physical environments through vocational and recreational activities A.8.10 Identify major discoveries in science and technology and describe their social and economic effects on the physical and human environment
B.8.1 Interpret the past using a variety of sources, such as biographies, diaries, journals, artifacts, eyewitness interviews, and other primary source materials, and evaluate the credibility of sources used
E.8.3 Describe the ways in which local, regional, and ethnic cultures may influence the everyday lives of people E.8.5 Describe and explain the means by which groups and institutions meet the needs of individuals and societies
E.8.9 Give examples of the cultural contributions of racial and ethnic groups in Wisconsin, the United States, and the world

Resources: Journey North; Phenology data from Aldo Leopold Shack

Partnerships and Support: Local farmers, Community Ground Works, Aldo Leopold Center, Growing Power, Sarah Wright, with Center for Biology Education at UW

MULTI-AGE REAL WORLD INVESTIGATIVE PROJECTS

BUILDING SYSTEMS UNIT

Context: One of the goals of the entire site and our place-based curriculum is to showcase sustainable building practices and alternative energy sources. Students will become knowledgeable of the basic functions of all energy systems of buildings on-site. The standards covered by this unit intricately link with those of the garden requiring monitoring and understanding of weather and climate, the seasons, and data tracking methods.

Essential Questions:

- *How is energy produced and used in this building?*
- *What are the costs of this system (in dollars and in terms of environmental impacts)?*
- *Do we have a resilient system?*
- *Could we improve the building efficiency?*

Overview: The purpose of this unit is to familiarize the students with internal functioning of the site heating and cooling, electrical, and water systems and to involve them in improving the efficient use of those features. Topics will rotate over three years with four recurring components: evaluation of renewable vs. nonrenewable energy systems, cost analysis of systems, efficient use of systems, and application of on-site information to a comparable home or community system. During these units they will evaluate building materials, design and energy systems on-site, interact with experts on building function, and conduct some of their own experiments and analyses to deepen their understanding on the systems with a goal of improving overall efficiency of the building system.

Sample Activities

In the year where electricity is a focus

1.	Review atomic structure and where electrons are found.
2.	Learn about different ways electricity is produced, including fossil fuels production, PV and wind by touring onsite resources and working with models.
3.	Discuss pros and cons of production, including cost and pollution created.
4.	Build a small solar car and look at the conversion of electrical energy into kinetic energy. Compete to build the fastest car. (KEEP resource--a Focus on Energy Program-- listed below)
5.	Conduct an electricity survey of the building or classroom--# of bulbs, computers, appliances, etc, hours of use and estimate KWH use.
6.	Determine the amount of renewable electricity generated on-site and compare to classroom or building use.
7.	Read school to MGE bill and discuss the cost of electricity.
8.	Assess ways to reduce electricity use in the building. Create a contest between classrooms to reduce electricity use.

Variations: Energy monitoring club. Build solar cookers. Conduct a site evaluation for solar installations using solar pathfinder. Build a solar lighting system for the garden paths.

Sample Assessment: Conduct an energy survey of your home or other building in the neighborhood. Collect data and then make recommendations to the home owner on ways to reduce their electricity bill.

Standards:

Science:

A.8.6 Use models and explanations to predict actions and events in the natural world A.8.7 Design real or thought investigations to test the usefulness and limitations of a model

C.8.2 Identify* data and locate sources of information including their own records to answer the questions being investigated

C.8.3 Design and safely conduct investigations* that provide reliable quantitative or qualitative data, as appropriate, to answer their questions

C.8.6 State what they have learned from investigations*, relating their inferences* to scientific knowledge and to data they have collected

C.8.7 Explain* their data and conclusions in ways that allow an audience to understand the questions they selected for investigation* and the answers they have developed

D.8.1 Observe, describe, and measure physical and chemical properties of elements and other substances to identify and group them according to properties such as density, melting points, boiling points, conductivity, magnetic attraction, solubility, and reactions to common physical and chemical tests

D.8.5 While conducting investigations, explain the motion of objects by describing the forces acting on them

D.8.6 While conducting investigations, explain the motion of objects using concepts of speed, velocity, acceleration, friction, momentum, and changes over time, among others, and apply these concepts and explanations to real-life situations outside the classroom D.8.7 While conducting investigations of common physical and chemical interactions occurring in the laboratory and the outside world, use commonly accepted definitions of energy and the idea of energy conservation

D.8.8 Describe and investigate the properties of light, heat, gravity, radio waves, magnetic fields, electrical fields, and sound waves as they interact with material objects in common situations

D.8.9 Explain the behaviors of various forms of energy by using the models of energy transmission, both in the laboratory and in real-life situations in the outside world

E.8.6 Describe through investigations the use of the earth's resources by humans in both past and current cultures, particularly how changes in the resources used for the past 100 years are the basis for efforts to conserve and recycle renewable and non-renewable resources

G.8.3 Illustrate* the impact that science and technology have had, both good and bad, on careers, systems, society, environment, and quality of life

G.8.4 Propose a design (or re-design) of an applied science model or a machine that will have an impact in the community or elsewhere in the world and show* how the design (or re-design) might work, including potential side-effects

G.8.5 Investigate* a specific local problem to which there has been a scientific or technological solution, including proposals for alternative courses of action, the choices that were made, reasons for the choices, any new problems created, and subsequent community satisfaction

H.8.2 Present a scientific solution to a problem involving the earth and space, life and environmental, or physical sciences and participate in a consensus-building discussion to arrive at a group decision

Mathematics:
Standard A: Mathematical Processes
B.8.5 Apply proportional thinking in a variety of problem situations that include, but are not limited to Resources
D.8.3 Determine measurement directly* using standard units (metric and US Customary) with these suggested degrees of accuracy
E.8.1 Work with data in the context of real-world situations by:
E.8.4 Use the results of data analysis to:

Resources: KEEP program (k-12 Energy Education Program), funded by Focus on Energy, and MG&E will provide professional development for teachers in both School Building Energy Efficiency and Renewable Energy. They also have curriculum for building evaluations that can be used (NRES 734—Green and Healthy Schools Assessment, NEED school building survey, DoAble-Renewables—insulation creations, Solar Transmissions) Hoffman Architects, provide educational materials on building construction, energy in building. MG&E—provide access to building energy usage data (real time), energy bills, scholarships for teacher PD

Partnerships and Support: MG&E and Hoffman provide experts to help tour building along with custodial staff.

MULTI-AGE REAL WORLD INVESTIGATIVE PROJECTS

FAMILY FOODWAYS

Context: In a three-year rotation in multi-age classes, this foodways project will alternate with other projects investigating family culture (perhaps "Occupations, Recreation, Celebrations, Religion, and Other Family Practices" or "Storytelling, Crafts, Music, and Other Family Arts"). In each project in this cycle, students develop fieldwork and analytic skills. These projects exemplify BRMS's commitment to culturally relevant instruction – students see that their family's cultural practices are significant in the curriculum, and they begin to deeply understand the cultural practices of other students in the class.

Essential Questions:

- *How does your family raise, preserve, buy, cook, serve, remember, and celebrate with food?*
- *Do your classmates' families have different food practices?*
- *What can we learn about our own culture and the cultures of our classmates through looking at family foodways?*
- *What influences our cultural understanding of food and food traditions?*

Overview: Foodways is a comprehensive term, referring to all cultural practices, systems, memories, and beliefs related to food. By the end of this project, students will have developed skills in documenting culture and increased their understanding of the role of food in their own and among many other families.

Sample Activities

1. Every day in class, the teacher and students briefly explore a new aspect of food (e.g. food practices of ancestors, gardening, mealtimes, use of food in gifts and other exchanges). When a student is unable to complete a particular homework assignment with their immediate family, s/he will document the foodways of extended family, neighbors, or family friends.
2. For homework that afternoon or evening, students develop multiple fieldwork skills (e.g. observational writing, interviewing, photography, mapping) as they document this aspect of food in their family.
3. The following day, as students report on their fieldwork, the teacher helps students develop analytic skills in recognizing patterns, variation among cultural groups, use of tools and materials, skills and knowledge of practitioners, occasions for use, functions of cultural practices, and aesthetics and other values.

