



# COLLEGE *of the* DESERT

## K-14 Education Consortium

<b>MINUTES FOR Friday, October 7, 2016</b>			<b>8:30 a.m.</b>	<b>Public Safety Academy, PSA 18</b>
<b>Members Present:</b>	<p>Pamela Ralston, Chair/Vice President of Student Learning, COD            Zerryl Becker, Dean, COD            Kevin Bibo, Assistant Principal CTE, Palm Desert High School            George Bullis, Principal, Desert Hot Springs High School            Martha Deichler, Deputy Superintendent/Principal, Borrego Springs USD            Jessica Enders, Director Education Centers, COD            Carl Farmer, MESA Program Director, COD            Teresa Haga, Assistant Principal, Rancho Mirage High School            Jeff Kabel, Work Based Learning, Rancho Mirage High School            Bob Hicks, Principal, Palm Desert High School            Pam Hunter, Executive Director, COD            Anne Kalisek, Director of Curriculum and Instruction, PSUSD            Joel Kinnamon, Superintendent/President, COD            Tess Lake, Principal, Riverside County Office of Education            Bryan Lee, Energize College Fellow, COD            Curt Luttrell, Registrar, COD            Pam Mathis, Counselor, Mt San Jacinto High School            Rosalia Mendoza, Counselor, PSUSD            Karen Perez, Assistant Principal, Coachella Valley High School            Amanda Phillips, Interim Dean, Counseling Services, COD            Steve Pinning, Director CTE, Palm Springs High School            Todd Reed, Principal, Desert Learning Academy            Carmezi Russell, WBL, Cathedral City High School            Michael Schneider, Assistant Principal, La Quinta High School            Amy Spears, Assistant Principal, Palm Desert High School            Karen Tabor, Interim Dean, Math &amp; Science, COD            Sheila Thornton, Vice President, Coachella Valley Economic Partnership (CVEP)            Adrian Torres, Curriculum, Xavier College Prep            Michelle Valenzuela, Counselor, Rancho Mirage High School            Joe Wachsmuth, Workforce Development Training Tech, COD            Erica Watson, Assistant Principal, Desert Hot Springs High School            Ryan Woll, Principal, Palm Springs High School</p>			
<b>Guest:</b>	Liz Fitzpatrick, SEI (Strategic Energy Innovations)			
<b>Recorder:</b>	Mary Lou Marrujo			

### AGENDA

<b>1. Welcome and Self Introductions</b>	
<b>2. Review and Approval of September 2, 2016 Minutes</b>	
<b>DISCUSSION</b>	The minutes were approved as submitted.

