

CAELI District Innovation Webinar



**“Energy is Everything:
From Classroom to Action”**

**Featuring:
The Energy Coalition & Laguna Beach USD**

April 24, 2025



**CALIFORNIA
ENVIRONMENTAL
LITERACY
INITIATIVE**



Nate Ivy

Instructional Coach

Fremont Unified School District

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Map Padlet

Padlet

Amy Frame + 30 • 19d

CAELI District Innovation Hub Webinars

Please add a map pin for you and your organization. Include a website or LinkedIn link.

Manteca, CA, USA

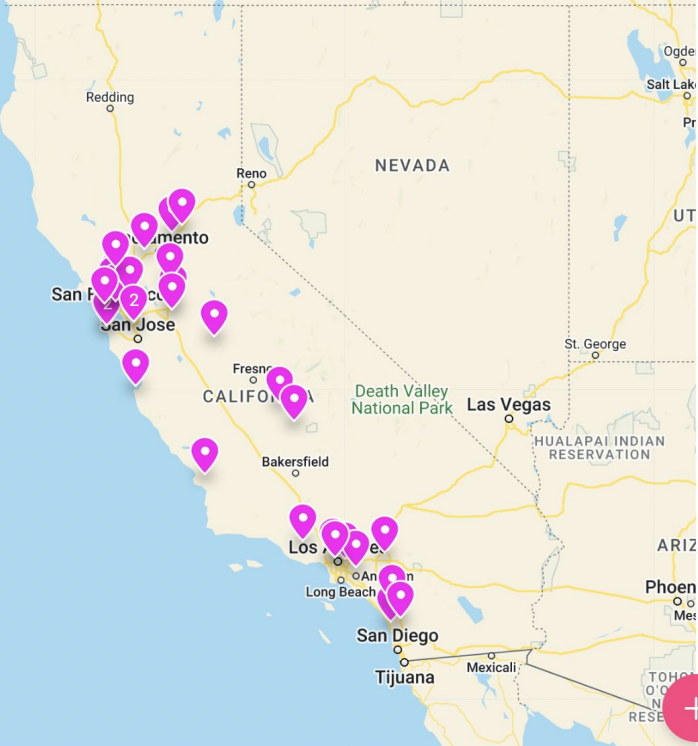
Kristine Stepping, Durham Ferry...

1910 Magnolia Ave, Los Angeles, CA 90...
Wildwoods + LA STEM Collective

55 Music Concourse Dr, San Francisco,...
California Academy of Sciences

San Luis Obispo, CA
San Luis Obispo, CA

Fremont Unified School District, Tech...



Map showing locations of CAELI District Innovation Hub Webinars across California. Pins are placed on a map of California, indicating locations such as Manteca, CA, USA; Kristine Stepping, Durham Ferry...; 1910 Magnolia Ave, Los Angeles, CA 90...; Wildwoods + LA STEM Collective; 55 Music Concourse Dr, San Francisco,...; California Academy of Sciences; San Luis Obispo, CA; San Luis Obispo, CA; and Fremont Unified School District, Tech...

Amy Frame 4h

Visalia, CA



tenstrands.org

Ten Strands: Environmental Literacy for all California Students

Amy Frame, Ten Strands, Director of Strategic Partnerships
(<https://www.linkedin.com/in/amy-frame-273967100/>)

0 0

Click the + sign to add your name, location and links.



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District Innovation Hub Goals

1. **Build a community** of district practitioners and partners.
2. Create, curate and **share** environmental literacy and sustainability **resources**.
3. **Build capacity** for district planning for environmental literacy and sustainability.
4. Cultivate, support, and **showcase leading edge exemplars**.
5. Research, design, and deliver the best green district support strategies.

District Innovation Hub



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Green Career Education Initiative

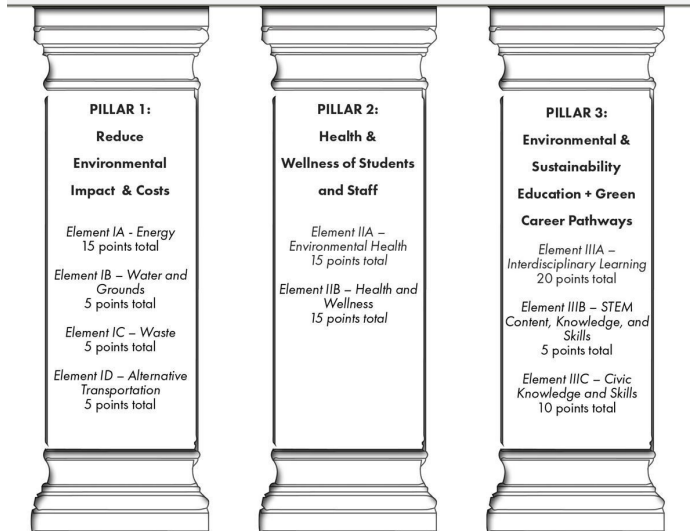
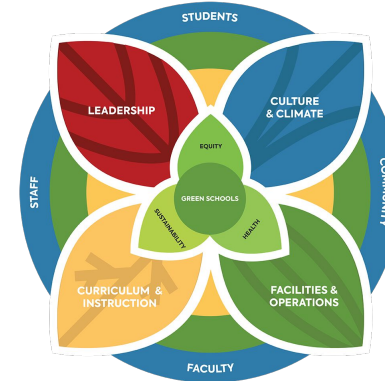
1. Create **equitable access** to the high-growth, **living-wage green careers** essential to creating a **sustainable future**.
2. Facilitate the development of an **environmentally-literate workforce** by fostering the integration of career and environmental education into TK-14 CTE and other academic coursework.
3. Find new ways to provide all students equitable access to high-wage careers, jobs, and trades that **support a green economy**.