Possible Extensions: Fieldtrip to one or more families to observe family foodways, classroom potluck to which families bring favorite dishes, media projects

Assessment: For a final assessment, some students incorporate their fieldwork notes about the many aspects of their own family's foodways into an illustrated essay published on the school website. Other students may opt to write a comparative essay about one aspect of family foodways

(e.g. beliefs about food, food used as decoration) in their community, based on the field notes of and interviews with their classmates. Rubrics will guide students to include many concrete details, choose details that represent family or foodway practices, and apply analytical skills.

Standards:

Social Studies

A.8.8 Describe and analyze the ways in which people in different regions of the world interact with their physical environments through vocational and recreational activities.

B.8.1 Interpret the past using a variety of sources, such as biographies, diaries, journals, artifacts, eyewitness interviews, and other primary source materials, and evaluate the credibility of sources used

E.8.2 Give examples to explain and illustrate how factors such as family, gender, and socioeconomic status contribute to individual identity and development

E.8.3 Describe the ways in which local, regional, and ethnic cultures may influence the everyday lives of people

E.8.4 Describe and explain the means by which individuals, groups, and institutions may contribute to social continuity and change within a community

E.8.9 Give examples of the cultural contributions of racial and ethnic groups in Wisconsin, the United States, and the world

E.8.11 Explain how beliefs and practices, such as ownership of property or status at birth, may lead to conflict among people of different regions or cultures and give examples of such conflicts that have and have not been resolved

E.8.13 Select examples of artistic expressions from several different cultures for the purpose of comparing and contrasting the beliefs expressed

E.8.14 Describe cooperation and interdependence among individuals, groups, and nations, such as helping others in times of crisis

Language Arts

A.8.4 Read to acquire information.

B.8.1 Create or produce writing to communicate with different audiences for a variety of purposes.

B.8.2 Plan, revise, edit, and publish clear and effective writing.

C.8.1 Orally communicate information, opinions, and ideas effectively to different audiences for a variety of purposes.

C.8.2 Listen to and comprehend oral communications.

C.8.3 Participate effectively in discussion.

E.8.3 Create media products appropriate to audience and purpose.

F.8.1 Conduct research and inquiry on self-selected or assigned topics, issues, or problems and use an appropriate form to communicate their findings.

Resources: Teachers' Guide to Local Culture, pp. 26-30, 52-54, and 69, http://csumc.wisc.edu/WTLC/?q=resources
Kids' Field Guide to Local Culture, pp. 12-13, 16-18, 25-26, 28-36, 50-57, 90-91, http://csumc.wisc.edu/WTLC/?q=resources

Partnerships and Support: Wisconsin Teachers of Local Culture and Culinary History Enthusiasts of Wisconsin (CHEW)

MULTI-AGE REAL WORLD INVESTIGATIVE PROJECTS

COMMUNITY FOOD SYSTEMS

Context: In a prior "Family Foodways" project, this multi-age class will have documented the ways multiple families raise, preserve, buy, cook, serve, remember, and celebrate with food. In this project, students will extend their study of expressive family culture to an inquiry into community food systems. In a three-year rotation in multi-age classes, this project will alternate with other projects examining community systems (e.g. housing, transportation, employment). In each project in this cycle, students develop in-depth investigative, decision-making, design process, and civic engagement skills. In the first years, projects will likely be simpler than described here, but as expertise accumulates in the continuous culture of multi-age groups, projects will become more complex.

Essential Questions:

- *What food systems operate in our community?*
- *What are food issues and opportunities in our community?*
- *What change(s) in food systems do we want to and are able to effect?*

Overview: Students will describe elements of food systems, identify significant social, economic, and political issues, and search for opportunities for improving food systems in the area around BRMS. Whether narrowly focused in the immediate neighborhood south of the Beltline and east of Highway 14, or broadened out to the greater South Madison community, the class will examine topics such as distance and transportation to farmers' markets, grocery stores, restaurants, delis, coffee shops, classes, and other food services; access to healthy foods; access to community gardens; cost of food production, distribution, and preparation; meals for the elderly; occasions for community food celebrations; and local health issues related to diet. This is a community service project in which students investigate issues in order to find opportunities for taking civic action. It is also an emergent project – every time it is taught it will have different content depending on results of prior school projects, student interests, and opportunities presented by partners in the community, hence also some variation in standards and assessments.

Sample Activities

1. Draw on student and community media to illustrate the design process: forming questions, gathering data, planning products (e.g. media, civic engagement), creating drafts/initial actions, getting feedback (e.g. from media users, community members), revising products, evaluating total process.
2. Engage students from the beginning in archiving documents created in the design process -- as a way to build local knowledge at BRMS, and as a source of information and media to use in community service products/actions later in the project.
3. Use films and other media to explore the difference between local food systems (e.g. What's On Your Plate?) and national/global food systems (e.g. Food, Inc.).
4. Generate questions about the community's food systems, and sort questions by possible procedures for answering them – e.g. community survey, community map, fieldtrips, interviews, document search.

Sample Activities continued...

5. Identify community partners and resources that might help answer these questions.

6. Complete one or more preliminary information gathering tasks such as the following:

   ~ Review data collected by earlier classes at BRMS; and draft, revise, circulate, tabulate, and analyze results of a survey probing for community food services, practices, preferences, and issues;

   ~ Map community food businesses, gardens, services, vacant land, etc.;

   ~ Take one or more fieldtrips to document representative food system sites;

   ~ Research history of food systems in the community (e.g. hunting & gathering, farming, urban development).

7. Choose one sub-system, question, issue, or opportunity to investigate in greater depth – typically the class chooses a whole class focus, and individuals or small groups choose which aspect to research or information source to utilize that contributes to the whole investigation.

8. Use this in-depth research to design and implement a civic product or action for improving one aspect of a community food system: determine purpose and audience of the product or action: e.g. educating the community, persuading the general public, collaborating in the city or state legislative process, protesting an unjust practice, supporting local food alternatives (e.g. PR for a farmers' market), organizing a community resource (e.g. food pantry), planting/building (e.g. helping an elderly person maintain a garden plot, building compost bins and raised beds for community use); Use an iterative design cycle of information gathering, prototypes, feedback, new versions, implementation, additional feedback, and evaluation; Individuals and small teams choose discrete tasks that contribute to the design and implementation of the whole class product or action.

Abbreviations & Extensions

- Shorten the project by continuing a food systems project begun by another class.
- Shorten the project by using the preliminary research to create a single media product that helps students describe what they have learned about community food systems – thereby eliminating the further stages of additional in-depth research leading to a civic product or action.
- Rather than the whole class choosing a single topic for in-depth investigation, the teacher/class may decide that individuals or small groups may choose distinctively different sub-systems, questions, issues, or opportunities to investigate – leading to multiple and smaller civic products/actions.
- Maintain civic action even after class moves on to a new project.

Assessment: Students will maintain a design journal throughout the project that the student and teacher will periodically examine in the process of making design decisions and reviewing progress. At multiple steps in the overall process, students will be asked to complete discrete tasks and will receive feedback from their classmates and/or teacher on their performance of these tasks. Rubrics

will guide students through complex stages of in-depth research and product development, and frame teacher evaluation of student work.

Standards: As an integrative project, "Community Food Systems" maps very well with the Department of Public Instruction's five strands of "Applying the Academic Standards Across the Curriculum." Depending on variable scope and design each time this project is taught, it will at least partially address multiple Wisconsin Model Academic Standards, especially in Social Studies, Mathematics, and Language Arts, but also in Science, Art and Design, Family and Consumer Education, Health, Information and Technology Literacy, and other areas. Among possible relevant standards are the following:

Applying the Academic Standards Across the Curriculum
1) Application of the Basics
2) Ability to Think: Problem-solving, Informed decision-making, Systems thinking, Critical, creative, and analytical thinking, Developing and testing a hypothesis, Transferring learning to new situations
3) Skill in Communication: Constructing and defending an argument, Working effectively in groups, Communicating plans and processes for reaching goals, Receiving and acting on instructions, plans, and models, Communicating with a variety of tools and skills,
4) Production of Quality Work: Acquiring and using information, Creating quality products and performances, Revising products and performances, Developing and pursuing positive goals
5) Connections with Community: Recognizing and acting on responsibilities as a citizen, Preparing for work and lifelong learning, Contributing to the aesthetic and cultural life of the community, Seeing oneself and one's community within the state, nation, and world, Contributing and adapting to scientific and technological change

