



2011-2012 Presentation of Nominee to the U.S. Department of Education

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OMB Control Number: 1860-0509 Expiration Date: February 28, 2015

PART I - ELIGIBILITY CERTIFICATION

School and District's Certifications

The signatures of the school principal and district superintendent (or equivalents) on the next page certify that each of the statements below concerning the school's eligibility and compliance with the following requirements is true and correct.

- 1. The school has some configuration that includes one or more of grades K-12. (Schools on the same campus with one principal, even a K-12 school, must apply as an entire school.)
- 2. The school achieves or comes close to achieving the goals of all three green Ribbon Pillars: 1) environmental impact and energy efficiency; 2) healthy school environments; and 3) environmental and sustainability education.
- 3. The school has been evaluated and selected from among schools within the state or Nominating Authority's jurisdiction (BIE, DoDEA), based on *documented achievement* toward the three Green School Pillars and Elements.
- 4. Neither the nominated public school nor its public school district is refusing the U.S. Department of Education Office of Civil Rights (OCR) access to information necessary to investigate a civil rights complaint or to conduct a district wide compliance review.
- 5. OCR has not issued a violation letter of findings to the public school district concluding that the nominated public school or the public school district as a whole has violated one or more of the civil rights statutes. A violation letter of findings will not be considered outstanding if OCR has accepted a corrective action plan to remedy the violation.
- 6. The U.S. Department of Justice does not have a pending suit alleging that the public school or the public school district as a whole has violated one or more of the civil rights statutes or the Constitution's equal protection clause.
- 7. There are no findings of violations of the Individuals with Disabilities Education Act in a U.S. Department of Education monitoring report that apply to the public school or public school district in question; or if there are such findings, the state or public school district has corrected, or agreed to correct, the findings.
- 8. The school meets all applicable federal, state, tribal and local health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

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U.S. Department of Education Green Ribbon Schools 2012

| For Public Schools only: (C | heck all that ap | ply) 🂢 Charter | [] Title | e I [] Magne | t [] Choice | |
|--|---------------------------|---------------------------|-----------------|---|------------------|------|
| Name of Principal (Specify: Ms., Miss, | Mrs., (Dr.) Mr. | etc.) (As it shou | ld appear | in the official | records) | |
| Official School Name | The STAR (As it should | School appear in the offi | cial reco | ·ds) | | |
| School Mailing Address 145 | Leupp (If address is | Rd. P.O. Box, also in | clude stre | eet address.) | | |
| Haastatt | | , | | AZ ´ | 86004 | |
| City | | | | State | Zip | |
| County Coconing | Sta | ate School Code N | Number*_ | 79090 | | |
| Telephone (602) 412- | 3533 | Fax (928) 2 | 25-21 | 79 | | |
| Web site/URL www.≤t | arschool.org | | E-mail | - murk. Soreu | nsen@starschool. | cf a |
| I have reviewed the inferequirements on page 2-4, a | ormation in t | nis application, | including | g the award | and eligibility | _) |
| | March | 21 2012 1 | Date | | | |
| (Principal's Signature) | Mark W. | 21, 2012 1 Sovenser | | | | |
| Name of Superintendent* | (Specify: Ms | ., Miss, Mrs., Dr., | Mr., Oth | er) | | |
| District Name* | | ٦ | ГеІ. <u>(</u>) | | | |
| I have reviewed the information requirements on page 2-4, and I concur that this is one of the | nd certify that | to the best of my | knowled | ge all informati | ion is accurate. | |
| | | I | Date | | | |
| (Superintendent's Signature |) | | | , | | |
| *Private Schools: If the info | rmation reques | ted is not applica | ble, write | N/A in the spa | ce. | |
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PART II – SUMMARY OF ACHIEVEMENTS

The STAR (Service To All Relations) School is an elementary charter school located in a rural area of northern Arizona, bordering the Navajo Nation. The school serves a population that is entirely Native American, with an 82 % free and reduced lunch rate. In order to provide education for this community, the campus was located ten miles from the nearest power, water, and telephone lines. The co-founders of The STAR School had lived in the area with solar power since 1990, and they believed that it was possible to run the school entirely on renewable energy. The STAR School was established in 2001 as the first off-grid, solar powered charter school in the country.

Teachers and students at the STAR School have found many ways to integrate modern technology with traditional Navajo teachings on how we are related to the earth. Appreciation of the air we breathe, the food we eat, the earth we walk on, and the practice of not having too much, are all values that have been taught for generations of Navajo families. These same values are now being promoted by the Green Ribbon Schools Program and sponsored by the U.S. Department of Education. It is a great honor for the STAR School to be nominated for this recognition, and we hope that our example can show other people, especially in rural areas and Native American communities, that sustainable green schools are achievable.

Solar power was a necessity for the STAR School from the beginning, but teachers and leaders at the school sought to turn the school's reliance on renewable power into an asset as a way to engage students in sustainability studies and environmental literacy. As the school grew, and solar power was augmented by wind generators, students engaged in guided research on renewable energy and cycles in nature. One of our graduates went on to become a Gates Millennium Scholar and, returning to give a speech for last year's 8th grade graduation, told students how her interest in environmental engineering began at the STAR School.

Renewable energy has not been the only green aspect of the school's vision and focus. The students in every grade, from pre-K through 8th, are involved in projects to grow vegetables in two greenhouses and gardens. All of the gardens are fertilized organically, as farms in the area have been for generations, with sheep manure, and students gather vegetable scraps from the cafeteria every day. In addition, every student has been involved in the planting of fruit trees throughout the campus. Food grown in the greenhouse and gardens is harvested by students and served in the cafeteria with lunch.

The STAR School Junior High works closely with students from nearby Northern Arizona University to gather data on the school's air, water, and soil quality. College students majoring in environmental engineering taught how to gather and analyze data using the EPA's Indoor Air Quality Tools. Every room in the school was assessed. The findings were presented to the whole staff, who then followed through to resolve any problems.

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The school's well provides water on the campus, which has been thoroughly analyzed and determined to be of high quality, not requiring chemical treatment. Parents of students have recently volunteered to take samples of soil on the campus to be analyzed by the university biology lab. All of this data is shared with the staff and students, so that students can use it in projects to serve the community, contribute to overall environmental literacy, and satisfy their graduation requirements.

Additional data is gathered by students on how much waste is produced, how much is composted, and how much is recycled. Recent analysis indicates that 33% of the STAR School waste is either recycled or composted. This data will be used in the next round of projects. Students are continually challenged to develop solutions for improvement of our carbon and waste footprint.

Finally, as part of the reading and writing program (VOICES) used by all grades, each year every student identifies a concern he or she has about the school or larger community, and presents a speech about what he or she is committed to doing about it. Many students choose to address environmental concerns for the school, for Navajo reservation communities, or for Mother Earth. All of these efforts are designed to make sure our students are aware of environmental and sustainability issues, and recognize that they have the ability to do something about them. It is our hope that the STAR School serves as a laboratory where we help create a more environmentally conscious and sustainable path for the future. We intend to provide a platform from which our students can step into the world of environmental challenges, empowered to contribute to a more sustainable future.

PART III – DOCUMENTATION AND CERTIFICATION OF STATE NOMINATION

Nominating Authority's Certifications

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

- 1. The school has some configuration that includes one or more of grades K-12. (Schools on the same campus with one principal, even a K-12 school, must apply as an entire school.)
- 2. The school achieves or is one of those overseen by the Nominating Authority which comes the closest to achieving the goals of all three green Ribbon Pillars:
 - 1) environmental impact and energy efficiency; 2) healthy school environments; and
 - 3) environmental and sustainability education.
- 3. The Nominating Authority has evaluated the school and selected it for submission to the U.S. Department of Education from among those schools overseen by the Nominating Authority which have applied for a Green Ribbon, based on *documented achievement*

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toward the three Green School Pillars and Elements.