Green Career Education Initiative






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Systems Approaches



4Cs Whole Systems Framework for Environmental and Climate Action in Schools

*Adapted from Sustainable Schools Project & Plymouth University; Andra Yeghoyan - 2013

 CAMPUS	 CURRICULUM	 COMMUNITY & CULTURE
<i>Operations across the buildings and grounds model sustainable and resilient practices, minimize disruptions for learning, and serve as a lab for learning.</i>	<i>Curriculum integrates Environmental and Climate Literacy as well as principles and practices for Solutionary Teaching and Learning.</i>	<i>Evidence exists within the “walk” and the “talk” of the school community for prioritizing sustainability and resiliency, and developing strategic partnerships with community based organizations.</i>

Constituents



Students



Faculty
and Staff



Administrators



Community
Partners and
Families



Agenda

4:00 - 4:10 Welcome and Connections

4:10 - 4:50

- Laguna Beach Sustainability Plan
- Overview of The Energy Coalition Programs
- Thurston Middle School Implementation

4:50 - 5:00 Q&A

5:00 - 5:05 Closing, Feedback, and Resources

5:05 - 5:30 Breakout Room Discussions



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Presenters



Siria Salas

The Energy Coalition
Program Manager



Anna Straszewski

The Energy Coalition
Energy Fellow



Gloria Harwood

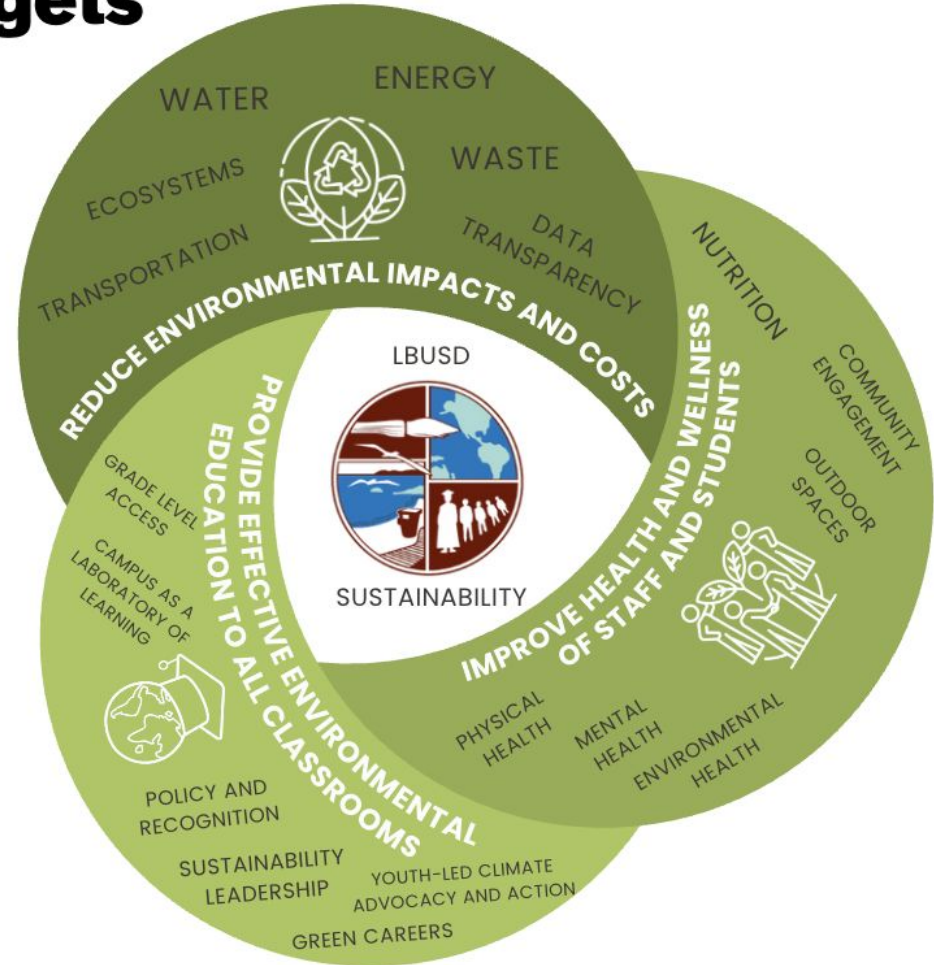
Laguna Beach Unified
School District

Coordinator of
Environmental
Literacy

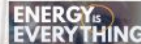
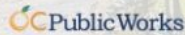