<b>3. Facility and campus expansions – Dr. Joel Kinnamon, Superintendent/President, COD</b>	
DISCUSSION	<ul style="list-style-type: none"> <li>• COD is opening two positions that will be working out of the President’s office the first year: (1) Director, Educational Partnerships &amp; Outreach; (2) Professional Expert/Consultant, focused on improving pathways, programming and support.</li> <li>• These positions will hopefully be working closely with many of those present today as we expand and more fully develop our relationships.</li> <li>• COD is also looking to improve working more closely at the grassroots level between the college and high schools. Towards that effort, funding from the Strong Workforce program will go towards hiring a professional expert to help build some of the tools to make our connections work more effectively.</li> <li>• Since 2012 the college has grown by 30%. We are currently at 14,000 students.</li> <li>• Much of the growth is attributed to the addition of classroom space and facilities, as well as, adding more staff and faculty.</li> <li>• This summer the college hired 26 new faculty.</li> <li>• We are at capacity at our Indio campus and are in the process of acquiring another parcel to add to that campus. Modulars were also added this summer.</li> <li>• Next week we will host an open house at the Wenzlaff Educational Center in Desert Hot Springs where we have installed new modulars for classrooms that started this fall.</li> <li>• We are installing an observatory at the Mecca/Thermal campus. It will be networked through the district so that all of our classrooms will have access.</li> <li>• We plan on expanding the Mecca/Thermal campus to use the farming land there to complement our culinary program.</li> <li>• We continue to move forward in acquiring the Palm Springs mall for the location of our west valley campus.</li> <li>• Currently COD is the second fastest growing college in the state.</li> <li>• There are still many needs that have been unmet, as we are only capturing 26% of the local high school seniors.</li> <li>• Pam Hunter briefly discussed the bond measure on the November ballot— Measure CC. The \$577 million bond will allow COD to continue our growth and expansion throughout the valley. The passage of this bond would translate to approximately \$68 a year per average assessed home in the Coachella Valley.</li> </ul>
<b>4. COD efforts to Build Cohesive Planning and implementation for Dual Enrollment – Pamela Ralston, Chair</b>	
DISCUSSION	<ul style="list-style-type: none"> <li>• COD is putting two positions forward to help our educational partnerships in the valley: <ul style="list-style-type: none"> <li>○ <b>Director, Educational Partnerships &amp; Outreach</b>—The Director will be responsible for planning, managing, coordinating and evaluating the activities of educational partnerships, school relations, and outreach, and other related duties and responsibilities. The Director will serve as a college liaison with public and private educational institutions to coordinate COD programs and services.</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>○ <b>Professional Expert/Consultant</b>—This position will focus on improving pathways, programming and support. The Consultant will develop and facilitate the development of dual enrollment programming.</li> </ul>		
CONCLUSION			
FOLLOW-UP ITEMS		PERSON RESPONSIBLE	DEADLINE
<b>5. Consortium Efforts – Pamela Ralston, Chair</b>			
DISCUSSION	<ul style="list-style-type: none"> <li>• As a group, we need to work towards the goals that were established at the summit meeting on January 13, 2016. What this meeting should look like, and what our work should look like.</li> <li>• We should pick one topic at a time.</li> <li>• Create a true strategic plan.</li> <li>• Form task force groups to work in more concerted ways in areas of expertise.</li> <li>• Anne Kalisek shared information from a meeting that took place yesterday between counselors, administrators and staff from COD and Cal State to start working on the College Readiness Block Grant and what that plan might look like.</li> <li>• As Anne was sharing the topics from her meeting yesterday, other topics emerged from this group that we hope to accomplish.</li> </ul> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <ol style="list-style-type: none"> <li>1. Math and English collaboration</li> <li>2. Articulated counseling, outreach, support, consistency</li> <li>3. Dialogue, articulation and shared work</li> <li>4. Concurrent/Dual Enrollment Orientation (parents, students, staff, faculty)</li> <li>5. Inclusion of alternative education—outreach</li> <li>6. Assessment – Multiple measures and testing (track down previous effort)</li> <li>7. Schedule synchronization</li> <li>8. Communication flow</li> </ol> </div> <ul style="list-style-type: none"> <li>• Discussion ensued on how to get the curriculum experts together.</li> <li>• Those interested in collaborating with COD’s dean of Math and dean of English were: Amy Spears, Kevin Bibo, Michelle Valenzuela, Ryan Woll, Anne Kalisek, Teresa Haga, Adrian Torres, and Ericka Watson.</li> <li>• COD will work on synchronization with the high schools.</li> </ul>		
CONCLUSION			
FOLLOW-UP ITEMS		PERSON RESPONSIBLE	DEADLINE
<ul style="list-style-type: none"> <li>• Provide a COD organizational chart to committee.</li> <li>• Work on creating a flow chart identifying contact point staff.</li> <li>• Develop task force groups.</li> </ul>			
<b>6. Energize Colleges – Liz Fitzpatrick, Associate Project Coordinator, Strategic Energy Innovations (SEI)</b>			
DISCUSSION	<ul style="list-style-type: none"> <li>• SEI is a non-profit organization sponsored by SoCalGas and Southern California Edison.</li> </ul>		