4. The school meets all applicable federal civil rights and federal, state, tribal and local health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

| Name of Nominating Agency | Arizona Department of Education |
|---------------------------------|--|
| Name of Nominating Authority | The Honorable John Huppenthal |
| requirements on pages 2 | ormation in this application, including the award and eligibility 2-4, and certify, to the best of my knowledge through a documentary that the school meets the provisions in this Part of the Nominee |

(Nominating Authority's Signature)

Note to Nominating Authority: The application, including the signed certifications and documentation of evaluation in the three pillars should be converted to a PDF file and emailed to Director, ED-Green Ribbon Schools at green.ribbon.schools@ed.gov according to the instructions in the Nominee Submission Procedure.

Public Burden Statement

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

APPENDIX – ARIZONA'S EVALUATION OF SCHOOL NOMINEE

| Attachment 1 – Arizona's Green Ribbon Schools Judging Panel and Scoring Rubric | • |
|--|----|
| Attachment 2 – STAR Charter School Condensed Application | 12 |

Arizona's Green Ribbon Schools Judging Panel and Scoring Rubric

In an effort to evaluate applicants in an impartial and equitable manner, the Arizona Department of Education, as the Nominating Agency for Arizona, created an Arizona Green Ribbon Schools Judging Panel that consisted of five members from both the public and private sectors, each with expertise in one or more of the three Green Ribbon Pillars:

- Mary Szafranski, Deputy Associate Superintendent of Health and Nutrition Services, Arizona Department of Education
- Nancy Wrona, Senior Policy Advisor, Arizona Department of Environmental Quality
- Dan Osterman, LEED AP, Employee Owner, Sundt Construction
- Caroline VanIngen-Dunn, Manager, STEM Initiative, Science Foundation Arizona
- Dan Demland, R.A., Architect, Arizona School Facilities Board

The panel was asked to evaluate each applicant in accordance with the following scoring rubric, and we have included the scores agreed upon by the panel with respect to STAR Charter School.

| STAR Charter School Scoring Rubric | | | |
|---|--|--|--------|
| Cross Cutting Questions - | Green Ribbon Pillar and Elementon 5 Points (5%) | nts | Points |
| | ol Programs and/or Awards for Env | ironmental and Sustainability | |
| Efforts. (5 points possible) 1 pt | 2-3pts | 4-5 pts | |
| School participates in a program that benchmarks progress | In addition, school has received one award | In addition, school has received more than one award and has achieved an advanced level of progress in at least one recognized program | 5 |
| Pillar I: Environmental Impact and Energy Efficiency—30 points (30%) Goal: Net zero energy, carbon, water, waste, and hazardous waste impacts. | | | Points |
| Element IA: Improved energy conservation/energy-efficient building(s). (15 points possible) | | | |
| 1-5 pts | 6-10pts | 11-15 pts | |
| School demonstrates some reduced energy use | School has an Energy Star rating and an Energy Master Plan; demonstrates substantial reductions in electricity and heating energy use and carbon | School has an Energy Master Plan; is Energy Star rated above 90; demonstrates reductions from baseline in electricity, | 14 |

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| | footprint; generates or purchases | heating and carbon footprint | |
|-----------------------------------|--|--------------------------------------|---|
| | some renewable energy; has | of 35% or more; >50% of | |
| | green building recognition for | energy use comes from | |
| | some new, renovated and/or | renewable sources; offsets a | |
| | existing buildings at minimum | substantial amount of its | |
| | Silver level or equivalent; | remaining footprint; has | |
| | measures and offsets some of its | received green building | |
| | remaining carbon footprint. | recognition at the Gold or | |
| | | higher for all new, | |
| | | renovated, and existing | |
| | | buildings. | |
| Element IB: Impro | ved water quality, efficiency, and | | |
| (5 points possible) | 1 0/ | | |
| 1 pt | 2-3 pts | 4-5 pts | |
| The school protects its | In addition, the school has smart | In addition, the school | |
| water from contaminants; | irrigation and landscaping that is | demonstrates a <i>substantial</i> | |
| cleans its drinking water | water-efficient; conducts annual | amount of reduction in | |
| fountains and controls lead | water audits and controls leaks; | water-use compared to | |
| in drinking water. | installs <i>some</i> water-conserving | baseline; uses <i>only</i> | |
| in drinking water. | fixtures and/or appliances (e.g. | alternative water sources for | |
| | waterless urinals, dual-flush | irrigation (e.g. gray water; | |
| | toilets, appliances); and can | rainwater harvesting); | 5 |
| | demonstrate a <i>modest</i> amount of | | 3 |
| | | provides <i>only</i> water-efficient | |
| | reduction in water-use compared | fixtures; and uses other | |
| | to baseline. | creative measures for | |
| | | protecting and conserving | |
| | | water at the school site (e.g. | |
| | | bioswales for controlling | |
| | | runoff). | |
| programs (5 points | ed waste production and improve | d recycling and composting | |
| 1-2 pts | 3-4 pts | 5 pts | |
| | - | _ | |
| School monitors its | In addition, school also has a | School also has made | |
| hazardous waste and | pollution prevention approach to | substantial, measured | |
| disposes of it as required | hazardous chemicals; recycles | progress towards a "zero | |
| by state law; has a | computer and electronics | waste" goal; has a recycling | |
| recycling program that | responsibly; purchases some | program that diverts 50% or | |
| diverts 20% of its solid | electronics with E-PEAT | more of its solid waste | |
| waste (but no organics/ | certification; uses <i>substantial</i> | (including organics like yard | |
| compost); purchases some | amount of "third-party certified" | waste and food waste); | |
| paper with <i>some</i> recycled | cleaning products; has a | purchases substantial | |
| content; uses <i>some</i> "third- | recycling program that diverts | amounts of paper with > | 5 |
| party certified" cleaning | 35% of its solid waste (some | 30% recycled content, and | |
| products; and describes a | organics/ compost, such as yard | chlorine-free; has an | |
| few creative ways the | waste); purchases substantial | environmentally-preferable | |
| school community | amounts of paper with recycled | purchasing policy and a | |
| practices the 4Rs. | and chlorine-free content. | hazardous waste | |
| | | management policy that | |
| | | reduces and prevents solid | |
| | | and hazardous wastes; uses | |
| | | 100% "third-party certified" | |
| | l | | |