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Strategic Targets



Goal 1: Reducing Environmental Impacts and Costs

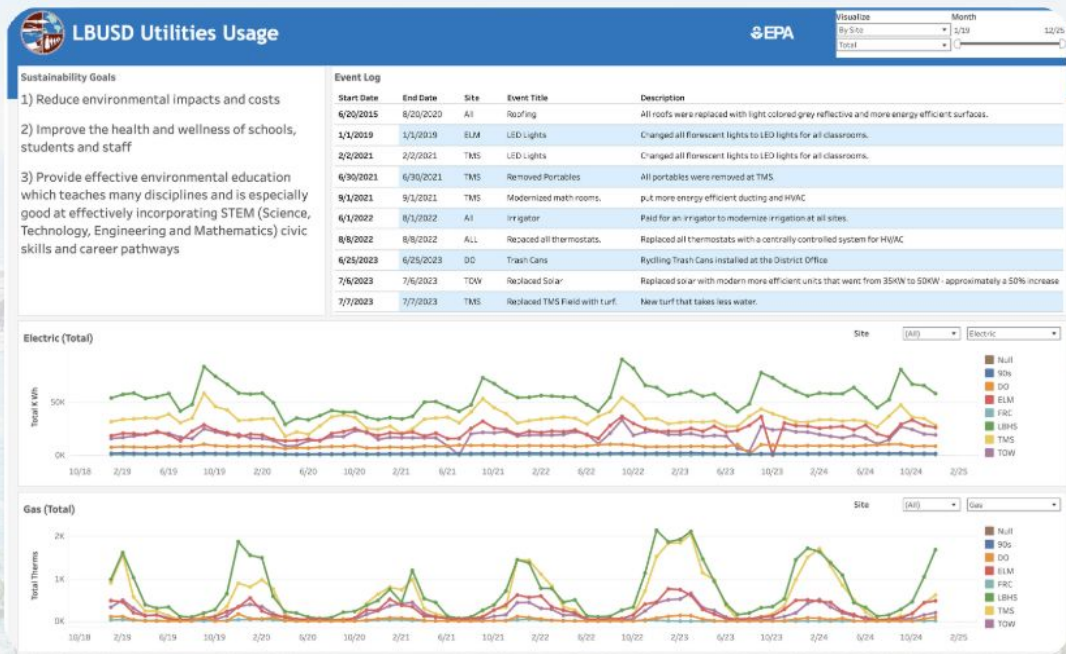


Goal 1: Target

Collaboration between technology, facilities, and sustainability teams to create an interactive dashboard to be used in **operations** and **instruction**.

Two professional learning opportunities were offered at LBHS and TMS for instructional design and place-based education during March.

Sustainability Tracking and Dashboard





Goal 2

Improve Health and Wellness for Students and Staff



Laguna Roots: Nurturing Mental Health Through Nature

Join us for a day of nature-based activities and mindfulness practices to support mental health.

Nurture through Nature Seminar

April 18, 2025
9:00 am - 10:30 am

Discover how nature reduces anxiety, improves focus, and boosts resilience in students with insights from Dr. Mahtab Jafari and LBUUSD specialists. Learn practical strategies to integrate nature therapy at home and in schools for student well-being.



Goal 3

Provide Effective Environmental Education to All Students



16 Green Gatherings this school year, 85+ teachers



Unit Design with added sustainability component



Support in instructional design within the Learner Profile



Environmental Leadership - FLOW and 4 Site Green Teams



LBHS CA State Seal of Civic Engagement Recognition



Instructional design within AB 285 Climate Literacy and Green Career Education



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Ten Strands
Connecting Education, Environment, and Community



SCHOOLPOWER
Laguna Beach Education Foundation



**GREEN SCHOOLS
NATIONAL NETWORK**

ENERGY IS EVERYTHING



Our Key Service Areas

TEC is creating the building blocks for a **new energy economy** in which communities become energy-producing networks and clean energy becomes **affordable and accessible** for everyone.



Funding
Strategies



Program
Design



Education
& Workforce



Marketing
& Outreach



Policy
& Planning

Energy is Everything Overview

Our Mission

Our mission is to inspire students of all kinds to make sustainability a part of their everyday lives.

ENERGY IS EVERYTHING

A TK-12th grade education program that provides educators with the tools and resources to help their students build the knowledge and skills needed for a changing energy future.