Social Studies
A.8.1 Use a variety of geographic representations, such as political, physical, and topographic maps, a globe, aerial photographs, and satellite images, to gather and compare information about a place
B.8.1 Interpret the past using a variety of sources, such as biographies, diaries, journals, artifacts, eyewitness interviews, and other primary source materials, and evaluate the credibility of sources used
C.8.7 Locate, organize, and use relevant information to understand an issue of public concern, take a position, and advocate the position in a debate
D.8.8 Explain how and why people who start new businesses take risks to provide goods and services, considering profits as an incentive
D.8.11 Describe how personal decisions can have a global impact on issues such as trade agreements, recycling, and conserving the environment
E.8.5 Describe and explain the means by which groups and institutions meet the needs of individuals and societies
E.8.8 Give examples to show how the media may influence the behavior and decision-making of individuals and groups
E.8.14 Describe cooperation and interdependence among individuals, groups, and nations, such as helping others in times of crisis
Mathematics
E.8.1 Work with data in the context of real-world situations by: formulating questions that lead to data collection and analysis, displays, summary statistics, and presentations
E.8.2 Organize and display data from statistical investigations using: appropriate tables, graphs, and/or charts (e.g., circle, bar or line for multiple sets of data), appropriate plots (e.g., line, stem-and-leaf, box, scatter)

E.8.3 Extract, interpret, and analyze information from organized and displayed data by using: frequency and distribution, including mode and range, central tendencies of data (mean and median), indicators of dispersion (e.g., outliers)
E.8.4 Use the results of data analysis to develop convincing arguments, draw conclusions
E.8.5 Compare several sets of data to generate, test, and, as the data dictate, confirm or deny hypotheses

Language Arts
A.8.4 Read to acquire information.
B.8.1 Create or produce writing to communicate with different audiences for a variety of purposes.
B.8.2 Plan, revise, edit, and publish clear and effective writing.
C.8.1 Orally communicate information, opinions, and ideas effectively to different audiences for a variety of purposes.
C.8.3 Participate effectively in discussion.
E.8.1 Use computers to acquire, organize, analyze, and communicate information.
E.8.3 Create media products appropriate to audience and purpose.
F.8.1 Conduct research and inquiry on self-selected or assigned topics, issues, or problems and use an appropriate form to communicate their findings.

Science
F.8.10 Project how current trends in human resource use and population growth will influence the natural environment, and show how current policies affect those trends.
G.8.5 Investigate a specific local problem to which there has been a scientific or technological solution, including proposals for alternative courses of action, the choices that were made, reasons for the choices, any new problems created, and subsequent community satisfaction.
Art and Design
E.8.2 Communicate complex ideas by producing design art forms, such as graphic design, product design, architecture, landscape, and media arts, such as film, photography, and multimedia.
E.8.4 Communicate complex ideas by producing visual communication forms useful in everyday life, such as, sketches, diagrams, graphs, plans, and models.
Family and Consumer Education
D.1. Explain what it means to take informed, socially responsible action
D.2. Survey the school, neighborhood, or community to identify a family-related issue or concern
D.3. Develop, implement, and assess an individual, family, or community action plan designed to reach specific goals
D.4. Apply leadership skills during classroom discussions or FHA-HERO chapter meetings; such as skills in perceiving problems and thinking them through, presenting ideas, understanding others' views, understanding and responding to conflicts and disagreements that arise during discussion, and applying citizenship values (including honesty, respect, and responsibility)
D.5. Set an individual, family, or community action goal and record progress toward accomplishment of the goal

Health
C.8.1 Demonstrate the ability to individually and collaboratively apply a decision-making process to health issues
C.8.2 Analyze how health-related decisions are influenced by individuals, family, and community values
C.8.3 Analyze how decisions regarding health behaviors have consequences for themselves and others
G.8.3 Demonstrate the ability to work cooperatively when advocating for healthy individuals, families, schools, and communities

G.8.4 Demonstrate the ability to influence and support others in making positive health choices
Information and Technology Literacy
B.8.1 Define the need for information
B.8.2 Develop information seeking strategies
B.8.3 Locate and access information sources
B.8.4 Evaluate and select information from a variety of print, nonprint, and electronic formats
B.8.5 Record and organize information
B.8.6 Interpret and use information to solve the problem or answer the question
B.8.7 Communicate the results of research and inquiry in an appropriate format
B.8.8 Evaluate the information product and process

Partnerships and Support: Work with the Community Study group at UW Madison (Prof. Bell et al) in gathering and analyzing data in the BRMS community. Additional community, university, and not-for-profit experts and volunteers will need to be identified prior to and during each project.

MULTI-AGE REAL WORLD INVESTIGATIVE PROJECTS

Studying Pricing, Marketing and Fair Trade in a Global Economy

Context: Students have been involved in gardening from planting to tending to harvesting to consuming garden produce. Just as the work in planting and maintaining a garden is real work, the products of the garden are not abstractions, but have value in the community. This study aims to help students understand how commodities are sold and bought, how prices for commodities are arrived at and change, depending on factors of timing, competition, supply and demand, fairness. Fairness is an important ideal for middle school children. The Madison city council has declared Madison a Fair Trade Town (the 16th city in the U.S. to do so, according to the Isthmus of June 25, 2010). Exploring the idea of fair trade will be an important component of the study.

Essential Questions:

- *How do foods and other agricultural products get to the people who want and need to use them?*
- *What types of agricultural products come from nearby places?*
- *What products are we growing in our garden? What agricultural products come from far away?*
- *What do we find along a supply chain from producer to consumer?*
- *How is "value added" and cost added to items along the supply chain from producer to consumer – production, processing, transport, marketing?*
- *Each product we buy has a price. How are the prices decided for each item? Who decides? Is there a "fair" price?*
- *Why did Madison's city council declare Madison a Fair Trade Town? What is "Fair Trade"?*
- *How does "Fair Trade" make a difference to the producers? To the buyers?*
- *Why do people decide to buy one item rather than another?*
- *What are some other reasons, besides the price, that convince people to buy one product rather than another?*

Sample Activities

1. Students can read relevant newspaper and magazine articles about buying locally and non-locally produced items and about Fair Trade (e.g. "A Fair Trade Boom" in Green American, July/August 2010; "As Labor Costs Rise in China, Textile Jobs Shift Elsewhere", NY Times, 07/17/10). However, the major strategy for collecting information and opinions will be through direct observation and interviews with participants in buying and selling various products.
2. Select several food items growing in the school garden and used in our school lunch project.. Discover what these items cost at different local grocery stores/super markets. If there is more than one brand of a product, note if the prices differ and try to discover why there is a difference. Have students prepare a brief questionnaire to ask of super market and farmers market sellers who are wiling to be interviewed about how they decide prices for items and how they choose what items to carry.

Sample Activities continued....

3. Compare prices at local stores, farmers markets of items grown in the garden and of agricultural items we can't or don't grow (e.g. lettuce, tomatoes, bananas, grapes, zucchini, potatoes, snap peas, green beans, strawberries, peaches, coffee, cacao for chocolate). Keep a record of price changes at different times of the growing season and throughout the year.
4. Invite the local alder to visit the class and discuss why the city council acted as it did to declare Madison a Fair Trade Town. Prepare questions that explore some of the consequences of fair trade buying and selling.
5. Invite nearby store managers to visit the class to discuss how they price various items. They could also discuss the "supply chain" from grower to seller and how its length and complexity affects cost. Several local stores sell fair traded foods and other goods. The class could arrange a study trip to a company or store selling fair traded items. (See Resources below for suggestions.) Alternatively, managers from these places could visit the school and discuss some of the values and difficulties of selling fair trade items.
6. An alternative to having owners and managers visit the school or to going on a study trip, is having a discussion via Skype. This makes possible going even further afield and holding Skype discussions with business people and school students in other cities, even in other countries. (See Resources below.)
7. Students could work together to set up a "Fair Trade" shop as an ongoing project for the school. Interested students might be helped to set up and run their own CSA.

Sample Assessment: Students can develop a mural showing various "supply chains" from grower to seller, those for goods grown and sold locally and some for goods grown at a distance but sold locally, showing how costs are affected by actions along the way, e.g., by needs for transport and processing of items. The mural will demonstrate their understanding of underlying concepts.
Each student can choose a topic for an essay: built on the data collected about price changes for items early or later in the harvest season; discussing price and other reasons for choosing items to buy; or discussing pros and cons of fair trade practices learned from discussions with store managers, local alder, etc. These should identify relevant concepts developed during the study.