CONCLUSION	<ul style="list-style-type: none"> <li>• SEI provides high schools with no-cost support in two key areas: (1) energy education, and (2) conservation.</li> <li>• SEI helps schools invest in energy efficiency and renewable energy projects while engaging students in energy conservation, education, and leadership.</li> <li>• Their services are flexible and adaptable.</li> <li>• Bryan Lee, who is with the Energize College program at COD, advised that right now they are working on the Zero Net Energy (ZNE) program. In this program students combine energy auditing, conservation, and solar design to develop and advocate for a plan to achieve ZNE.</li> <li>• They are currently hiring interns.</li> </ul> <p>SEI handouts are attached.</p>	
FOLLOW-UP ITEMS	PERSON RESPONSIBLE	DEADLINE
<b>7. K12 Districts and COE Updates</b>		
DISCUSSION	<ul style="list-style-type: none"> <li>• Amanda Phillips, Interim Director of Counseling at COD, reported: <ul style="list-style-type: none"> <li>○ The list of counselors assigned to each high school is almost finalized. Because COD recently hired five new counselors, they will not be doubled up with high schools. The counselors will be contacting the administrators at each school.</li> <li>○ The outreach teams will be doing the application workshops earlier this year and encouraging students do the online orientation in February.</li> <li>○ The Assessment test will be available beginning late February through March.</li> <li>○ February 15, 2017 has been set for the counselor conference that COD hosts.</li> </ul> </li> <li>• Dr. Ralston discussed the committee agenda structure. She asked if the committee wanted to continue to have everyone report out, or would they like to manage reports out differently.</li> </ul> <p>It was the consensus of the committee to have requests for reports sent in advance to the recorder to be placed on the agenda.</p>	
CONCLUSION		
FOLLOW-UP ITEMS	PERSON RESPONSIBLE	DEADLINE
<b>8. Adjournment:</b> The meeting adjourned at 10:00 a.m.		

**NEXT MEETING:**

Friday, November 4, 2016 – 8:30 a.m.

Location College of the Desert – Room PSA 18



Energize Schools provides holistic services to help high school communities **green their facilities, conserve resources, and engage students** in service-learning and environmental leadership.

Nationwide, schools spend more than \$8 billion per year on energy, an operational expense second only to spending on books and computers. With greater resource efficiency, the EPA estimates that 30% of this money could be saved, freeing up funds to support student learning.



## Conservation

We provide support for student-led campus conservation initiatives while teaching leadership and project management skills. We support student and faculty leaders in goal setting, action planning, and implementation of conservation strategies including:

- School Green Team recruitment, planning and implementation
- Participation in the annual Energize Schools Energy Conservation Competition

## Education

We offer support to build sustainability career awareness and skills through project-based learning. Supportive services include:

- Project-based curriculum, aligned with the Common Core, CTE, and Next Generation Science Standards. See the reverse for a selection of available certificates and units
- In-person and online teacher trainings
- Instructional planning and direct instructional support
- Stipends for Education and Conservation Leaders at participating schools
- Annual Green Careers Conferences to explore green pathways



This program is funded by California utility ratepayers and administered by Pacific Gas and Electric Company, Southern California Edison Company, San Diego Gas & Electric Company and Southern California Gas Company under the auspices of the California Public Utilities Commission.



# High School Sustainability Curriculum

## Sustainability Certificates:

**Energy Auditing:** Hands-on experience that prepares students to perform an in-depth energy audit of their school.

**Zero Net Energy:** Students combine energy auditing, conservation, and solar design to develop and advocate for a plan to achieve ZNE at their school.

**Green Building:** Lessons in green building design, construction, materials, and economic to design a LEED Certified building.

**Sustainable Enterprise:** Students address a problem they observe in their community, develop a business plan, and start a new enterprise.