Enrolled educators gain access to a variety of resources at **no cost!**

- **NGSS-aligned** environmental STEAM lessons
- **Lessons supplies** for a hands-on learning experience
- **Online resources** to encourage an interest in STEM careers
- **Staff support and co-teaching** from the Energy is Everything team



Energy is Everything Goals

1

Energy is Everything increases student literacy in environmental concepts of energy, natural resources, environmental science, engineering design, sustainable behaviors, and STEM careers.

2

Energy is Everything introduces students to the Student Energy ACTIONS as a reminder to adopt sustainable behavior everyday.

3

Energy is Everything teaches students about high-value energy and STEM career pathways, and gives students the tools they need to pursue them.

4

Energy is Everything incorporates career concepts for all learners, since early exposure to career options in the clean energy industry increases the chances of students pursuing and securing high-demand energy careers.

Our Funding Partners

Energy is Everything is funded by California utility customers, administered by Pacific Gas and Electric Company (PG&E), and supported by the state's other investor-owned utilities (IOUs), under the auspices of the California Public Utilities Commission (CPUC).

Educators in IOU areas across California are eligible to enroll and receive the Energy is Everything program at no-cost*



***Pacific Gas and
Electric Company®***



SOUTHERN CALIFORNIA
EDISON®



*Program funds, including any funds utilized for rebates or incentives, will be allocated on a first-come, first-served basis until such funds are no longer available. This program may be modified or terminated without prior notice. Customers who choose to participate in this program are not obligated to purchase any additional goods or services offered by The Energy Coalition or any other third party. The selection, purchase, and ownership of goods and/or services are the sole responsibility of the customer. None of the IOUs make any warranty, whether express or implied, including the warranty of merchantability or fitness for a particular purpose, of goods or services selected by customer. None of the IOUs endorse, qualify, or guarantee the work of The Energy Coalition or any other third party. Eligibility requirements apply; see the program conditions for details.

Statewide Program Reach



California

K-12 students from local education providers who fall within the state of California and are within the service territories of:

- Pacific Gas and Electric Company
- Southern California Edison
- Southern California Gas Company
- San Diego Gas and Electric Company

Target Audience

- K-12 students from local education providers
- Formal and Informal
- Classified as disadvantaged
 - Classified as Title 1, rural,
 - Free and Reduced Price Meal (FRPM) above 40%
 - Located in a zipcode scoring in the top 25% statewide per CalEnviroScreen 4.0
 - classified as Rural

Program Offerings

190+

Environmental STEAM lessons available to enrolled educators!