Resources: 1. Willy Street Coop and other local stores sell fair traded food and other items.
2. "Just Coffee" is a local coffee roasting companies whose owners have visited and know many of the Central American growers of the fair trade coffee beans they buy.
3. Patrick Beckett is a former Madisonian who has a coffee roasting business in Denmark.
4. Current magazine and news articles (see above for two examples).

Sample Standards:

Social Studies - Standard D: Economics
D.8.1 Describe and explain how money makes it easier to trade.....and compare the value of goods and services
D.8.2 identify and explain basic economic concepts: supply, demand, production, exchange.....labor, wages, and capital, etc.
D.8.3 Describe Wisconsin's role in national and global economies
D.8.4 Describe how investments in human and physical capital, including new technology, affect standard of living and quality of life
D.8.6 Identify and explain various points of view concerning economic issues

MULTI-AGE REAL WORLD INVESTIGATIVE PROJECTS

Neighborhood Mobile Games (multi-age media project)

Context: By "mobile game" we mean a range of interactive place-based media -- from simple tours to more complexly scripted challenges -- that incorporate GPS and other mobile technologies. Neighborhood mobile games (NG) use authentic roles, quests, and documents to structure engaging field experiences. To design high quality NG, students need to understand neighborhood systems and issues, and need access to documents (text, graphs, A/V) that represent the neighborhood. During three years of working in multi-age real-world projects, students will investigate and document many cultural and natural systems.

These inquiry projects will usually morph into public media or civic action projects. Media components, such as NG, will at first need to be guided as whole class processes, but eventually returning upper-level students will be able to pass on their media, research, and design skills to new students, at which point NG and other media can more easily be included in any real-world projects. In the scenario for this model unit, imagined as a spring project, students will have already studied gardens and energy systems at the Resilience Research Center site, and have studied the practices, expressions, and values of some nearby residents – but will be exploring NG for the first time.

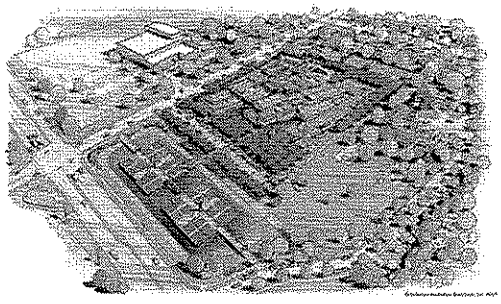
Leading Questions:

- *What cultural and natural systems operate at the Badger Resilience Center site and in nearby neighborhoods?*
- *What game features can help guest players interact most meaningfully with our site and neighborhoods?*

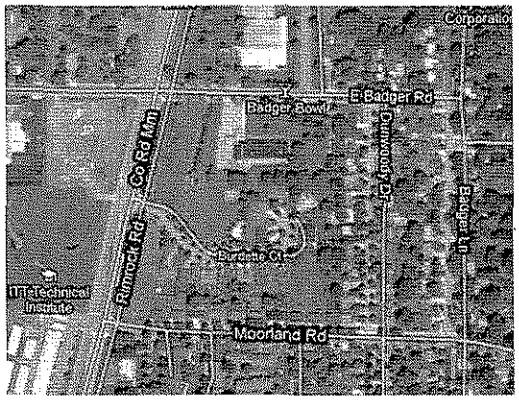
Overview: Students will initially play and then research and design multiple place-based tours and games, some at the Badger site and immediate neighborhood, some farther afield. As game players and content researchers, students will take on fieldwork identities and develop skills for such roles as ethnographer, photographer, and geographer. To learn their overriding role as a game designer, they need to become immersed in multiple design experiences in which they regularly debrief game play, brainstorm and prototype game concepts, and evaluate and revise game versions. Because students make many choices in such a design process, this will be an emergent project in which the teacher, as pedagogical designer, evaluates daily learning events to revise curricular plans, thus engaging student interest and creating interactive activities that address immediate opportunities for concept and skill development.

Sample Activities:

- Show media and engage in discussions for an introductory exploration of what is meant by "place," "system," "neighborhood game," and "design process."
- Play "**Mobile Bingo**" at the Badger Resilience Center site, using mobile devices to quickly discover, document, and interact with locations, people, and objects. Debrief game experience and brainstorm revising the game for use by visitors.

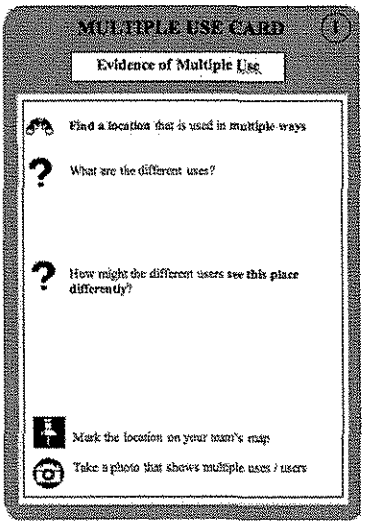


- Play "**Contested Places**" in a several block area around the Badger Resilience Center site. Students take on multiple fieldwork roles to complete mini-quests that guide them in documenting and mapping such dynamics and issues as multiple use, accessibility, crowding, privacy, aesthetics, traffic, upkeep, danger, development, "old vs. new," and "buildings vs. nature." Back at school, students display their documents in slide shows, maps, and other media. Finally, the class debriefs the experience, especially focusing on the concept of "contested places" and how it might be used to build new NGs.

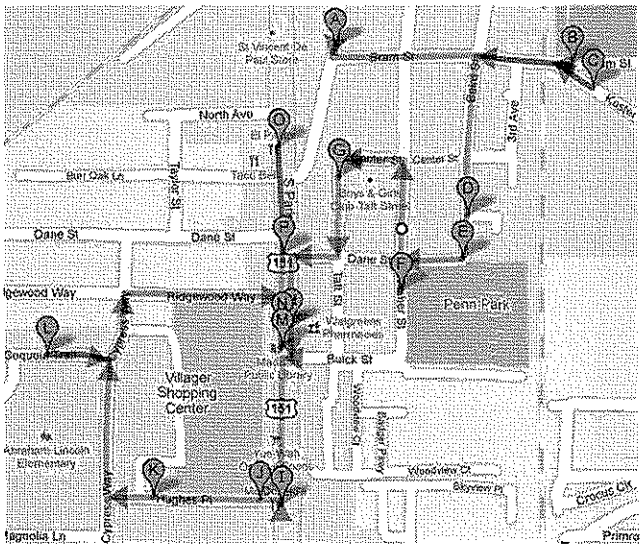


- Play "**Saving Lake Wingra**," an Augmented Reality (AR) game, on a fieldtrip to the western shore of Lake Wingra. Students take on the roles of environmental historian, wildlife ecologist, and landscape architect to gather data with GPS-enabled PDAs. Back in class, in a simulated City Council meeting, students use this data as evidence to argue for or against plans for a new marina, lakeside condo, control of invasive species, and reduction of stormwater runoff. The post-game debriefing session will zero in on the affordances of AR and on a comparison of place-based games in which players create documents versus games in which players view documents created by others.

- Play the "**Mobile Card Game**" to explore foodways in the heart of the Bram's Addition and Burr Oaks neighborhoods, about a mile walk from Badger Rock Middle School. Students receive a set of task cards, such as Places (e.g. cards for documenting restaurants, groceries, gardens), People (e.g. cards guiding players to observe or interview), and Uses (e.g. cards prompting players to look for sites or organizations providing information, special meals, celebrations). Back in the classroom, students use a template (name, photo, description, "interview") to transform data picked up in the field into scripts for NPCs (non-playing characters), which the teacher will then incorporate into an AR tour about foodways in South Madison.



- Tour "**South Madison Foodways**," an AR experience in which students will see themselves, and fictional characters they've created, as NPCs based on data they collected and opinions they formed while earlier playing the "Mobile Card Game." These NPCs will be located next to key food establishments and community organizations in South Madison. For example, players may encounter NPCs shopping at Yue-Wah Oriental Foods or Mercado Marimar, gardening at Quann Community Gardens, taking care of chickens in a family backyard, eating fast food at McDonalds or school lunch at Lincoln Elementary, getting information about food at the South Madison Public Library, learning about healthy eating at the Boys & Girls Club or Harambee (South Madison Health & Family Center), reminiscing about farming and gardening at Quaker Housing, or attending a potluck at Mt. Zion Baptist Church or Penn Park. As the class debriefs their experience in creating and taking this tour, three new questions might emerge: Does this tour accurately represent different groups and their foodways? What research would be required to make this tour more informative? How might this tour be changed into a more interactive game?