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| | | alagning musdayata (mat | |
|---|---|---|-----------|
| | | cleaning products (not | |
| | | including disinfectants); has | |
| | | a custodial program that | |
| | | meets "green" institutional | |
| | | services standards; and | |
| | | describes several creative | |
| | | ways the school community | |
| | | practices the 4Rs. | |
| Floment ID: Use of | alternative transportation to, dur | 1.2 | |
| (5 points possible) | and native transportation to, dur | ing, and from school | |
| 1-2 pts | 3-4 pts | 5 pts | |
| School has programs in | In addition, school has a high | In addition, school has | |
| place to promote more | percentage of students that do | alternative-fuel buses and | |
| efficient and healthier | not drive in a single vehicle to | other creative means of | |
| transportation, including | school; participates in Safe | promoting alternative | |
| designated carpool stalls, | Routes to Schools and identifies | transportation. | |
| | | transportation. | |
| anti-idling policy, no | safe pedestrian routes; adopts a | | |
| loading/unloading near air | policy to promote active | | |
| intakes; has some | transportation; and has several | | 5 |
| percentage of students that | means of connecting students to | | |
| do not drive in a single | the schoolyard. | | |
| vehicle to school, and has | | | |
| some means of connecting | | | |
| students to the schoolyard. | | | |
| • | | | |
| | | | |
| | | | |
| | | | |
| Total Points for Pil | lar I | | 29 |
| Total Points for Pil | lar I | | 29 |
| | lar I nvironments— 30 Points (30%) | | 29 |
| Pillar II: Healthy School E Goal: The school improves | nvironments— 30 Points (30%) the health and performance of stud | | 29 Points |
| Pillar II: Healthy School E Goal: The school improves Element IIA: An in | nvironments—30 Points (30%) the health and performance of stud tegrated school environmental he | | |
| Pillar II: Healthy School E Goal: The school improves Element IIA: An in (15 points possible) | nvironments—30 Points (30%) the health and performance of studitegrated school environmental he | alth program | |
| Pillar II: Healthy School E Goal: The school improves Element IIA: An in (15 points possible) 1-5 pts | nvironments— 30 Points (30%) the health and performance of stud tegrated school environmental he | alth program 11-15 pts | |
| Pillar II: Healthy School E Goal: The school improves Element IIA: An in (15 points possible) 1-5 pts School complies with all | nvironments— 30 Points (30%) the health and performance of studitegrated school environmental he 6-10pts In addition, school tests | 11-15 pts School has completed | |
| Pillar II: Healthy School E Goal: The school improves Element IIA: An in (15 points possible) 1-5 pts School complies with all relevant state laws related | nvironments— 30 Points (30%) the health and performance of studitegrated school environmental he 6-10pts In addition, school tests classrooms for radon within last | 11-15 pts School has completed everything in this section | |
| Pillar II: Healthy School E Goal: The school improves Element IIA: An in (15 points possible) 1-5 pts School complies with all relevant state laws related to pesticides, mercury, | nvironments— 30 Points (30%) the health and performance of studitegrated school environmental he 6-10pts In addition, school tests classrooms for radon within last 24 months; implements an | 11-15 pts School has completed everything in this section and uses an aggressive | |
| Pillar II: Healthy School E Goal: The school improves Element IIA: An in (15 points possible) 1-5 pts School complies with all relevant state laws related to pesticides, mercury, tobacco and other | nvironments— 30 Points (30%) the health and performance of studitegrated school environmental he 6-10pts In addition, school tests classrooms for radon within last 24 months; implements an Integrated Pest Management | 11-15 pts School has completed everything in this section and uses an aggressive approach to eliminating | |
| Pillar II: Healthy School E Goal: The school improves Element IIA: An in (15 points possible) 1-5 pts School complies with all relevant state laws related to pesticides, mercury, | nvironments— 30 Points (30%) the health and performance of studitegrated school environmental he 6-10pts In addition, school tests classrooms for radon within last 24 months; implements an Integrated Pest Management plan that eliminates pesticides; | 11-15 pts School has completed everything in this section and uses an aggressive | |
| Pillar II: Healthy School E Goal: The school improves Element IIA: An in (15 points possible) 1-5 pts School complies with all relevant state laws related to pesticides, mercury, tobacco and other | nvironments— 30 Points (30%) the health and performance of studitegrated school environmental he 6-10pts In addition, school tests classrooms for radon within last 24 months; implements an Integrated Pest Management | 11-15 pts School has completed everything in this section and uses an aggressive approach to eliminating | |
| Pillar II: Healthy School E Goal: The school improves Element IIA: An in (15 points possible) 1-5 pts School complies with all relevant state laws related to pesticides, mercury, tobacco and other hazardous materials; | nvironments— 30 Points (30%) the health and performance of studitegrated school environmental he 6-10pts In addition, school tests classrooms for radon within last 24 months; implements an Integrated Pest Management plan that eliminates pesticides; | 11-15 pts School has completed everything in this section and uses an aggressive approach to eliminating environmental health and | |
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| Pillar II: Healthy School E Goal: The school improves Element IIA: An in (15 points possible) 1-5 pts School complies with all relevant state laws related to pesticides, mercury, tobacco and other hazardous materials; ensures good ventilation; keeps relative humidity below 60%; contains no | nvironments— 30 Points (30%) the health and performance of studitegrated school environmental he 6-10pts In addition, school tests classrooms for radon within last 24 months; implements an Integrated Pest Management plan that eliminates pesticides; implements an Indoor Air Quality Program equivalent to Tools for Schools; uses "third- | 11-15 pts School has completed everything in this section and uses an aggressive approach to eliminating environmental health and safety hazards (physical, biological, chemical, | Points |
| Pillar II: Healthy School E Goal: The school improves Element IIA: An in (15 points possible) 1-5 pts School complies with all relevant state laws related to pesticides, mercury, tobacco and other hazardous materials; ensures good ventilation; keeps relative humidity below 60%; contains no mold; has CO alarms and | nvironments— 30 Points (30%) the health and performance of studitegrated school environmental he 6-10pts In addition, school tests classrooms for radon within last 24 months; implements an Integrated Pest Management plan that eliminates pesticides; implements an Indoor Air Quality Program equivalent to Tools for Schools; uses "third- party certified" cleaning | 11-15 pts School has completed everything in this section and uses an aggressive approach to eliminating environmental health and safety hazards (physical, biological, chemical, | Points |
| Pillar II: Healthy School E Goal: The school improves Element IIA: An in (15 points possible) 1-5 pts School complies with all relevant state laws related to pesticides, mercury, tobacco and other hazardous materials; ensures good ventilation; keeps relative humidity below 60%;contains no mold; has CO alarms and inventory of appliances; | nvironments— 30 Points (30%) the health and performance of studitegrated school environmental he 6-10pts In addition, school tests classrooms for radon within last 24 months; implements an Integrated Pest Management plan that eliminates pesticides; implements an Indoor Air Quality Program equivalent to Tools for Schools; uses "third- party certified" cleaning products; actively manages | 11-15 pts School has completed everything in this section and uses an aggressive approach to eliminating environmental health and safety hazards (physical, biological, chemical, | Points |
| Pillar II: Healthy School E Goal: The school improves Element IIA: An in (15 points possible) 1-5 pts School complies with all relevant state laws related to pesticides, mercury, tobacco and other hazardous materials; ensures good ventilation; keeps relative humidity below 60%; contains no mold; has CO alarms and | nvironments— 30 Points (30%) the health and performance of studitegrated school environmental he 6-10pts In addition, school tests classrooms for radon within last 24 months; implements an Integrated Pest Management plan that eliminates pesticides; implements an Indoor Air Quality Program equivalent to Tools for Schools; uses "third- party certified" cleaning products; actively manages chemicals; and describes other | 11-15 pts School has completed everything in this section and uses an aggressive approach to eliminating environmental health and safety hazards (physical, biological, chemical, | Points |
| Pillar II: Healthy School E Goal: The school improves Element IIA: An in (15 points possible) 1-5 pts School complies with all relevant state laws related to pesticides, mercury, tobacco and other hazardous materials; ensures good ventilation; keeps relative humidity below 60%;contains no mold; has CO alarms and inventory of appliances; | nvironments— 30 Points (30%) the health and performance of studitegrated school environmental he 6-10pts In addition, school tests classrooms for radon within last 24 months; implements an Integrated Pest Management plan that eliminates pesticides; implements an Indoor Air Quality Program equivalent to Tools for Schools; uses "third- party certified" cleaning products; actively manages chemicals; and describes other measures of student and staff | 11-15 pts School has completed everything in this section and uses an aggressive approach to eliminating environmental health and safety hazards (physical, biological, chemical, | Points |
| Pillar II: Healthy School E Goal: The school improves Element IIA: An in (15 points possible) 1-5 pts School complies with all relevant state laws related to pesticides, mercury, tobacco and other hazardous materials; ensures good ventilation; keeps relative humidity below 60%;contains no mold; has CO alarms and inventory of appliances; | nvironments— 30 Points (30%) the health and performance of studitegrated school environmental he 6-10pts In addition, school tests classrooms for radon within last 24 months; implements an Integrated Pest Management plan that eliminates pesticides; implements an Indoor Air Quality Program equivalent to Tools for Schools; uses "third- party certified" cleaning products; actively manages chemicals; and describes other | 11-15 pts School has completed everything in this section and uses an aggressive approach to eliminating environmental health and safety hazards (physical, biological, chemical, | Points |
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| outdoor time (15 points possible) | | | | | | |
|---|---|---|--|---|---|--------|
| | (13 pt | _ | | | 11-15 nts | |
| 1-5 pts School conducts at lea average of 120 minute week per student of physical education wir reasonable amount conducted outdoors; hon-site food garden; a participates in some nutrition program. | es per th a as an | 6-10pts School also participates in US nutrition program students participate type program; so purchased is cert food from school by students. | rogram; SDA or other of at a high level; ate in Sunwise- me food iffied organic; | substicertifully a than a educate place under to proper and h | 11-15 pts of also purchases a antial amount of food ied organic; reduced ind heat exposure; more 50% of physical ation annually takes outdoors; and rtakes other measures omote healthy nutrition, igh quality outdoor | 15 |
| Total Points f | or Pill | ar II | | time. | | 30 |
| 10tai i omts i | 01 1 111 | u1 11 | | | | 20 |
| | <mark>lool's g</mark> : Inter | graduates are envi disciplinary lear | i <mark>ronmentally and</mark> ning about the ke | <i>sustai</i> ey rela | nability literate tionships between | Points |
| 1-5 pts | ronme | ental, energy, and 6-10pts | 11-15 | (20 po | 15-20 | |
| School incorporates limited environmental and sustainability (E/S) activities in some grades; includes limited E/S concepts in some assessments; and <20% of teachers participate in occasional E/S professional development opportunities. | concessubje into s school >50% particoloccas profe devel oppor at leas school gradulenvirudurin | ol integrates E/S epts into many cts; integrates E/S ome class and ol assessments; of teachers cipate in cional E/S ssional opment rtunities; enrolls st 5% of the ol's eligible lates in AP onmental science g their high ol career. | School focuses I literacy efforts of understanding the key relationships between dynamic environmental, social, and economy systems; incorporately the many grades, subjects, classrotand school assessments; >75 of teachers participate in one more E/S professional development opportunities annually. | on needs comic prates topics om | School has an E/S graduation/matriculation requirement which is focused on understanding the key relationships between dynamic environmental, social, and economic systems; fully integrated E/S into the curricula scope and sequence of learning and matriculation standards for <i>all</i> grades; enrolls >5% of the school's eligible graduates in AP environmental science during their high school career. | 20 |
| Technology, I thinking skill | Engine | of the environmer eering, and Matho ints possible) | ematics (STEM) | | | |
| 1-3 pts | | E/C inter | 4-5 pts | 1 | | |
| School <i>sometimes</i> integrates E/S into science courses; makes <i>some</i> connections to E/S careers; and provides <i>some</i> additional evidence about links to STEM. | | School <i>frequently</i> integrates E/S concepts into STEM courses; curricula makes <i>many</i> connections throughout to E/S careers, career tech/green jobs; offers E/S related CTE | | 5 | | |