Modular Design

Grade Level

Planet
Protectors
TK-2

Resource
Managers
3-5

Earth
Engineers
6-8

Future
Innovators
9-12

Topics



Agriculture &
Greening



Air &
Transportation



Circuitry



Climate
Literacy



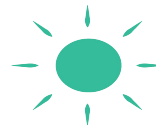
Electricity



Electrification



Non-renewable
Resources



Renewable
Resources



Waste
Management



Water-Energy
Nexus

Education Standard Alignments

Next Generation Science Standards



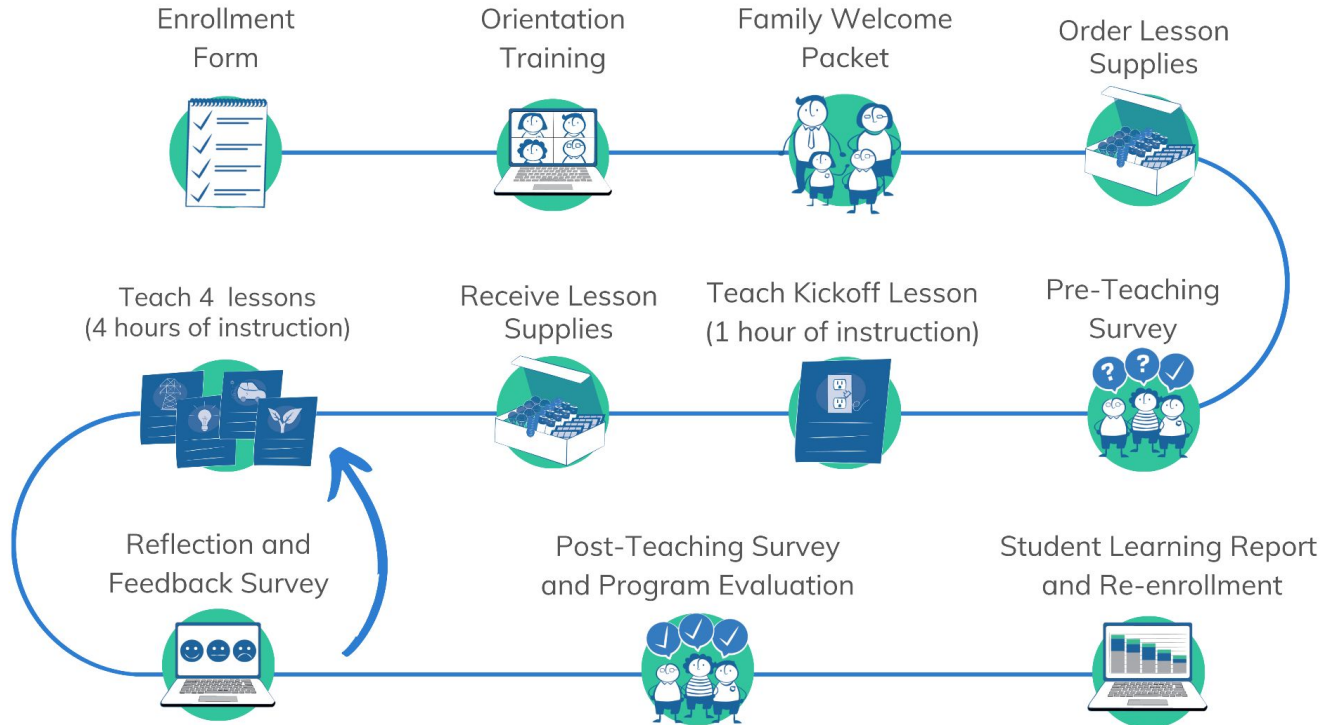
California's Environmental Principles



Career and Technical Education



Implementation Process



Student Energy ACTIONS

Set of seven actions, founded on environmental principles. This helps create a solid foundation for creating awareness, engaging in sensible habits, and taking action!



My Future Energy Career

- My Future Energy Career explores career pathways and highlights STEM Heroes
- Included in all lessons and programs
- Recorded webinars and videos can be seen online on the [Energy is Everything](#) page on YouTube
- Virtual In-classroom speakers can be arranged from our many local partners
- Lesson handouts and videos



Career Technical Education

Energy, Environment, and
Utilities

Environmental Resources

- Pathway for 2 year implementation

Curriculum

- Easily integrates with existing CTE courses
 - Environmental Engineering
 - Green Building

Internship

10-weeks, 4 modules

Can also adjust to fit
pre-existing school structure

- Completing ESRI ArcGIS training workshops
- Participating in My Future Energy Career webinars
- Compare home usage of energy and water data
- Tell the story
- Create maps
- Engage audiences

Junior Energy Manager Certification

6-12th-grade students

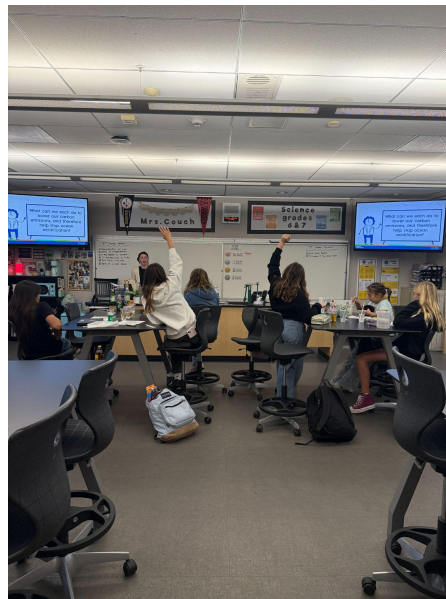
Provides students with

- knowledge and skills to become smart energy managers;
- opportunities for active engagement and integration with language arts, civics, science, mathematics, and the environment; and
- introduction to environmental and energy career pathways using the latest new technology.

THURSTON LIBRARY

**Energy is Everything
@ Thurston Middle School**

Students learned and understood new environmental concepts, identified actions they can take to improve the environment and explored environmental issues in depth.



Express ACTIONS

Kickoff Lesson

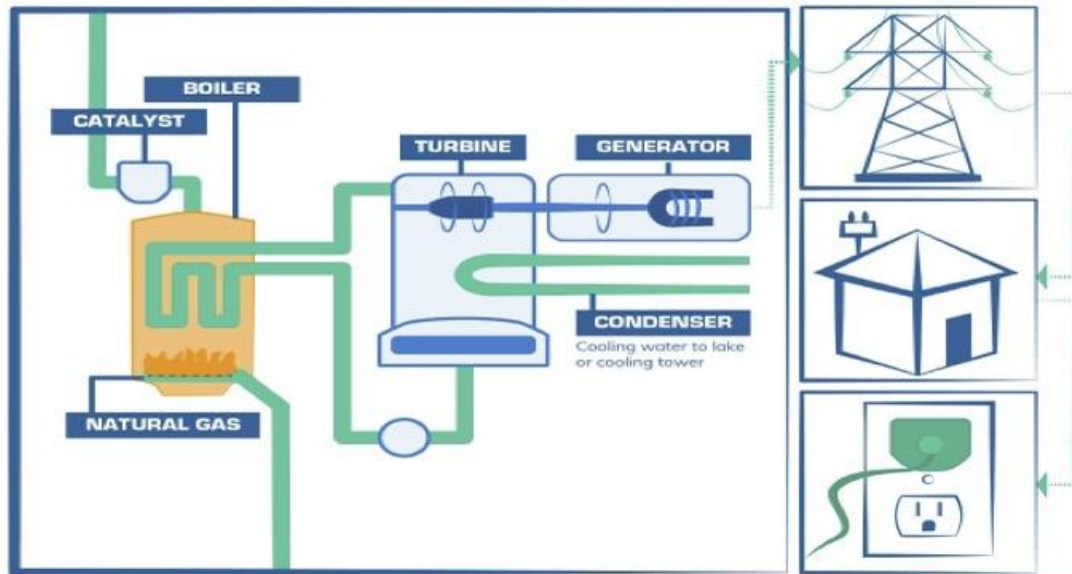
Lesson Description
Students learn about simple daily routines that can impact the environment. Students watch the Student Energy ACTIONS video, take notes, and play the Tell Me About It! game, to explore different actions they can take to negate the negative effects humans have on the environment and help save the planet.