**Green Transportation:** Learn skills for green transportation careers through experiential activities like designing and building a solar car, making bio-diesel, and designing a transportation friendly city.

**Solar:** Design, size, and site a school solar system; conduct a school energy audit; and install a residential solar system.

Energize Schools provides standards-aligned, project-based curriculum resources to engage students in impactful sustainability projects today, as well as prepare them to be leaders in the future.

## Project-Based Learning Units:

Home Energy Assessment

Home Water Assessment

School Water Assessment

Home Solar Analysis

School Solar Analysis

School Transportation Assessment

Solar USB Charger

Solar Water Heater

Eco Audit - Business Sustainability Assessment

Watersheds and Public Water Systems

Engineering Aquatic Ecosystems

Aquaponics

Biomimicry: Engineering Inspired by Nature

## Guides:

School Zero Waste Guide

Energy Conservation Guide

School Sustainability Policy Guide

Sustainability Fair Guide

Water Conservation Guide





### SEI Sustainability Curriculum Resources

#### **California Career Technical Education (CTE) Energy, Environment, & Utilities Courses:**

This 2-course series fulfills the CA CTE standards for the Energy, Environment, & Utilities sector. SEI has UC A-G Program Status so that these courses can be utilized by any district in the state without requiring an independent district approval process.

- **Introduction to Green Technology:** The SEI Introduction to Green Technology course is a semester or year-long UC A-G, D – Lab Science course that introduces students to career opportunities in sustainable STEM fields. Designed to meet the California Career Technical Education Standards for the Energy, Environment, and Utilities (EEU) sector, students conduct a series of scaffolded projects:
  - Home energy use analysis
  - Carbon footprint analysis
  - Biomimicry design exercises
  - Build a mini-generator
  - Build a residential circuit
  - School Energy Audit
  - Wind turbine design competition
  - Solar car design/build
  - Solar USB (phone) charger build
  - Make biodiesel
  - Design/build of model residential building to LEED standardsThe course is supplemented by suggested field trips and shadowing of energy professionals in the field. Students have the option to present their capstone design projects at an Energize Schools High School Green Careers Conference.
  
- **Advanced Green Technology:** The SEI Advanced Green Technology course is a semester or year-long course, with the Introduction to Green Technology course as a pre-requisite. Students complete in-depth projects related to sustainable design, energy efficiency, and renewable energy. The course is in the process of UC A-G, G – Elective course approval. With the Introduction to Green Technology course, this series offers complete coverage of California Career Technical Education standards for the EEU Energy and Technology Pathway. Students will conduct the following projects:
  - Develop a Zero Net Energy Plan for your school:
    - Utility Bill Analysis
    - Conservation Action Plan
    - School Energy Audit and Report
    - School Solar Analysis & Design with Report on Recommendations
    - Culminating presentation of ZNE recommendations to their School Board



- Solar Installation Projects: ground-mounted and residential rooftop system installation
- Aquaponics system design, build, and maintenance
- Solar Hot Water system design and build
- Biomimicry International Design Competition

The course is supplemented by suggested field trips and internships in the green technology field. Students have the option to present their projects at an Energize Schools High School Green Careers Conference.

**Sustainability Certificates:** SEI offers 6 Certificates designed to develop career skills with high school students in a wide range of disciplines including science, math, social studies, leadership, and career technical education. Lessons can be delivered individually or as a semester or year-long program, and include background information, activities, worksheets, templates, and several optional extension projects. If students successfully complete the Certificate, they earn a Certificate from SEI and may concurrently earn high school and college credit.