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| | addition educate | | |
|--|---|---|-----------|
| Element IIIC: Development and application of civic engagement knowledge and | | | |
| skills (10 points pos 1-3 pts | 4-7 pts | 8-10 pts | |
| School has civic projects related to environment and sustainability in <i>some</i> grades; occasional meaningful outdoor learning experiences in a <i>few</i> grades; and a <i>few</i> community partnerships, perhaps only involving donations of funds/supplies. | In addition, school emple practices for inquiry-base hands-on, experiential left in both their civic and of experiences; projects are "one-off" but instead are depth service learning as projects fully integrated school's academic cours | School receives full credit when all grades have civic projects; when all grades have meaningful outdoor learning experiences; and when the quality and quantity of community partnerships results in | 10 |
| Total Points for Pil | lar III | | 35 |
| | Scoring | g Total | |
| Cross Cutting Questions | | | 5 |
| Pillar I: Environmental Impact and Energy Efficiency | | | 29 |
| Pillar II: Healthy School Environments Pillar III: Environmental and Sustainability Education | | | 30 |
| TOTAL SCORE | mu Sustamaninty Educa | uon - | 99 points |

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STAR Charter School Condensed Green Ribbon Schools Application

| School Demographics: |
|---|
| Total School Enrollment: 102 |
| How would you describe your school? |
| [] Urban |
| [] Suburban |
| [X] Rural |
| Total building area of the school: 22,300 sq ft (with building completed in April) |
| Year the school was built: 2001 |
| Year of modernization or renovation projects: 2011 |
| Are at least 40 percent of the students from a disadvantaged background? (This must include free and reduced-price meals and may include students with disabilities and students who are limited English proficient, migrant, or receiving services under Title I of the Elementary and Secondary Education Act.) |

Number of full-time and part-time staff members in each of the categories below:

[X] Yes (82%)

[] No

| Staff | Full-time | Part-time |
|--|-----------|-----------|
| Administrators | 3 | |
| Classroom teachers | 7 | |
| Physical education specialists | | 1 |
| Counselors | | 1 |
| Credentialed librarians | | |
| Nurses | | |
| Psychologists | | |
| Technology/media specialists or technicians | 1 | |
| Paraprofessionals | 4 | 1 |
| Campus resource officers | | |
| Other staff (specify) Business office, support staff | 12 | 1 |
| Total | 27 | 4 |

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Cross-Cutting Questions

CC1: Is the school participating in a local, state, or nationally recognized green school program which asks benchmark progress in some fashion (for example, National Wildlife Federal Eco-Schools USA, Green Schools Alliance, Collaborative for High Performance Schools, or Project Learning Tree's Green Schools)?

| [X] | Yes |
|-----|-----|
| []N | lo |

If yes, in which program(s) is the school participating and what level(s) have been achieved?

Our school uses the Green Schools National Network GreenPrint as our main benchmark of progress. There are five Core Practices identified in the GreenPrint, and the STAR School has achieved a score of at least 80% in all five. The STAR School has begun to utilize the ORC (Operations Report Card) of the Collaborative for High Performing Schools.

CC2: Has the school, staff, or student body received any awards for environmental or sustainability stewardship/action?

| | K] | Yes |
|---|------------|-----|
| Γ | 1 N | lo |

List the awards received and the years received.

The STAR School has received recognition from the State of Arizona several times for innovative programs that environmental and sustainability action.

In 2001, The STAR School received the Governor's Award for Energy Efficiency as a solar powered school. In 2006, The STAR School received the Governor's Volunteer Service Award for students helping to build handicap accessible ramps on homes of elderly residents in the area who lacked electrical power.

CC3: Is there a forum provided where all representative stakeholders involved in the daily operation of the school (such as students, faculty, maintenance, and cafeteria staff) can meet to discuss, plan, and implement ongoing green efforts?