Lesson Objective
Students will learn and understand new environmental concepts, identify actions they can take to improve the environment and explore environmental issues in depth.

<p>Lesson Topic(s)</p> <ul style="list-style-type: none"> Human impacts on the environment <p>Suggested Preparation Time</p> <ul style="list-style-type: none"> 10 min Ensure the video is accessible at the time of viewing <p>Suggested Teaching Time</p> <ul style="list-style-type: none"> 30 min <p>Driving Question How do your actions affect the environment?</p>	<p>Materials</p> <p>Educator Gathers</p> <ul style="list-style-type: none"> Student Energy ACTIONS video Student Energy ACTIONS posters Student Energy ACTIONS slides Tell Me About It! flashcard template (one sheet per student) scissors <p>Vocabulary</p> <ul style="list-style-type: none"> electricity environment impact pollution power plants
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ELECTRICAL GENERATION: WHERE DOES OUR ELECTRICITY COME FROM?



Fueling our Lives

Lesson Description

Students will discuss the value of electrical energy in their everyday lives. Using a power plant diagram and web-based sources, students will analyze steps to the electrical generation process and research renewable (alternative) energy sources.

Lesson Objective

Students will obtain, evaluate, and communicate information to design a model that demonstrates how energy transforms and transfers at a power plant (parts to a system). They will also analyze and interpret data related to renewable and nonrenewable energy resources and identify patterns.

Lesson Topic(s)

- Electrical generation process
- Energy transfer
- Renewable and non-renewable energy

Suggested Preparation Time

- 10 - 15 min
- Review the lesson

Suggested Teaching Time

- 140 - 160 min
- This lesson can be expanded to carry over various class periods or shortened with pre-vetted sites and articles for students to research. Teaching time is adjustable based on the time provided for research.

Driving Question

How do people's decisions as energy consumers impact our environment?

Materials

Educator Gathers

- Fueling our Lives vocabulary slides
- Electrical Generation Process diagram
- Energy Resources 101 student text
- 1 poster paper per group

Vocabulary

- benefit
- climate change
- energy
- fossil fuels
- natural resource
- nonrenewable resource
- renewable resource
- trade-off

Students researched and modeled how energy transforms and transfers in a power plant, and analyzed data on renewable and nonrenewable energy to identify patterns.



Ocean's Balance

Lesson Description

Students will experiment by testing various common household liquids using pH testing strips to determine how carbon dioxide increases the oceans' acidity.

Lesson Objective

Students will conduct an experiment that demonstrates the pH scale range and how carbon dioxide increases the oceans' acidity.

Lesson Topic(s)

- Ocean acidification

Suggested Preparation Time

- 10 min

Suggested Teaching Time

- 45 min

Driving Question

How does excess carbon dioxide in the ocean change the chemistry of the water?

Materials

Provided by The Energy Coalition

- different colored clay
- toothpicks
- paper straws
- pH indicator
- clear plastic cups

Educator Gathers

- Molecular Ocean Acidification Process handout
- pH Scale handout
- various liquids to test:
 - lemon juice
 - vinegar
 - water
 - baking soda mixed into water
 - dish soap mixed into water