- **Solar:** This Certificate is designed to prepare high school and community college students for entry-level positions in the solar industry, with a strong foundation upon which to develop a long and productive career in the industry. The SEI Solar Certificate, offered in collaboration with Grid Alternatives and the IBEW Electrical Workers' Minority Caucus, includes an introduction to Energy Fundamentals, Energy Auditing and Solar Installation; an optional ground-mounted or mock roof solar installation project; a Grid Alternatives residential roof installation project; a Solar Installation Certificate and; ideally, dual college and high school credit awarded. At the conclusion of the Certificate experience high school and community college students will have a strong understanding of energy and solar fundamentals and careers, and most importantly, they will have substantive field experience in energy auditing, solar design, and solar installation.
- **Energy Auditing:** The High School Energy Auditing Certificate provides instruction and hands-on experience that prepares students to perform a comprehensive energy audit of their school, and other residential and commercial buildings. By coupling relevant background material on sustainability, climate change science, and energy careers with specific auditing skills, this course gives students the knowledge they need to understand the energy auditing profession and the range of applications for the skills learned through this Certificate. The curriculum leads teachers and students through an audit that includes: appliances, lighting, HVAC and other mechanical systems, the building envelope, utility bill analysis, and audit report writing. The Certificate culminates with a student presentation of their findings and recommendations to key decision-makers, such as their school board.
- **Zero Net Energy:** This is a design project that challenges students to redesign their school to produce as much energy as it uses. Throughout four Modules on climate change and energy production, energy efficiency and conservation, renewable energy, and clean energy careers, students will conduct an analysis of their school's energy use, and create a School Zero Net Energy Design Proposal that integrates energy efficiency, energy conservation, and renewable energy into their school design. The School Zero Net Energy Design project empowers students



to become energy leaders in their community through the creation, implementation, and presentation of plans for creating a zero net energy campus to present to their district decision-makers. Students will be awarded an SEI Certificate in Zero Net Energy upon the completion and presentation of their final ZNE report.

- **Green Building:** The SEI Green Building Certificate provides hands-on lessons in green building design and construction, energy and water smart buildings, green building materials, green building economics, and the green collar workforce. Experiential activities include designing and constructing a model structure, conducting a green building site analysis, a school water audit, a life-cycle cost analysis of a green building project, and preparation for a green job interview.
- **Green Transportation:** The SEI Green Transportation Certificate provides background lessons in climate change science, sustainability concepts, sustainable fuels, personal vehicle technology, policy, urban planning, travel, and distribution. Students learn applicable skills to prepare them for green transportation career opportunities through experiential activities, including; designing and building a solar car, making bio-diesel, building a rocket stove, making a battery out of a lemon, calculating the walk score of a neighborhood, and preparing for a green transportation internship.
- **Sustainable Enterprise:** The SEI Sustainable Enterprise Certificate empowers students to start new initiatives in the for-profit, non-profit, and public sectors. Students first use critical and creative thinking to develop an opportunity based on an environmental and/or social problem they observe in their community or the world. The curriculum then guides students through the stages of business plan development and implementation, enabling them to experience the full entrepreneurship cycle.

**Project-Based Learning Curriculum:** SEI offers 14 project-based curriculum packages, ranging from 2-4 weeks of instruction, designed to develop career skills with high school students in a wide range of disciplines including science, engineering, math, social studies, leadership, and career technical education. Each curriculum unit focuses on a project to stimulate student interest in sustainability topics, ranging from energy to engineering to water. Lessons include background information, activities, worksheets, templates, and several optional extensions.

- **School Solar Design & Analysis:** The SEI School Solar Design & Analysis curriculum guides students through an analysis of the solar potential for their school. Students gain an in-depth understanding of solar science, solar system sizing, and design considerations. By completing the analysis, students can determine the system size, cost, and optimal location of a solar array for their school. In addition to solar science, this curriculum provides relevant background information on energy sources, the carbon cycle, the greenhouse gas effect, climate science, utility rate structures, and solar financial analysis. These topics are used as a basis for discussing why a school would consider a solar project. Students will complete a design for a solar system large enough to generate 80% of their school's electricity use. Students will use their calculations of

solar system size, cost, and payback period to develop a report and present their findings to their school board to make the case for solar at their school.