- Create one or more NG with the following design steps and processes:
  - Structure design work with a design board, task cards, collaborative teams, design journals, and critique sessions;
  - Choose a system, question, or issue to investigate and then represent in a NG;
  - Choose a neighborhood location for the NG;
  - Gather information by reviewing prior documents and engaging in new field research;
  - Determine purpose and audience of the NG;
  - Brainstorm possible game mechanics;
  - Use an iterative design cycle of prototypes, feedback from game play, additional research, new versions, additional feedback, and evaluation.

Variations

- Play just one of the above games ("Mobile Bingo," "Contested Places," "Saving Lake Wingra," or "Card Game") as part of another project or unit.
- Shorten the project by playing fewer games.
- Expand the game play component by playing games set at UW-Madison or in additional neighborhoods, or in future years by playing NGs created by other BRMS classes.
- Initially focus on creating tours and games to be played by visitors to the Badger site (school, neighborhood center, community gardens, energy center).
- Allow individuals and small teams to create their own NGs instead of the whole class collaboratively creating a single game.

Assessment: Students will use response/critique forms to reflect on their game-playing experiences and to analyze game features. They will maintain a design folder to archive research documents and design versions. They will also keep a design journal to track fieldnotes, experiences, ideas, work plans, and feedback. Rubrics will guide students through complex stages of in-depth research and design, and frame teacher evaluation of student work.

Standards: "Neighborhood Mobile Games" is an emergent project that will vary with prior experiences, student interest, available research, teacher expertise, and game location, challenge, content, purpose, audience, and complexity, but it will always lead to the kind of integrated learning called for in the Wisconsin Department of Public Instruction's five strands of "Applying the Academic Standards Across the Curriculum." Since this project is ideally suited to follow a community-based field investigation, see "Community Food Systems," a companion model unit, for some of the Wisconsin Model Academic Standards that may be covered with this game project.

Resources:

- James M. Mathews, Using a studio-based pedagogy to engage students in the design of mobile-based media. *English Teaching: Practice and Critique:* May, 2010, Volume 9, Number 1.

Partnerships and Support:

- Local Games Lab, affiliated with the Games + Learning + Society program at UW-Madison

Emergent Interests: Art

Public Art

Context: The entire cultural landscape (indoors and outdoors, private and public, professional and indigenous design & construction) has an aesthetic face. Students in the "Public Art" unit will critically observe and add to their community's visual culture. This unit uses a culturally relevant approach and an inquiry and design process to help students create place-based art that reflects and supports community resilience. "Public Art" is in the "Emergent Interests" block not only because it focuses on art but also because the length and shape of the unit depend on student interest, availability of community artists to lead or assist instruction, and requests from community partners for specific artistic projects. For example, a unit co-taught by a muralist will be different from a unit taught by a landscape architect; public art installed for an auto dealer across the road will be different from public art installed at the Resilience Research Center. Also, this can be a modular unit in which students passionate about art enroll for a whole year, while other students enter for one cycle of creating art for a specific client or location or with discrete materials or form.

Essential Questions

- *What is public art (e.g. how is it different from and similar to fine art and traditional art)?*
- *How can public art build community, and what processes do public artists need to go through to create work in public spaces?*
- *What opportunities do we have for creating public art in our community?*
- *Who can we collaborate with to help us?*
- *How can we create public designs that suit our community?*
- *What are the possibilities and limitations of the materials we will use for our public art?*
- *How do we develop skills to produce quality public art?*

Overview: This unit combines inquiries into community aesthetics with design-based studio art experiences.

Sample Activities

- Explore and compare several forms of art through field experiences:
  - Complete a survey of aesthetics in individual homes (e.g. wall hangings, displays, furniture arrangements, table settings, yard art, family crafts, colors, materials, traditions) and compile a list of features in traditional arts.
  - Visit an art museum or gallery and compile a list of features in fine arts.
- Explore public art through field work and discussions:
  - Take a field trip in a community (e.g. downtown Madison) where students will be able to document many examples of public art; after the field trip list types (e.g. sculpture, mural, sign, rock garden), purposes, and audiences of public art.
  - Create a slide show of Madison public art – in future years, this slide show can be shown to the class before taking a field trip to document public art in a different community (e.g. South Madison), so that eventually the school will have an extensive archive of documents about public art in many communities.
  - Brainstorm possible kinds of public art this class wants to create.

Sample Activities continued...

- Find one or more places to install student public art:
  - Survey community organizations and businesses to find a client for student art.
  - Focus on a preferred location and work with owners or clients to develop project.
  - Continue to add to a list of possible sites for public art created by students in future classes.

- Design and complete work in a studio setting:
  - Explore local aesthetics by playing the "Everyday Art" Neighborhood Game at the chosen site.
  - Sketch preliminary designs and choose several to show to the "client" or others interested in the site.
  - Create budget for project; Write and submit public art grant to support project.
  - Experiment with different materials to use in the final product.
  - Create a model of the final design; evaluate; revise.
  - Create final public art with help of professional, volunteer public artists.
  - Complete final work.

- Install, publicize, and celebrate!

Variations

- In the first few years, this unit may focus entirely on installations at the Resilience Research Center site.
- While students in a shorter unit will likely work together on a single work of art, in a longer unit multiple smaller groups of students can each create and install their own work.
- A similar unit could be developed on public performance art focusing on street music, dance, theatre, poetry, parades, processions, festivals, and other outdoor events.

Assessment: Students will maintain a design journal throughout the project that the student and teacher will periodically examine in the process of making design decisions and reviewing progress. At multiple steps in the overall process, students will be asked to complete discrete tasks and will receive feedback from their classmates and/or teacher on their performance of these tasks. Rubrics will guide students through stages of product development and frame teacher evaluation of student work.

Standards: Whatever the focus and duration, this unit will always address at least some of the individual standards in each the six main strands of the Wisconsin Model Academic Standards for

Art & Design: Knowing, Doing, Communicating, Thinking, Understanding, and Creating. The following are particularly relevant:

- D.8.1 Know about the history, public art, and unique architecture of their cultural community
- D.8.2 Know about artists and designers, such as architects, furniture designers, critics, preservationists, museum curators, and gallery owners, in their community
- E.8.2 Communicate complex ideas by producing design art forms, such as graphic design, product design, architecture, landscape, and media arts, such as film, photography, and multimedia
- E.8.3 Communicate complex ideas by producing popular images and objects, such as folk art, traditional arts and crafts, popular arts, mass media, and consumer products

Partnerships and Support

- Anne Pryor, Folk and Traditional Arts Specialist, Wisconsin Arts Board (BRMS Advisory Board member)
- Brenda Baker, Artist, Exhibit Director, Madison Children's Museum and 20 years creating work in public spaces.
- Madison Children's Museum Art Studio, off-site classes in public art.
- UW Madison Art Department, visiting artist series
- Mary Hoeferle, Asst. Prof., Art Education, UW-Oshkosh
- Volunteer artists

All-school Events, Tasks, and Projects

Badger Rock Conference on Resilience

Context: As a small school, we will be able to coordinate more all-school events, tasks, and projects than is possible in a larger middle school. BRMS will consciously develop a cohesive school culture in order to create an identity larger than individual classrooms and their projects. A backbone of the BRMS identity is collaboration: working successfully with other middle schools, individual middle school classes, students, and teachers who are also working for resilience and sustainability. As students help plan and host an annual conference for middle school students, they will develop leadership skills in the context of community service and civic engagement.

The conference, perhaps held on the Friday and Saturday closest to Earth Day, will become an annual rite of accountability. Students may elect to either present the best of their work from the past school year in this very public forum or instead showcase their work in the preceding week for an all-school audience. The prospect of presenting to a real-world audience will be used to motivate high-quality work. Thus the conference will function as a touchstone throughout the year: Is the work I am creating of the quality I want to present at the conference? Will conference attendees easily understand the presentation I am preparing for first review by my classmates? Will conference attendees easily understand the presentation I am preparing for? What can I learn to strengthen my presentation after my first review by my classmates?