[X] Yes
[] No

If yes, describe: (Maximum 200 words)

Every Monday morning during the school year, the entire student body and all the academic and bus driving staff meet together. At these meetings, the ongoing green efforts of the school are often highlighted by the principal. In addition, the principal offers challenges to each class to adopt a portion of the campus to take care of the plants. Every Friday afternoon, the staff meet together to consider ways to increase healthy living and eating as well as to share the ways in which the curriculum advances environmental literacy and sustainability. Once a month, the facility manager speaks at these meetings on how each department is doing on energy conservation and the staff gives feedback to the facility manager on what his department can do to help.

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Pillar I: Environmental Impact and Energy Efficiency

Buildings, grounds, and operations: The school has made significant progress toward "net zero" environmental impact (zero carbon, solid waste, and hazardous waste footprints). Pillar I includes four main elements:

Element A: Reduced greenhouse gas emissions, using an energy audit or emissions inventory and reduction plan, cost-effective energy efficiency improvements, and on-site renewable energy and/or purchase of green power.

Element B: Improved water quality, efficiency, and conservation.

Element C: Reduced solid waste production, through increased recycling, reduced consumption, and improved management, reduction, or elimination of hazardous waste stream.

Element D: Expanded use of alternative transportation to, during, and from school, through active promotion of locally-available options and implementation of enabling projects and policies.

Each question in this section is designed to measure the school's progress towards Pillar I and its associated four elements.

Pillar I Element A

| IA1. Is there an energy master plan in place?[X] Yes[] No |
|--|
| IA2. Has the school received EPA's ENERGY STAR certification?[] Yes[X] No |
| If no, is the school eligible for certification? [X] Yes. The school is pursuing ENERGY STAR certification [] No |
| IA3. Has the total non-transportation energy use (i.e. electricity and temperature control) been reduced from an initial baseline?[X] Yes[] No |
| If yes, provide: |

The vast majority of energy provided for the school is provided by solar and wind power (renewable sources). The need to supplement this power supply with power from a propane generator as well as the propane needed for room heaters, water heaters and stoves for food preparation has been reduced in the past two years a total of 1174 kBTU/student.

Time period measured (mm/yyyy to mm/yyyy): 01/2010 to 12/2011

Measurement unit used (kBTU/square foot or kBTU/student):

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What documents can be provided to document this reduction (such as ENERGY STAR Portfolio Manager reports), if requested?

School records of propane gallons purchased and used.

IA4. What percentage of the school's energy consumption is derived from:

On-site renewable energy generation: 100% of the electrical power for the school is provided by on-site renewable energy generation (solar panels and wind generators). Most of the heating for the buildings is provided by propane.

Purchased renewable energy: 0% IA5. If the school has been constructed and/or renovated in the past ten years, did the project meet one of the following green building rating systems? (Check all that apply) [X] Collaborative for High Performance Schools (CHPS) Criteria [] Green Globes [] Leadership in Energy and Environmental Design (LEED) [] Other Standard: What is the total constructed area? 22,300 sq ft. What is the total renovated area? 0 **IA6.** Do existing buildings meet green building standards? [X] Yes [] No Has the school conducted CHPS Operations Report Card (ORC), achieved LEED Existing Buildings: Operations and Maintenance certification, or other standards? [] Yes [X] No The STAR School is in the process of completing the ORC self assessment **IA7.** Can a reduction in the school's Greenhouse Gas (GHG) emissions be demonstrated?

If yes, provide the following information:

Initial GHG emissions rate (MT eCO2/person): 0.216 MT eCO2/person

Final GHG emissions rate (MT eCO2/person) : 0.142 MT eCO2/person

Percentage reduction: 33%

[X] Yes
[] No

Time period measured (mm/yyyy to mm/yyyy): 01/2010 to 12/2011

How was this reduction documented?

This reduction is documented by two years of school records of propane gallons used by the school for all supplemental energy needs (water heating, back up generator, building heating).

IA8. Is there a reduction and/or offset of GHG emissions from building energy use:

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[X] Yes
[] No

If yes provide the following information:

List offsets used:

The STAR School is totally off the power grid and generates 100% of its own power, largely through solar and wind generation. The solar power inverters used at the school to power the entire school provide a minute by minute calculation of the pounds of CO2 that have <u>not</u> been emitted into the atmosphere because of the use of the solar power generation instead of the coal fired power generation available on the grid. This year, the calculators on the inverters indicated that a total of 12 MT of CO2 were <u>saved</u> from being emitted into the atmosphere.

Total metric tons (MT) of CO2 saved per person in the past 12 months: .08 MT/person

IA9. Indicate which green building practices are being used to ensure the building is energy-efficient:

[X] Our school has fully implemented the Facility Energy Assessment Matrix with EPA's Guidelines for Energy Management.

[X] Our school building has been assessed using the Federal Guiding Principles Checklist in Portfolio Manager.

[X] Our school has an energy and water efficient product purchasing and procurement policy in place.

[X] Other (please describe):

All buildings are required to have a passive solar aspects to their design. One building has walls built of strawbales with an insulation factor of R-60. Trombe walls add to the passive solar design in one building. Large south facing windows are part of every building design. 68% of the schools' square footage are heated by radiant floor heating systems which are designed to be supplemented in the future by solar heated hot water.

IA10 (Element IA Summary). Describe any other indicators in the progress toward the elimination of GHG emissions (describe in detail and include metrics if available) (Maximum 200 words): The school is in the process of adding another 25 kw of solar power to further reduce the GHG emissions.

Pillar I Element B

IB1. Can a reduction in the school's total water consumption (measured in gallons/occupant) from an initial baseline be demonstrated?

[X] Yes

[] No

Since the school was founded in 2001 and built in an area where there are no utilities, the school has hauled water until 2012 when we have been able to develop and operate a well on the campus. Therefore, we have a very accurate measure of exactly how many gallons of water we have used. Based on gallons of water used per individual at the school, since 2010 there have been the following reductions.

Percentage reduction domestic: 2 %

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| | Percentage | reduction | irrigation: | 2 | % |
|--|------------|-----------|-------------|---|---|
|--|------------|-----------|-------------|---|---|

Time period (mm/yyyy to mm/yyyy): 01/2010 to 12/2011

Which documents can be provided to document this reduction (such as ENERGY STAR Portfolio Manager, school district reports), if requested? **School records of water delivered and used.**

- **IB2.** Which of the following practices are employed to increase water efficiency and ensure quality?
- [X] Our school conducts annual audits of the facility and irrigation systems to ensure that they are free of significant water leaks and to identify opportunities for savings.
- [X] Our school has a smart irrigation system that adjusts watering time based on weather conditions.
- [X] Our school landscaping is water-efficient and/or regionally appropriate.

Please provide the following information about the school's landscaping:

What percentage of the total landscaping is considered water-efficient or regionally appropriate? 100%

What types of plants are used and where are they located?

The STAR School students have planted 75 peach trees around the campus that are all irrigated by drip lines. Native vegetation is abundant around the campus and is watered by rain water guttering and berms that catch water flowing naturally across the campus.

[X] Our school uses alternative water sources (i.e. gray water, rainwater harvesting, etc.) Describe the alternate water sources used for irrigation (Maximum 100 words):

All buildings on the campus are guttered to provide rain water to native plants that are growing throughout the campus. In addition, fruit trees planted by the students are all watered by a drip irrigation system that is tied into our school well.

- [X] Taps, faucets, and drinking fountains are cleaned at least twice annually to reduce contamination, and screens and aerators are cleaned at least twice annually to remove particulate lead deposits.
- [X] Our school has a program to control lead in drinking water (including voluntary testing and implementation of measures to reduce lead exposure).