- **Home Solar Design & Analysis:** The SEI Home Solar Design & Analysis curriculum guides students through a solar analysis of their home. Students gain an in-depth understanding of solar science, solar system sizing, and design considerations. Completing this analysis allows students to determine the size, cost, and location of a solar system installed for use in their home. Students will use their calculations of solar system size, cost, and payback period to make the case for solar at their home.
- **Solar Phone Charger:** The SEI Solar Phone (USB) Charger unit guides students step-by-step through the process of building a solar USB charger. Students gain an in-depth understanding of solar science and basic electrical circuitry. In addition to solar science, this curriculum provides relevant background information on energy sources, the carbon cycle, the greenhouse gas effect, and climate science. These topics are used as the basis for how a solar device charger benefits the environment. Students will complete the construction of a solar USB charger that has the ability to charge any device with a USB connection.
- **Solar Hot Water:** The SEI Solar Hot Water curriculum guides students through designing and building a solar hot water collector. Students gain an in-depth understanding of science of heat transfer, water heating efficiency, and design considerations. In addition to solar water heating science, this curriculum provides relevant background information on energy sources, the carbon cycle, the greenhouse gas effect, and climate science. These topics are used as a basis for discussing the benefits of transitioning to more efficient and sustainable water heating. Students experiment to determine materials with high insulation properties and high solar radiation absorption factors. Then, students design and construct a solar water heater collector.
- **Watersheds & Public Water Systems:** The SEI Watersheds and Public Water Systems curriculum provides students with hands-on learning activities to explore how water flows through their local watershed, and is distributed and treated through their public water and waste water systems. Students gain an in-depth understanding of the importance of water, how water is treated and transported, and how humans are impacting water sources, as well as skills in computer applications, biology, and chemistry. Projects include creating a GIS Story Map of their local water systems, conducting water quality testing and analysis, and designing a water filter. Students are introduced to careers in the water industry ranging from ecologist to engineer.
- **Aquaponics - Sustainable Systems Design:** The SEI Aquaponics curriculum emphasizes the importance of sustainable design and resource management by guiding students through the technical design, construction, and maintenance of an aquaponics system at their school. This curriculum is written to be scalable, from classroom desktop systems to larger greenhouse systems. Through hands-on activities, students gain an in-depth understanding of aquatic ecosystems and nutrient cycling, as well as engineering principles and design processes. The project



culminates with the completion of a functional aquaponics system, from which students can harvest their own food!

- **Solar for Aquaponics - Unit Extension:** As an extension to the SEI Aquaponics Curriculum, SEI's Solar for Aquaponics unit teaches students about the benefits and fundamentals of solar energy and takes them through their own analysis to design and size an off-grid, ground-mounted solar PV system to power the pumps in the aquaponics system. This curriculum extension contains core lessons around sizing and choosing the appropriate major components in the solar PV system including the solar panels, charge controller, inverter, and batteries. The unit culminates with the installation of the solar PV system that students designed. At the completion of the Aquaponics curriculum and solar extension, your school will have a sustainable, off-grid, closed-loop system that will provide learning opportunities for years to come.
- **Biomimicry - Engineering Inspired by Nature:** The SEI Biomimicry curriculum emphasizes the importance of climate change mitigation and sustainable design by guiding students through the technical design and construction of an engineering project inspired by nature. This curriculum includes background lessons in climate change science, evolution, and engineering, as well as hands-on activities, enabling students to gain an in-depth understanding of sustainable engineering principles and design considerations. The project culminates with a student design competition!
- **Eco Audit - Local Business Sustainability Assessment:** The SEI Eco Audit curriculum gives high school students real-world experience in promoting energy efficiency and sustainability by giving them the chance to perform a full sustainability audit for a local business. Students receive audit training, recruit a business to work with, perform an audit, create a report, and give a presentation on their findings both to their classmates and to the business they have audited. Through this experience, students gain skills in professional communication, report writing, and commercial sustainability auditing.
- **Engineering Aquatic Ecosystems:** The SEI Engineering Aquatic Ecosystems curriculum guides students through the design challenge of developing a self-sustaining, closed-loop aquatic ecosystem that supports at least 5 organisms for at least 3 weeks. This project is designed to be highly self-directed and encourages students to identify problems and find solutions through self-guided experimentation and research. Based on their findings, students will choose living organisms, design the ecosystem, troubleshoot problems, and test solutions. Students conduct water quality testing and analysis, research projects, and develop technical drafts. Students are also be introduced to careers in the water industry, ranging from ecologist to engineer.
- **Home Energy Assessment:** The SEI Home Energy Assessment curriculum guides students through an assessment of energy usage in their home. Students learn relevant background information on energy sources, renewable versus non-renewable energy, and climate change science that prepares them to evaluate energy efficiency and energy conservation opportunities and educate their