Essential Questions

- *What are our connections to other middle school students working for personal and community resilience?*
- *What are our connections to our immediate neighborhood, the larger Madison community, and our region?*
- *What responsibilities do we have because of our connections? How do we serve our communities?*
- *When is our work (e.g. community research, media products) of sufficient quality to be of value to others?*
- *How can student work contribute to community resilience?*
- *What are the purposes and who are potential audiences of the Badger Rock Conference on Resilience?*
- *What formats will be most useful for showcasing our work at school and at our conference?*
- *What does it take to organize and host a successful conference?*

Overview: The details for this conference have of course not yet been decided, since they must emerge out of the formative years of the school. The public conference will likely not happen until the third year when all grade levels will be present, but in the first two years we will develop an annual in-school showcase, with family members and members of the RRC campus present. Over time, a full suite of public events will emerge at the Resilience Research Center. A key decision for the Earth Day Conference on Resilience will be whether to limit it to middle schools while reaching out to distant places; collaborate with other site partners and functions (e.g. CRC, Growing Power, MG&E, Neighborhood Center) and focus on bringing all ages from nearby communities to this event; or some combination such as a middle school conference on Friday and a community-wide conference over the weekend. Although the following activities will be significantly revised, even replaced, they create a scenario that illustrates how important this conference can be for student learning.

Sample Activities

- Participate in conference planning and preparation of presentations in all instructional blocks:
  - Engage each grade-level class in the literacy block in discussions and assignments that may lead to written work (e.g. creative writing, scholarly inquiry articles) for the all-school showcase and conference.
  - Engage each multi-age class in the projects block in discussions about multiple audiences for their work, including the showcase and conference.
  - In the emergent interests block, form a team of students who want extra responsibility in planning and hosting the conference.
- Experiment with and evaluate multiple formats for showcasing work of BRMS students (e.g. posters, talks, storytelling, art and media presentations/performances/publications, web pages, research articles, exhibits) throughout the school year.
- Evaluate the usefulness of these formats for multiple purposes (e.g. celebrating accomplishments, impacting society, getting feedback, assessing achievement, motivating development of quality products).
- Design digital tools, surveys, and discussion formats for giving and receiving useful feedback on presentations.

variations

- Host smaller groups of visitors throughout the school year, preparing tours, activities, and discussions for use with the guests.
- Collaborate with partners at the Resilience Research Center in creating other public events.
- Create other complex all-school projects that thread together numerous curricular goals and instructional groups.

Assessment: Teachers will be responsible for using the conference and showcase as a tool for assessing student learning, but assessment will not be limited to final products; instead, teachers and classmates will have given regular feedback throughout the process of creating work. Additionally, we will create a program assessment of the conference, using feedback from presenters, attendees, and planners in order to improve the design of the event.

Standards: Standards will be set for the individual instructional activities, pre-dating the conference, during which student work will be created, some for inclusion in the school showcase or conference. These might include any of the Wisconsin Model Academic Standards.

Resources

- Write grants to fund conference expenses.

Partnerships and Support

- Heron Network, a network of MMSD teachers and classrooms with 19 years experience in creating interschool student conferences, publications, performance venues, list serves, inquiry projects, museum exhibits, digital media, etc.
- Resilience Research Center partners
- Create a network of other schools, classes, teachers, and students who will regularly attend and present at the conference.

APPENDIX B: NEIGHBORHOOD RESEARCH

Perspectives from the Moorland Rimrock, Indian Springs and Southdale Neighborhoods.

Timeframe: April 1, 2010 - September 1, 2010 RESEARCH IS NOT COMPLETEDED

Researcher: Geri Weinstein Breunig

Description of the Project: In March, 2010, the *Center for Resilient Cities* received a project grant from the *Wisconsin Humanities Council* for an initial phase of community engagement. The project engages 30 residents of the Moorland Rimrock, Indian Springs and Southdale neighborhood in conversation about their community and the Resilient Research Center at Badger School.

Project Purpose: To enable 25-30 individuals who live or work in the Moorland Rimrock, Indian Springs or Southdale communities to:

1) Articulate their views regarding their community's strengths, and the social, economic and cultural challenges it faces; and
2) Offer their perspective on the project, its envisioned community benefits, and its potential impacts on their lives and the life of their family.

Their responses, elicited through one hour in-depth interviews, will help shape the redevelopment of Badger School. To facilitate their level of comfort, each respondent will receive an illustrated project description prior to the interview. At the interview, they will have time to ask questions or express immediate concern(s) regarding project elements - community center, community gardens, energy and water conservation, and green jobs – before responding to questions.

In view of the number of respondents and the degree of subjectivity encouraged, **conclusions are not possible. However, their responses will provide insight into citizen awareness, aspirations and willingness to invest mental and/or physical energy in particular project areas.** Specifically, responses will provide CRC and its partners with essential information on:

1. Community strengths to build upon and needs to address.

2. Local knowledge, experience and capacities.

3. Differences and commonalities in how residents view the project areas.

4. Unifying images and visions for their community that connect project areas.

6. Their perspective on the role of social and ethnic diversity in community identity

5. Educational needs and aspirations.

Respondent Recruitment: Community respondents will include homeowners, renters, business owners, educators, social providers and civic and/or cultural leaders. Reflecting the demographic profile of the Moorland Rimrock neighborhood, 20% of interviewees will be African-American and Hispanic. Interviews are not restricted to able-bodied individuals. Interviews are conducted in person. Questions are open-ended allowing for nuanced and complex responses. Although information secured in the interviews will be shared, names of respondents will be confidential.

Residents' Perspectives on the Proposed Charter School – Sample Responses

Residents expressed their perspectives on the proposed charter school in their responses to these two specific questions. A sampling of answers are listed below.

1. **Do you feel this is a good place to raise children? Can you talk more about why it is or why it is not?**

Sample Responses:

A real community has a school.
(Hispanic resident and parent, Indian Springs)

There is no school here, no after school activities, kids have nothing to focus on.
(Hispanic resident and parent, Moorland Rimrock)

There is no school here. I watch the children going down the hill to get the bus. It's so sad.
(Retired MPS teacher living in Moorland

I like living here, but if there was a school here, I could meet with my son's teachers. He is bored and I am afraid he will start making trouble, and if I could meet with his teachers, we could figure out a way to keep him focused, instead of him wandering around the neighborhood

(African-American resident, Southdale).

2. **The proposed project includes a charter school. Can you share your thoughts on having a charter school on this site?**

The charter school can be like a community square -this community needs this, kids need to be more tied to this community's strengths

(African-American parent, Southdale)

This school will bring people in the community together – right now everyone lives behind closed doors. Parents don't know each other.

(Hispanic parent, Southdale)

Parents here, no matter what is going on in their life want their children to have a good education. They will do whatever possible to make that happen- they will be involved in this school

(Social worker, Southdale)

I think the school is an amazing project – just the idea of urban agriculture and children and the connection to land and how important our food sources are- giving them the skills they need- we have a lot of low income children =especially with Latino population –coming from area where agriculture is way of life- the school can become an extension of that.

(Resident, parent and community social worker, Southdale)

With this school kids will learn about the land – and about what they can contribute to their family, to their community - they can grow vegetables, make dinner for their family- feel like they can make a contribution.

(Hispanic resident and parent, Moorland Rimrock)

We need a charter school- my daughter has learning problems and she feels lost right now – she needs a school where the teachers have more time for her to understand how she learns –and give her more opportunities to showcase her special talents.

(Resident, Indian Springs)

The charter school could connect kids to the community, to seniors, to the different cultures in the neighborhood

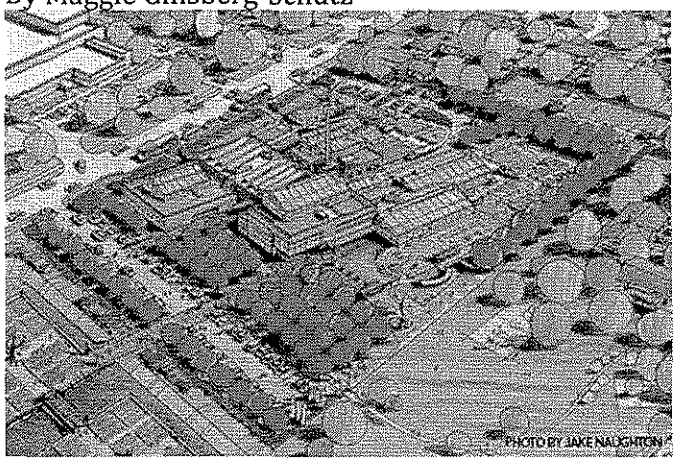
(Hispanic resident and parent, Moorland Rimrock)

APPENDIX C: MADISON MAGAZINE ARTICLE August 2010

Pay Dirt

A resilient plot of land on the city's south side will soon grow jobs and a whole lot more

By Maggie Ginsberg-Schutz



It is a cool, sunny morning on the south side of Madison, the kind of morning with the promise of later-day heat. Just off the Beltline at Rimrock Road, in a vacant weedy lot next to an abandoned building, thirty or forty people are hanging out near a pile of dirt. At the head of the crowd stands a man, ordinary save for his exceptional height, a good foot taller than everybody else. Cars whiz past bullet-like on the Beltline, their drivers oblivious to the scene below.