Describe the program that is in place to control lead in drinking water (Maximum 100 words):

Since the school has its own well and a stand alone water system that we have installed, we test the water for all contaminants annually. Lead levels are below established EPA limits (< 0.0010 mg/l +/-) and water quality has been determined to be safe by Arizona Department of Environmental Quality in February, 2012.

IB3. Our school's drinking water comes from:

[] Municipal water source

[X] Well on school property

Describe how the water source is protected from potential contaminants (Maximum 100 words):

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Water is tested annually by professionals in environmental quality. Reports are filed with the state. Even though the tested water is free of contaminants, water is further treated by UV sterilization before it enters the drinking water system.

IB4 (Element IB Summary). Describe any additional progress that has been made towards improving water quality, efficiency, and conservation (Maximum 200 words):

In order to conserve energy needed to pump the water from the well on campus, a new well pump has been installed into our 1,200 foot deep well so that the well can be powered by the school's solar system. Thus, not only is the well powered entirely by renewable energy; it is also capable of pumping water for the school even if there is an emergency power outage in nearby communities. Even though the water has been tested to be safe for chemicals, metals, bacteria, and other contaminants, the school utilizes UV purification as an additional measure.

Pillar I Element C

- **IC1.** What percentage of waste is diverted from the landfill or incinerator by reuse, composting, and/or recycling?
 - A) Monthly garbage service in cubic yards (garbage dumpster size(s) x number of collections per month x percentage full when emptied or collected):

Monthly garbage service is 32 cubic yards (16 cubic yards per dumpster x 2 pick-ups per month x 100% full when collected)

B) Monthly recycling volume in cubic yards (recycling dumpster size(s) x number of collections per month x percentage full when emptied or collected):

Monthly recycling volume is 16 cubic yards (8 cubic yards per dumpster x 2 collections per month x 100% full when collected)

C) Monthly compostable materials volume(s) in cubic yards (food scrap/food soiled paper dumpster size(s) x number of collections per month x percentage full when emptied or collected):

Monthly compostable materials volume is 1 cubic yard (1/4 cubic yard per week x 4 collections per month x 100% full when collected)

Recycling rate =
$$[(B+C)/(A+B+C) \times 100]$$
: $(16+1)/(32+16+1) \times 100=35\%$

IC2. What percentage of total office/classroom paper content by cost is post-consumer material or fiber from forests certified as responsibly managed by the Forest Stewardship Council (FSC), Sustainable Forestry Initiative (SFI), American Tree Farm System, or other certification standards? (If a product is only 30% recycled, only 30% of the cost should be counted.)

10%

IC3. What percentage of total office/classroom paper content by cost is "totally chlorine-free" (TCF) or "processed chlorine-free" (PCF)?

10%

IC4. Is there an environmentally preferable purchasing policy that prioritizes purchasing products with fewer toxic and hazardous chemicals, with higher recycled content, with greater recyclability, and with greater energy and water efficiency?

[X] Yes
[] No

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IC5. Provide the following information about the school's hazardous waste:

How much hazardous waste is produced at the school (lbs/person/year)? Negligible. Less than two gallons total.

List the types of hazardous waste generated: Paint, solvents, and grease.

How is hazardous waste monitored? All hazardous wastes are contained in a fireproof container in a locked maintenance building.

IC6. Which of the following benchmarks have been achieved to minimize and safely manage hazardous waste at the school?

[X] Our school has in place and actively enforces a hazardous waste policy for storage, management, and disposal of chemicals in laboratories and other areas with hazardous waste in place and actively enforced.

[X] Our school disposes of unwanted computer and electronic products through an approved recycling facility or program.

[X] All computer purchases are Electronic Product Environmental Assessment Tool (EPEAT) certified products.

IC7. Are "third-party-certified" green cleaning products used at the school? [X] Yes

[] No

Provide the following information about the green cleaning products used:

What percentage by volume of all cleaning products in use are "third-party-certified" green cleaning products? 85%

What specific green cleaning product standard (Green Seal, Ecologo, etc.) does the school use? **Green Seal**

Pillar I Element D

ID1. What percentage of students take the following to get to/from school?

Walk: 1%

Bicycle/scooter/skateboard: 0 %

Carpool (2+ students in the car): 4 %

School Bus: 95 %

Other Public Transportation: 0 %

Total Percentage: 100 %

Describe how these percentages were collected and calculated:

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Each student's mode of transportation is very clear because the school is located in a remotely rural area and virtually all students must be brought in by school bus. Only 1% of students are close enough (within 5 miles) to walk to school.

- **ID2.** Which of the following policies or programs have been implemented?
- [X] Our school has designated carpool parking stalls.
- [X] Our school has a well-publicized no idling policy that applies to all vehicles, including busses.
- [X] Vehicle loading/unloading areas are at least 25 feet from building air intakes, doors, and windows.
- **ID3.** Describe how the school transportation use is efficient and with fewer environmental impacts (e.g. the percentage of school-owned electric/hybrid/alternative fuel vehicles in the school's fleet, bus routes, or other indicators of significant reductions in emissions) (Maximum 100 words):
- **ID4**. Does the school have any of the following that intentionally connect students to the school grounds?
- [X] School garden
- [X] Wildlife or native plant habitats
- [X] Outdoor classroom
- [X] Restoration projects on school campus or nearby (removing invasive non-native plants, planting native plants)
- [X] Walking or running trails

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Pillar II: Healthy School Environments

Healthy student and staff environmental goal: The school improves the health and performance of students and staff. Pillar II includes two main Elements:

Element A: An integrated school environmental health program based on an operations and facility-wide environmental management system that considers student and staff health and safety in all practices related to design, construction, renovation, operations, and maintenance of schools and grounds.

Element B: High standards of nutrition, fitness, and quantity of quality outdoor time for both students and staff.

Each question in this section is designed to measure the school's progress toward Pillar II and its associated two elements.

Pillar II Element A

- **IIA1.** Which of the following pest management practices are employed?
- [X] Our school has an integrated pest management plan, as recommended by the California Healthy Schools Act, or organic gardening practices in place to reduce and/or eliminate pesticides.
- [X] Pest control policies, methods of application, pre-notification, and posting requirements are provided to parents and school employees.
- [X] Copies of pesticide labels, copies of notices, material safety data sheets (MSDS), and annual summaries of pesticide applications are all available and in an accessible location.
- [X] Our school prohibits children from entering a treated area for at least eight hours after the treatment, or longer if required by the pesticide label.
- IIA2. Which of the following practices are employed to improve contaminant control and ventilation?
- [X] Our school has a comprehensive indoor air quality management program that is consistent with EPA's Indoor Air Quality (IAQ) Tools for Schools.
- [X] Our school meets American Society of Heating, Refrigerating, and Air- Conditioning Engineers (ASHRAE) Standard 62.1-010 (ventilation for acceptable indoor air quality) or state or local code.
- [X] Our school has installed one or more energy recovery ventilation systems to bring in fresh air while recovering the heating or cooling from the conditioned air.
- [X] Our school has eliminated mercury-containing thermometers, chemical compounds, art chemicals, elemental mercury, etc.
- [X] Our school has installed local exhaust systems (including dust collection systems, paint booths, and/or fume hoods) at all major airborne contaminant sources, including science labs, copy/printing facilities, art and wood shops, auto shops, technology centers, and chemical storage rooms.
- [X] Our school disposes of any unwanted mercury laboratory chemicals, thermometers, and other devices in accordance with federal, state, and local environmental regulations.