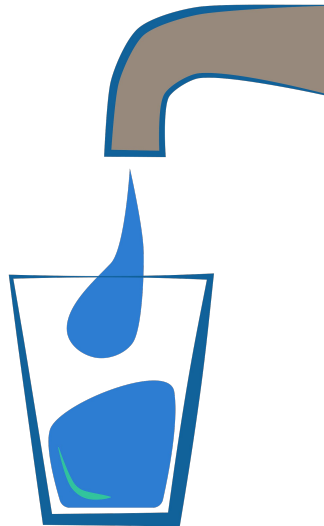
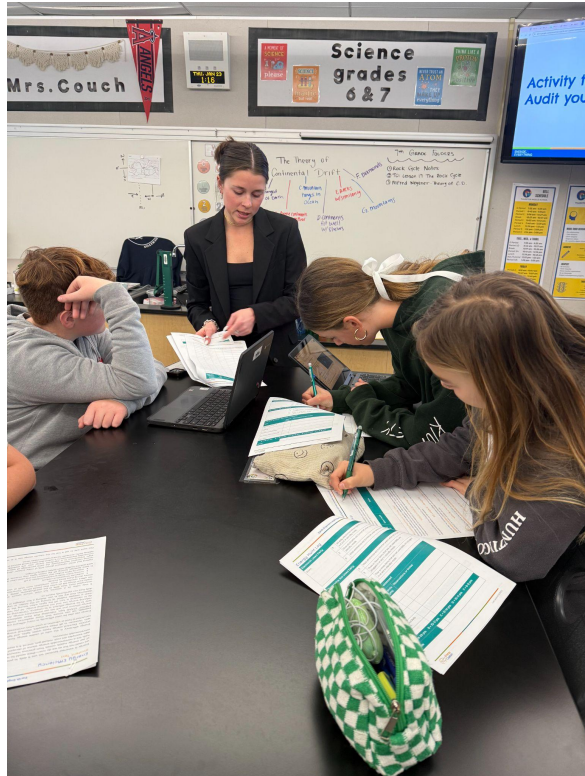
Vocabulary

- acid
- base (alkalinity)
- carbon sink
- indicator
- pH scale

Students conducted an experiment that demonstrates the pH scale range and how carbon dioxide increases the oceans' acidity.

ENERGY is EVERYTHING

a program of  The Energy Coalition



Water-Energy Audit

Lesson Description

Students will learn about water as a limited resource, become aware of where their water comes from, and understand where it gets used. They will also learn how to read a water bill, conduct a water flow rate experiment, and discuss opportunities for using water more wisely at home and on campus.

Lesson Objective

Students will understand California water sources and their use, define flow rate and convert units, and read a residential water bill. They will also become empowered to use water efficiently to protect natural resources, compare amounts of water used in different activities, discuss ways to use water more wisely and take action to reduce water use at home, school, and in the community.

Lesson Topic(s)

- Water use
- Water conservation

Suggested Preparation Time

- 10-15 min
- Identify the California water map for students to use

Suggested Teaching Time

- 45 min
- This lesson can be expanded to run over various class periods.
- Audits can be repeated to provide benchmarking data and comparative analysis.

Driving Question

Where do we use water most, and how can we become more efficient?

Vocabulary

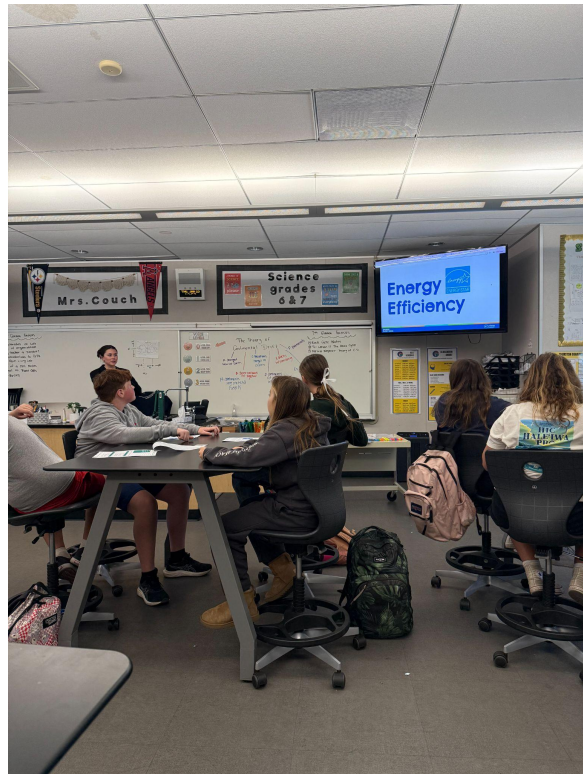
- agricultural irrigation
- desalination
- manufacturing water use
- potable
- residential water use
- water cycle

Materials

Educator Gathers

- [Water-Energy Audit](#) vocabulary slides
- Water student text
- Sustainability Action Plan
- Water-Energy Analysis Report
- [Sample Energy Analysis report](#)
 - for educator use and verification
- [Powersville USD Energy and Water Data](#)
- [Answer Key: Powersville USD Energy and Water Data](#)
 - for educator use and verification
- Water Flow Rate Experiment handout (optional)
- Water-Energy Audit Checklist handout
- Spread the Word handout
- Marketing Plan
- Water Flow Rate Experiment handout (optional)
 - a water faucet or drinking fountain to measure water flow
 - empty containers for measuring water
 - such as water bottles, sports drink bottles, or milk jugs
 - stopwatch or clock with a second-hand
- Calculator

Students learned about California's water sources, flow rate, and reading water bills. They also explored ways to use water efficiently, compare usage in various activities, and took action to reduce water consumption at home, school, and in the community.



Energy Audit

Lesson Description

Students will explore energy efficiency concepts and learn to read an electric meter. Students will visit different parts of the school campus to understand how some rooms are more energy-efficient than others, evaluate the different rooms for energy efficiency, and quantify and discuss their findings.