families. The curriculum is both fun and technical, allowing students to consider the potential cost and greenhouse gas emissions reductions that can be achieved through smart energy choices.

- **Home Water Assessment:** The SEI Home Water Assessment curriculum helps students understand the importance of water and opportunities for conservation by exploring the different ways we use water in our lives, directly and indirectly. Students learn about the water cycle, the energy-water nexus, and complete activities that allow them to assess how much water their family uses at home and prioritize opportunities for water use reduction.
- **School Water Assessment:** The SEI School Water Assessment curriculum emphasizes the importance of water as a resource, and guides students through an exploration of the different ways we use water at school and in other commercial buildings, both directly and indirectly. Students learn about the water cycle, the energy-water nexus, and complete an in-depth school audit that allow them to assess how much water is used at their school and develop a report with water use reduction recommendations.
- **School Transportation Assessment:** Transportation accounts for 28% of greenhouse gas emissions in the United States. Reducing carbon emissions and improving air quality in schools requires an understanding of how students and teachers travel to and from school. The SEI School Transportation Assessment provides hands-on lessons that guide students in conducting a transportation audit and calculating school transportation carbon emissions. By evaluating current transportation practices and impacts, students and school staff create informed strategies to encourage more sustainable transportation alternatives. Students will gain an in-depth understanding of the transportation landscape at their school through a series of quantitative and qualitative Transportation Audits. Students will make the connections between vehicle miles traveled, miles per gallon, and climate change by calculating school trip emissions.
- **Energy & Solar Monitoring:** The SEI Energy and Solar Monitoring Guide helps students to track their school's electricity use over time, solar production (if relevant), and the success of energy conservation campaigns. This user-friendly tool helps students to learn Excel skills, calculates outcomes, and creates graphs to help students to educate their school community on energy use and production patterns.

**School Sustainability Guides:** SEI offers 4 school sustainability guides. Each guide supports student leaders to design and launch action-projects to reduce their impact on the environment and raise awareness. The guides provide templates and worksheets leading students in action planning and outreach to their school and community, and offer strategies to organize and sustain a team to maintain conservation efforts and achieve long-term goals.

- **School Zero Waste Guide:** This is an essential Guide for schools looking to reduce the amount landfill waste generated on campus. The SEI School Zero Waste Guide contains the information and tools necessary to establish a Green Team, set a waste diversion goal, develop a plan for reducing waste, establish a baseline for

landfill waste generated, implement waste reduction measures, and verify reduction results. The Zero Waste Guide identifies the important materials, preparation tasks, and waste audit processes and analyses to assess your school's waste and implement conservation campaigns. The Guide provides resources for understanding the school's existing waste infrastructure and diversion baseline. After the initial assessment, students are provided with easy-to-use resources and ideas for dramatically decreasing the amount of landfill waste produced, and measuring and verifying their results. Successful results motivate students, faculty, and staff to deepen and sustain their collective changes once they've seen the significant implications for both school operating costs and the environment.