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- [X] There are no wood structures on school grounds that contain chromate copper arsenate.
- [X] Our school visually inspects all structures on a monthly basis to ensure they are free of mold, moisture, and water leakage.
- [X] Our school's indoor relative humidity is maintained below 60%.
- [X] Our school has moisture resistant materials/protective systems installed (i.e. flooring, tub/shower, backing, and piping).
- [X] Our school has a chemical management program that includes: chemical purchasing policy (low-or no-volatile organic compounds (VOC) products), storage and labeling, training and handling, chemical inventory, hazard communication (clean up and disposal), purchasing policy for less toxic art supplies, and selecting EPA's Design for the Environment approved cleaning products.
- [X] Our school has an environmentally preferable purchasing policy.
- [X] Our school prohibits the use of tobacco products on campus and in public school busses.
- [X] Our school has CO alarms that meet the requirements of the National Fire Protection Association Code 720.
- [X] All of the ground contact classrooms at our school have been tested for radon within the last 24 months.

Is there an inventory of the combustion appliances and are they annually inspected to ensure they are not releasing carbon monoxide (CO)?

| [X] Yes | ` |
|----------------------------|----|
| [] N o | |
| [] No combustion appliance | es |

What percentage of all classrooms with radon levels greater than 4pCi/L has been mitigated in conformance with American Society for Testing and Materials (ASTM) E2121?

All ground contact classrooms have radon levels far below 4pCi/L.

IIA3 (**Element IIA Summary**). Describe any other measures that consider student and staff health and safety in all practices related to design, construction, renovation, operations, and maintenance of school grounds (Maximum 200 words):

The school campus is deliberately set among juniper trees native to the area so that students can enjoy the song birds that land in the trees. In all the school construction and playground design no trees have been cut down and minimal impact is made to the natural environment. Staff and students are encouraged to take short walks on walking paths around the campus to reduce stress and increase cardiovascular conditioning.

Pillar II Element B

IIB1. Which practices are employed to promote nutrition, physical activity, and overall school health? (Check all that apply)

[X] Our school participates in the USDA's HealthierUS School Challenge or another nutrition program.

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List USDA's HealthierUS School Challenge level: We have just begun the challenge.

List other nutrition programs:

- [X] Our school participates in a Farm to School program or other program to utilize local food in our cafeteria.
- [X] Our school has an on-site food garden.
- [X] Our school garden supplies food for our cafeteria.
- [X] Our students spent an average of at least 120 minutes per week over the past year in school supervised physical education.
- [X] At least 50% of our students' annual physical education takes place outdoors.

Describe the type of outdoor exercise opportunities and nature-based recreation available to students (Maximum 200 words):

The STAR School has a very active wellness program, designed by the Wellness Committee, made up of the principal, food service manager, parents and teachers. With the support of the whole school, the Wellness Committee leads the entire school (all students and all adults) on monthly walks of 5 or more miles. In addition 1/4th of all students in the school go on two day camping trips to hike, fish, and camp out in natural areas once in the fall and once in the spring every year.

[] 50% or more of students in 5th, 7th, and 9th grade have scored within the Healthy Fitness Zone on the California Physical Fitness Test (FitnessGram).

While we do not use the California Physical Fitness Test, the STAR School does involve all of our students in the SPARKS Fitness Test and 50% of the students have improved their fitness levels.

- [X] At least 50% of our students have participated in the EPA's Sunwise program (or other equivalent UV protection and skin health education program).
- [X] The school has reduced UV and heat exposure through the greening of its campus (e.g. planting trees, building shade structures, or converting asphalt areas to green spaces).
- IIB2. What percentage (by cost) of food purchased is certified as "environmentally preferable" (e.g. Organic, FairTrade, Food Alliance, Rainforest Alliance, etc.)?20 %

IIB3 (**Element IIB Summary**). Describe any other measures regarding high standards of nutrition, fitness, and quantity of quality outdoor time for both students and staff, that should be considered (Maximum 200 words):

Vegetables grown in the school's two greenhouses by the students are used in the schools Home Economics classes to make dishes using fresh vegetables (like tomatoes) to serve in the school's lunch program. Students are also introduced to traditional Navajo foods such as roasted corn, squash, and locally raised organic lamb and are shown by Navajo farmers how these foods have been prepared traditionally, before the advent of processed foods.

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Pillar III: Environmental and Sustainability Education

Student achievement goal: 100% of the school's graduates are environmentally and sustainability literate. Pillar III includes three main Elements:

Element A: Interdisciplinary learning about the key relationships between dynamic environmental, energy, and human systems.

Element B: Use of the environment and sustainability to develop STEM content knowledge and thinking skills to prepare graduates for the 21st century technology-driven economy.

Element C: Development of civic engagement knowledge and skills, and students' application of these to address sustainability and environmental issues in their community.

Each question in this section is designed to measure the school's progress towards Pillar III and its associated three elements.

Pillar III Element A

IIIA1. Which practices are employed to help ensure the environmental and sustainability literacy of graduates?

[X] Our school has an environmental or sustainability literacy graduation requirement. Describe the school's environmental or sustainability literacy graduation requirement (Maximum 200 words):

The STAR School graduation requirement for environmental and sustainability literacy is that each student is expected to complete an individual or group project during the middle school years (7th and 8th grades) that: 1) meets identifiable national STEM standards, and 2) investigates and provides possible solutions to environmental and sustainability challenges chosen by the student, and 3) provides service to the community that meets the STAR School Service Learning rubrics. Similar projects are expected at the lower grades, but are at a less challenging level and are intended to prepare students for the rigor of the big project in 7th and 8th grades.

[X] Environmental and sustainability concepts are integrated throughout the curriculum. Describe how environmental and sustainability concepts are integrated throughout the curriculum (Maximum 200 words):

The reading program used by the STAR School is literature based, and each grade has at least one reading book per year focused on environmental and sustainability concepts. This gives all teachers a chance to weave these concepts into reading instruction. In addition, all four of the stated and practiced Core Values of The STAR School (Respect, Responsibility, Relationship, and Reasoning) include a rubric that identifies ways in which these values apply to the environment around us. Thus a student who reaches the highest level of the rubric in each area will be demonstrating values that directly support environmental responsibility and sustainability practices.

[X] Environmental and sustainability concepts are integrated into classroom based and school-wide assessments.

Describe any classroom based or school-wide assessments in environmental and sustainability concepts and include what percentage of students scored "proficient" or better by local standards (Maximum 200 words): On each report card for each grade, students are given grades based on a locally developed rubric on how they have practiced the four STAR Core Values. Each of these core values (Respect, Responsibility, Relationship, Reasoning) has environmental and sustainability aspect built into the ED-GRS (2011-2012)

rubric. So students can assess themselves on how they are improving their level of demonstrating their application of environmental and sustainability concepts. In third quarter report cards this year, 86% of students K-8 demonstrated proficiency in these core values as evidenced by their behavior in the classroom and in projects throughout the campus.

Teacher made science tests addressing a range of topics and the scientific method are given in the 7th and 8th grades as part of the graduation requirement. Recent results indicate 80% of students are achieving proficiency on these tests.

In addition, students are assessed in grade 8 with the Arizona AIMS science subtest. Last year, 66% of the 8th grade students achieved proficiency on the science subtest.

[X] Professional development opportunities in environmental and sustainability education are provided for all teachers.