Lesson Objective

Students will familiarize themselves with energy efficiency and its relationship to human activities and comfort. They will utilize an evaluation rubric to assess the built environment, gather data, and communicate it to others. They will also learn about energy-efficient appliances, plan actions to make changes and inform others about how energy impacts their daily lives.

Lesson Topic(s)

- Energy efficiency
- Energy auditing

Suggested Preparation Time

- 10 -15 min
- Solicit permission from colleagues to have students enter their spaces and classrooms

Suggested Teaching Time

- 50 min
- This lesson can be expanded to run over various class periods.
- Audits can be repeated to provide benchmarking data and comparative analysis.

Driving Question

Where do we use energy most, and how can we become more efficient?

Materials

Provided by The Energy Coalition

- light meters
- energy monitors (limited availability, in-person staff support may bring)

Educator Gathers

- Energy Audit vocabulary slides
- Energy Efficiency student text
- Energy Hunt Log
- Energy Audit Checklist
- Light Meter Audit
- Shrink Energy Waste handout (optional)
- Spread the Word handout
- Marketing Plan
- Sustainability Action Plan

Vocabulary

- amperes
- correlated color temperature
- kilowatt
- kilowatt-hour
- lumens
- plug load
- volts
- watt

Students learned about energy efficiency, assessed the built environment using a rubric, and gathered and communicated data. They also explored energy-efficient appliances and planned actions to reduce energy use while educating others on its impact.

Sustainability Action Plan

1. Turning off TVs when not in use for that specific lesson

2. Turn off some or half the lights when not needed

3. Unplug personal items like fridges and coffee makers, especially during break

4. Make sure sinks, water faucets are completely off when not in use

5. installing infrastructure to give more natural light during the day without having to use electricity

6. Have the ability to turn half the lights off in the room

7. Installing the most energy efficient appliances and lights

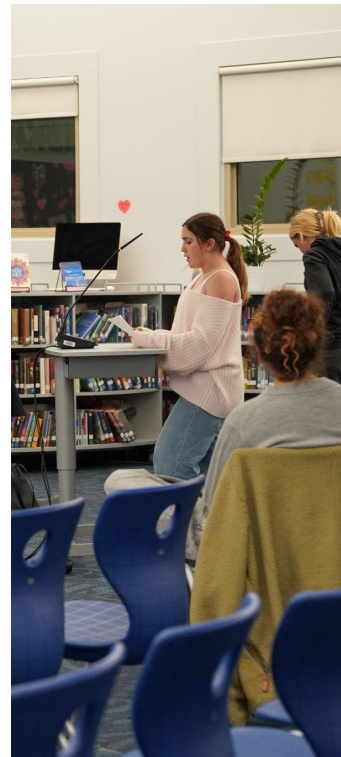
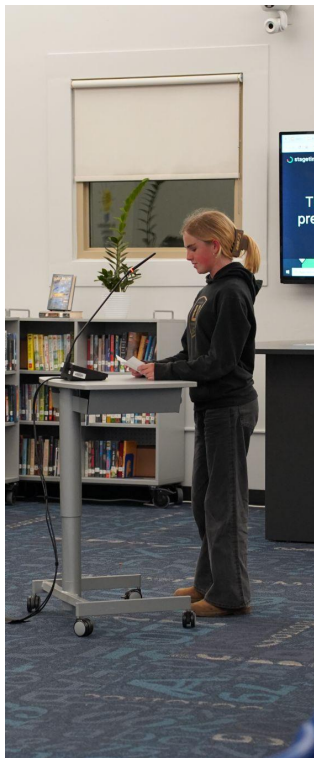
8. Turn HVAC system off when not in use, set systems to reasonable temperature

9. Open windows, if accessible, for airflow and cooling without HVAC, using natural breeze instead of AC

10. Fix leaky faucets

11. Make sure water source is all the way off

Classroom→Actionable Sustainability



District Innovation Hub Webinar Closing, Feedback, and Resources



Appreciation, Reflection, & Commitment



Take a moment to reflect on today's presentation, and the work still to come:

- ★ *What is something you appreciate about this work?*
- ★ *What questions do you still have?*
- ★ *What is your next step?*

Share one of your thoughts in the chat.

District Innovation Webinar Feedback

 aframe@tenstrands.org (not shared) [Switch account](#)



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Name

Your answer

Organization

Your answer

What did you enjoy, appreciate, or learn from today's meeting?

Your answer

Meeting Feedback & Suggestions Link:

<https://forms.gle/X7Y6Ki5iQMFGNKi9A>

Contact:

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Partnerships Programs Specialist

pgoncharova@tenstrands.org



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Breakout Rooms



1. Energy Coalition Programs
2. Energy Is Everything Certification / Junior Energy Managers
3. Laguna Beach Sustainability Plan



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ENERGY is EVERYTHING

Visit our website for more information and share with educators!

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