- **Energy Conservation Guide:** This is an essential Guide for schools looking to reduce the amount of energy used at your school. The SEI Energy Conservation Guide contains the information and tools necessary to establish a Green Team, set a goal, develop a plan for reducing energy consumption, establish a baseline for energy use, implement energy reduction measures, and verify reduction results. It identifies the important materials, preparation tasks, and energy audit processes and analyses to assess energy use and implement conservation campaigns. The Guide provides resources for understanding the school's existing energy usage and strategies for reducing energy use such as delamping and reducing phantom loads. The results of the implementation of a School Conservation Action Plan can have huge impacts on energy costs and environmental impact.
- **School Water Conservation Guide:** Water is a scarce resource. Taking care of our limited water supplies, and the ecosystems that depend on them, is key to responsible environmental stewardship. The SEI School Water Conservation Guide contains the information and tools necessary to establish a Green Team, set a goal, develop a plan for reducing water consumption, establish a baseline of historic or current water use, implement water use reduction measures and projects, and verify reduction results. The Guide identifies the important materials and preparation tasks to assess your school's potential for water conservation projects and strategies. The Guide provides resources for completing greywater installation projects, building a rainwater catchment system, and employing water-wise landscaping techniques. The results from these projects can motivate students and staff to implement changes that can have significant implications for school operating costs and the environment.
- **School Sustainability Policy Guide:** The SEI School Sustainability Policy Guide is designed to explain how school policies and regulations are created and the economic, environmental, and social benefits they can produce. The guide simplifies the complex task of policy development and approval by providing examples of existing policies and regulations that address issues in a wide array of sustainability topics, including energy, water, waste, and procurement. In addition to examples, the Guide also includes templates to ease the process of creating new sustainability policies at your district or school.
- **Sustainability Fair Guide:** The SEI Sustainability Fair Guide provides everything students, teachers, administrators, and parents need to create a fun and engaging school and community event to promote sustainability and provide hands-on



environmental education activities. The Guide offers tools for planning, project management, fundraising, outreach, and fair activities to create an exciting and impactful event that attracts a wide audience.

**Elementary and Middle School Curriculum:** SEI offers 3 curriculum units designed to introduce energy and sustainability concepts to younger students grades K through 8.

- **Sustainability (Grades K-1):** The SEI Sustainability Grades K-1 curriculum explores the fundamental concepts of sustainability through 12 interactive, hands-on lessons about climate change, energy, water, transportation, and waste. The adaptable lessons allow the curriculum to span multiple disciplines, class schedules, student skill levels, and background knowledge. Concepts covered in the curriculum include the importance of protecting Earth's natural resources, air pollution, global warming, the greenhouse effect, waste management, the water cycle, and green transportation. Examples of experiential activities include a greenhouse effect game, creating a compost bin, designing "Don't Litter" posters, and experimenting with the three phases of water.
- **Protect Your Climate (Grades 4-5):** The SEI Protect Your Climate curriculum includes 16 units of project-based learning activities about climate protection and energy use reduction for 4th and 5th grade students. Hands-on activities engage students in understanding and applying important climate change concepts. By integrating science, language arts, and mathematics, the curriculum encourages logic, foresight, and critical thinking, empowering students to make informed decisions to protect the climate.
- **School Energy Audit (Grades 4-8):** The SEI School Energy Audit Grades 4-8 curriculum provides hands-on training in the fundamentals of energy, climate change, energy auditing concepts, and techniques. Students of all levels learn how to conduct an energy audit, using tools such as light and watt-meters to measure how much energy is being used within a room. Students collect and input data into the SEI reporting spreadsheet, and generate a report that provides recommendations specific to the school site. Students identify low or no cost energy saving behaviors that can take place at school, and develop an understanding of the benefits of energy conservation and efficiency in terms of saving energy, reducing costs, and protecting the environment.