Describe professional development opportunities available in environmental and sustainability standards. Include the percentage of teachers who participated in these opportunities over the past two years (Maximum 200 words):

Every Friday afternoon students are dismissed so teachers can participate in professional development opportunities. At least one Friday a month all staff discuss environmental challenges and how to best involve the students in solving these challenges. Since our curriculum emphasizes place-based approaches, each teacher is encouraged to develop an environmental focus for the year and successful collaboration on professional development in these areas has been through the College of Engineering and Natural Sciences at nearby Northern Arizona University. In that College, the Institute for Tribal Environmental Professionals has provided four trainings this year for our staff on topics like air quality assessments and dust evaluations, as well as kits for constructing wind generators from junk and teacher training on how to teach with these kits. 100% of the teachers have received this training. In addition, in the past two years, 50% of our teachers participated in state sponsored week-long trainings in STEM teaching, enhancing their teaching skills in math and in the sciences.

IIIA3. Provide examples of school site projects and practices that demonstrate how students learn about the environment and sustainability, (e.g. storm drain stenciling, composting, pond/stream study, school farms, forests, restoration projects, native plant, pollinator, and vegetable gardens, etc.) (Maximum 200 words): The STAR School has multiple projects each year across all grade levels that demonstrate how students learn about the environment and sustainability. Examples include: Students visiting local farms and ranches to learn about caring for and harvesting traditional crops and livestock. Students maintain and gather data on the growth of vegetables in two school greenhouses during the winter. Plants are started by students in these greenhouses in the early spring and then transferred to the outdoor organic gardens. Permaculture instruction to 5th through 8th grade students is then followed up by students planting native plants and vegetables using permaculture techniques. Students in all grade levels are taught about various environmental and sustainability programs at the school and then are encouraged to provide short tours to visitors to explain these programs as part of their science mastery. These include the school-based facilities like the solar power system, the wind generator system, the solar powered well, the greenhouses and the outdoor gardens as well as rainwater harvesting from all buildings on campus.

IIIA4 (Element IIIA Summary). Supply any additional information that demonstrates how students learn about the environment and sustainability at every grade level within the school, incorporating both content and practice (Maximum 200 words):

The entire composting program at the school is performed by the students in all grades. Each class has additional service to the greening of the campus. For example, a $3^{\rm rd}/4^{\rm th}$ grade class is responsible for the pruning and drip irrigation of all the peach trees that students and adults have planted on the campus. Teachers weave in STEM goals into all these activities as well as the STAR School rubric on Service Learning.

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Pillar III Element B

HIB1. Do science courses frequently use sustainability and the environment as a context for learning science (such as asking questions, developing and using models, planning and carrying out investigations, analyzing and interpreting data, using mathematics and computational thinking, constructing explanations, and engaging in argument from evidence when exploring environmental and sustainability issues)?

[X] Yes

[] No

If yes, describe how science courses frequently use sustainability and the environment as a context for learning science: (Maximum 200 words)

Students in all grade levels are taught about what science has revealed about the cycles of life and this is integrated with traditional knowledge about these cycles and the interconnectedness of all living things taught for generations in the Navajo culture. The goal is to get these Native American students to see that science and math actually can complement rather than contradict indigenous values of the land. Student observations on natural settings as well as renewable energy technologies are recorded and questions are developed by students based on observations. Students investigate the questions of their choice through application of math and science tools as well as the values of the community. Students research all aspects of those questions including science, math and social studies issues and come up with the basic question of their study like: How do the wind turbines on our campus work? Or, Can we gather enough water through rain catchment to grow our vegetables?

HIB2. Does the school's curriculum make connections between classroom and college and career readiness, in particular, post-secondary options in environmental and sustainability fields (for example, courses, modules, or activities introducing students to environmental sustainability related career options, or career technical education in courses such as green sustainable design and technology, green construction, green energy, etc.)?

[X] Yes

If yes, describe these connections between classroom and college and career readiness (Maximum 200 words):

7th and 8th grade students are exposed to students from a nearby university who are majoring in fields related to the environment and sustainability because the professors are drawn to our solar and wind powered off-grid school to engage their students in real-life applications of green technologies. College students then present to our middle school students on what they are learning at our school and what kinds of careers they hope to have.

As a result of exposure of the students to the environmental and sustainability focus of the curriculum, 80% of the current 8th grade students plan to go to college and major in one of the sciences in order to help make life on the Navajo reservation where they live more sustainable. This high level of interest comes about as the result of positive experiences with science, math and technology and investigating the world around them in all grades.

IIIB3 (**Element IIIB Summary**). Provide any additional evidence of how the environment and sustainability develop STEM content knowledge and thinking skills to prepare graduates for the 21st century-technology driven economy are used (Maximum 200 words):

One of our 8th grade graduates came back to speak at our recent 8th grade graduation. She had just been awarded a Gates Millennium scholarship to pursue her doctorate in environmental engineering. She told the students that it was in our school and through our approach to science and math that first got her interested in environmental engineering. She told them they were lucky to be in such a place and to take advantage of the possibilities in science and math to help make the world a better place.

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Pillar III Element C

If not in all grade levels, specify which grades:

| IIIC1. At which grade levels do students conduct an age-appropriate, self-selected, civic/community engagement project related to environmental sustainability? |
|---|
| [X] All grade levels |
| [] Some grade levels |
| [] No grade levels |
| HIC2. Do students have meaningful outdoor learning experiences (experiences that engage students in critical thinking, problem solving, and decision making) at every grade level? [X] Yes [] Some grade levels [] No grade levels |
| |

Share how outdoor learning is used to teach an array of subjects in context, engage the broader community, and develop civic skills, specifying at which grade level each is implemented (Maximum 200 words): Students from all grades (K-8) are taken on guided walks around the campus in the fall and spring

semesters to observe the native plants and flowers that are blooming and learn the qualities and properties of each plant including the various uses of the plant by Navajo culture. For example, the yucca root, when shredded and mixed with water provides a cleansing solution that was traditionally used to shampoo hair. Elders from the community are brought in to teach how to produce dyes from various plants. Students are involved each spring and fall in helping local farmers plant and harvest corn, including in making traditional Navajo corn foods.

IIIC3. Describe partnerships with the local community (e.g., academic, business, government, non-profit and informal science institutions) that help advance the school, other schools (especially schools with fewer resources) and the greater community toward the Three Pillars. Letters of support may be requested (Maximum 300 words):

Although the school is remotely rural and there are no businesses in the immediate area, The STAR School has an excellent relationship with the nearby university, especially the college of engineering and the Institute for Tribal Environmental Professionals. The local tribal governments have been very interested in the school and have brought their tribal leaders, such as the Vice President of the Navajo Nation, to visit the school. Staff and students from the STAR School have presented on our use of alternative energy to power our school at numerous conferences including the National Indian Education Conference, The Native American Grant Schools Association Conference, and the Green Schools National Network Conference. In addition, STAR School students have made a short documentary on how the school runs on solar and wind power which is on the school's website (www.starschool.org) and was recently selected to be shown at the Colorado Environmental Film Festival. Finally, the school has been featured in the local Flagstaff paper numerous times, is frequently visited by faculty of nearby schools to see how we weave alternative energy into our curriculum, and has been visited often by science teachers from other countries.

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IIIC4 (**Element IIIC Summary**). Provide any additional evidence demonstrating that school programs develop civic engagement knowledge and skills, and encourages students to apply these to address sustainability and environmental issues in their community (Maximum 200 words):

In 2006, The STAR School received the Arizona Governor's Volunteer Service Award for their service learning project that involved surveying the community for homes without electricity and building handicapped ramps for elderly handicapped individuals living without electricity. The students, with help from STAR School staff, did the community assessment on electrical power, but realized that the bigger problem wasn't electrical power so much as it was the lack of handicap access. So they designed and built the handicap ramps as the class-wide project.

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