The man to whom all those gathered—neighborhood citizens, teachers, students, civic leaders, board members, business owners and professors—are paying rapt attention is six-foot-seven, sixty-one-year-old **Will Allen**, MacArthur Genius Grant recipient, one of *Time* magazine's 100 Most Influential People, Bill Clinton pal and founder of internationally renowned, Milwaukee-based Growing Power. That dirt is not just dirt—it's Allen's powerful worm-nurtured soil, three years in the making and, to many, a kind of gritty black gold. This is not merely an abandoned school on a vacant lot—it's the beginning of the Resilience Research Center, a bold new project its proponents claim will swiftly grow into a national model.

The project, spearheaded by the Center for Resilient Cities, Growing Power, Madison Gas and Electric and the immediate neighborhoods, will include a Neighborhood Center, a project-based middle school, a five-thousand-square-foot mixed-use development with

neighborhood-focused businesses such as a restaurant and coffee shop, an MG&E Energy Services Center and several acres of intensive, year-round urban agriculture.

"This is really about a new industry," says the surprisingly soft-spoken Allen, his Maryland-bred accent light and loose. "I predict within the next five years there'll be hundreds or thousands of projects just like this around the country."

Allen puts his head down, slides his shovel into the hot, rich dirt and quietly gets to work.

Take This Job and Shovel It

"Green-collar" jobs—essentially blue-collar opportunities with an environmental bent—are the hot new thing. In an economy where national unemployment rates teeter around ten percent, the promise of a burgeoning new industry is an attractive one. Obama banked on it, pledging to spend $150 billion over ten years to create five million green-collar jobs. Nearly 3,500 people attended the third annual Good Jobs, Green Jobs National Conference in Washington, D.C., in May, where House Speaker Nancy Pelosi headlined. The idea is green jobs are good for local economies, they're good for the globe and they add a bit of cachet to a movement long associated with passion rather than riches.


PHOTO COURTESY OF GROWING POWER

"We treat our forty-plus employees very well," says Allen, who reportedly makes $80,000 a year as CEO of his Growing Power of Milwaukee. "It's one thing to get folks all hyped up, but we have to be able to create these jobs, real living wage green jobs. That's one of our principles at Growing Power, and we want to be an example because it can happen."

Allen, a former NBA player and the son of sharecroppers, started farming in the city of Milwaukee in 1993 and by 1995 founded a nonprofit urban ag growing and training center, later called Growing Power. Allen's goal is to grow safe, healthy, affordable food in urban areas, creating community as a by-product—and somewhere along the way he became famous for his methods. Michelle Obama, Bill Clinton, Oprah, the *New York Times*, and *Time* magazine have all lauded Allen's efforts, and to list his speaking engagements, awards and recognitions here would take a full magazine page—literally—but if you ask Allen, the real stars here are the worms.

"They're my most valuable employees," he says.

It's Allen's red worms infiltrating his composted soil that allow him to create the rich black worm tea that can be thrown down anywhere—atop asphalt or weedy grass—to grow

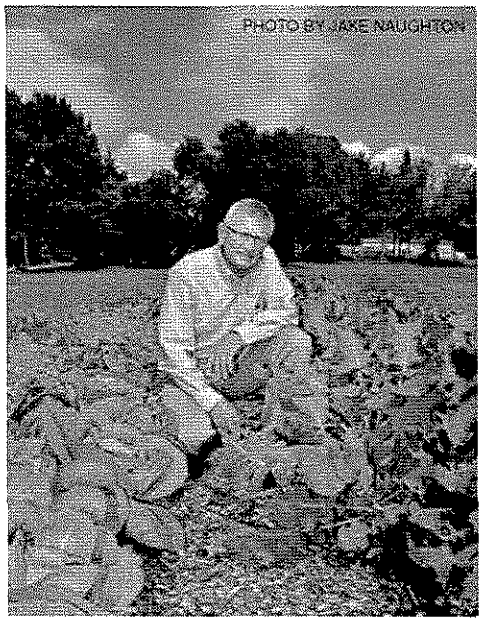
edible plants without space issues or worry of ground contaminants rampant in most city soil. And not only are these urban gardens organic, they're highly productive.

"We grow about five dollars per square foot, which equates to about $200,000 an acre," says Allen. "So this is different from Grandfather's row crop type farming, which yielded about five hundred dollars per acre. It's an expensive proposition up front, but on the back end it's really gonna yield a lot of production."

And jobs. On Madison's Resilience Research Center site, thirty to fifty green jobs will come from the initial construction alone, and hundreds more could follow in staffing the restaurant and café, expertly maintaining the gardens and greenhouses, or any number of other ventures on campus. The project will likely attract worldwide attention, just as Growing Power has in Milwaukee, recent host of three national conferences thanks to Allen. The possibilities, it would seem, are endless.

Vision, dollars and direction

Imagine a self-contained, highly productive, culturally rich food and community utopia. Four acres, every square inch of it in sustainable use, right here in the city. Hoop houses arched protectively over beds of vegetables throughout the winter, edible perennials shaded by nut trees all summer long, ponds filled with farm fish whose waste is anything but, feeding the floating beds of plants above. Imagine a middle school where students, rather than sitting through six, fifty-minute classes, spend the day putting their hands on projects that integrate all subjects. Imagine a Neighborhood Center and a business where food is grown, harvested, marketed, sold and consumed. Imagine dozens or even hundreds of green-collar jobs, from construction to gardening to teaching to business management. Imagine the money recycled back into the neighborhood. Imagine food scraps recycled into compost and raked throughout, best practices spread through the neighborhood and harvested again, a cycle churning in perpetuity like a blade through soil.



"It's happening, and it's actually moving very quickly," says **Tom Dunbar**, a landscape architect and executive director of the Center for Resilient Cities. "The concept is five years, and at seven or eight months we're already this far along. It's a very aggressive schedule, but it also responds to integrated project delivery, where you really focus and bring all partners in and do things slightly differently than you would do in a normal public bid situation."

For Dunbar, green jobs are anything but new.

"You could say I've had a green job since 1969," says Dunbar. "I designed my first rain garden in 1972. My entire professional career has been oriented to the

combination of land and people."

The Center for Resilient Cities is a Madison- and Milwaukee-based nonprofit whose mission is to help urban citizens and governments create healthy, economically attractive environments. They're the ones working on Madison's land transfer for the proposed Central Park, and a driving force behind revitalizing Troy Gardens as we know it today.

Last July, members of the Madison Community Land Trust and the Community Action Coalition approached Dunbar about the four-acre parcel at Badger and Rimrock roads, then owned by Dane County. The county was looking to sell, and the CRC had to make a quick decision. Dunbar says it was an easy one, because so many of the partners fit so well together. Community Groundworks, the organization that runs Troy Gardens, and Sustain Dane came on board. Proponents of the Badger Rock Charter School entered the picture, seeing a perfect fit for the project-based charter school proposal they'd been working on for two years. The CRC already had a long-standing relationship with Growing Power, which was looking for a more permanent Madison location to supplement the work farmer **Robert Pierce** is doing at Avant Gardens of McFarland. It all felt right.

By January 2010, the CRC, through community contributions and a $20,000 donation from MG&E, had raised $220,000 beyond the necessary $500,000 to purchase the land. The final project calls for an additional $8 to $14 million for completion, but it will be built in modules—beginning this fall with the deconstruction of Badger School, recycle and reuse of at least eighty percent of the old structure's materials. The CRC is working with Hoffman and Associates of Appleton, the design group responsible for the new Holy Wisdom Monastery in Middleton, which received the most U.S. Green Building Council LEED points of any project in the country. For Dunbar, however, sustainability is about so much more than green building—it's about a society's ability to adapt to change, and there's no predicting what the next big green trend will be—what remains is people, and their ability to evolve well together.

"The notion of green jobs is legitimate but we're doing resilient jobs," says Dunbar. "Talking about sustainability is good, but if we don't look at how we foster the ability of neighborhoods and cities to adapt to change in a positive way, sustainability won't mean much."

Learning to Grow

If all continues to go well with the approval process, Badger Rock Charter Middle School could be the first tenant in the fall 2010 construction, prepping to welcome its first forty to eighty students by the fall of 2011. The school would be project-based, and proponents say it will be an "interdisciplinary program focusing on environmental sustainability with culturally relevant teaching," a "hands-on exploration and study of food growth and science, energy and water use, and community cooperation."

Eventually they'd like to have 120 students, at least fifty percent of whom will come from the immediate neighborhood, a neighborhood in which seventy-six percent of students

currently qualify for free and reduced lunch. The need for a school is real—as it stands now, local kids are bused away to Allis Elementary on Buckeye Road, Sennett Middle School and LaFollette High School, both on Pflaum Road.

Sara Alvarado, small business owner and south side community member, was one of the founding members of Madison's Spanish immersion charter school, Nuestro Mundo. In 2008, she connected with a couple of people who'd been involved with a lapsed idea for a green design school, and together they started talking about a potential charter school with an environmental focus—but it wasn't until the Center for Resilient Cities procured the land that plans for the school took off.

"This wouldn't have happened if we hadn't partnered with the CRC," says Alvarado. "Financially, we know what [the Madison school district] is going through and they don't have any money. If we want to create something it has to be budget-neutral."

As of May, school planners had applied for a $250,000 Department of Public Instruction grant, and they are in the process of getting their detailed proposal approved by the Madison Metropolitan School District. Though Alvarado acknowledges the road ahead is long, she's more than optimistic.

"Trying to get Nuestro Mundo going was negative and difficult and I became so jaded by the red tape," she says. "This has been a completely different experience. It's green lights, it's positive, it's collaboration with MMSD, it's night and day."

Brenda Baker of the Madison Children's Museum is on the school planning team and was one of the people Alvarado connected with a couple years back.

"The fortuitous thing was that we worked for about a year talking about it, knowing the school's budget situation was so dire," says Baker. "All of a sudden we've got this great partner. We were in the right place at the right time. There's a lot of synergy right now."

Though Baker was originally working on a green school before she met Alvarado, the two shy away from that terminology now. "It will be green, yes, but it's so much more than that," says Baker. "It's a community school. It's sense-of-place education. It's not just about the materials, it's about the culture and the people."

The educational opportunities will spread far beyond the middle school, according to **Joe Sensenbrenner**, president of the board of the Center for Resilient Cities. He envisions people from the neighborhood walking to their jobs on the farm or in the restaurant,

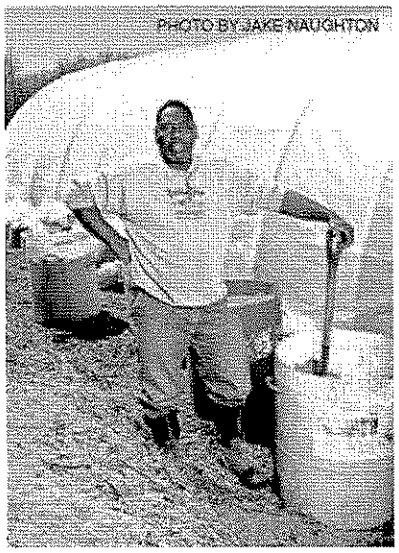
interns studying exothermic research or aquaponics, kids shadowing professional gardeners or restaurant managers, conducting science experiments with wind power or photovoltaic energy using MG&E's on-site equipment. He sees people of all ages and cultures trading ideas and conversation, values and histories, breaking locally harvested bread together every day. And though he predicts cities across the country will emulate what is going on in Madison, above all it's about one local neighborhood nurturing, harvesting and feeding itself in myriad ways.

"We're very interested in the neighborhood impact," says Sensenbrenner. "How does this affect people's attitudes and practices toward individual diet? Toward obesity or adult-onset diabetes? How do young people view homegrown and naturally grown foods versus other kinds of food? How do they view recipes of other ethnic and national backgrounds? Does this help people get to know each other better?"

Sensenbrenner points to the involvement of researchers such as UW–Madison professor emeritus Jerry Kaufman of the Department of Urban and Regional Planning, who retired from teaching in 2003 to serve as board president of Growing Power, or world-renowned neuroscience professor Richard Davidson, who's interested in how focus and attention impact learning. The CRC could use that knowledge to enrich its programming. The CRC is also working with UW sociology professor Michael Bell to understand the impact this project will have on practices in the neighborhood, and there are plans to study ways to apply water retention pond techniques to farming methods in Wisconsin's Kickapoo Valley, so prone to flooding.

"We have opportunities here to reinforce some fundamental research," says Sensenbrenner. "This is a learning and production laboratory that will benefit the neighborhood, the entire school system and other cities."

A Farmer's Full Circle



Robert Pierce remembers when Badger School was alive and well, because he attended kindergarten through fifth grade in the very building he now leans against eating his lunch.

"Actually, they kicked me out of kindergarten because I could already read and write," he laughs, a free and easy belly guffaw familiar to the smiling volunteers wheelbarrowing past him. Pierce has always been ahead of the game, and deeply committed to his neighborhood. He started Half the 40 Acres organic farm back in 1983 to alleviate the food allergies he'd picked up in Vietnam, and started managing the South Madison Farmers' Market about ten years ago.

"I decided I couldn't force people to grow food without

poisons for me, so I decided to grow it myself," he says.

For years he'd heard about a man in Milwaukee who was doing very similar things, but he didn't actually meet Will Allen until about ten years ago. The two men connected immediately, and years later when Allen was interested in developing Growing Power in Madison, he knew just who to call.

"Three years ago Will said, 'Robert, I have a vision.' He said, 'You're going to be Madison's Growing Power,'" says Pierce. "I laughed and said, 'I'll just be here doing what I'm doing.'" Pierce started a Growing Power farm at Avant Gardens of McFarland but continued searching for a more permanent plot to sow. The informal partnership between Pierce and Allen turned formal when the CRC purchased the land at Badger and Rimrock, and the fit was evident to all parties involved. Growing Power dug in.

"It just gets bigger and bigger," says Pierce, who also runs a youth group and plans to have participants tend the farms two days each week. "We've got a good place with good people who understand what we're doing here, you know?"

It's obvious what's happening here today is about so much more than growing food. Gardening as community building is something Pierce and Allen have long called a profession, but today few of the people working here are professional gardeners. UW environmental ed students have given up their Saturday morning to haul dirt with grandmothers and retired teachers. A young dad watches his baby scoop the rich soil with a toy shovel. School proponents connect to pencil in the next planning session. Allen stands watching it all, smiling.

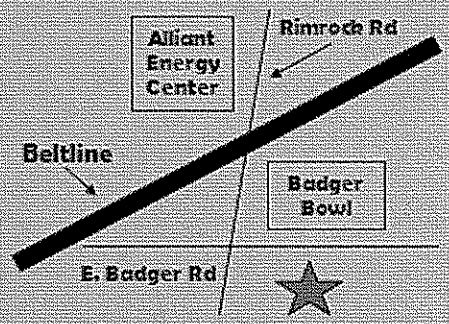
"Growing Power could have done this ourselves today," says Allen. "We could have waited to bring you people in, but that's not what this is about. We want the community involved from the very start. It's the passion that we're able to grow. You can throw a lot of money at something like this but if you don't have the passion, it will go away very quickly. That's what we're doing here today. This is just the beginning."

Maggie Ginsberg-Schutz is a contributing writer to Madison Magazine.

http://www.madisonmagazine.com/Madison-Magazine/August-2010/Pay-Dirt/

Neighborhood Event - Family Fun!

- Site tours
- Bench building workshop
- Kids' games
- Garden bed installation



ACROSS FROM BADGER BOWL

Intersection of E. Badger & Rimrock

(at the old Badger School site)

Coming to our neighborhood:

Badger Rock Middle School
Community Gardens
Neighborhood Center

Join us to learn more!

Web: Badgerschool.org • Email: Badgercharter@gmail.com

APPENDIX D: Pictures from Neighborhood Event June 6th