Sustainability Advisory Council

2023-24

Meeting 3

P-12 Education

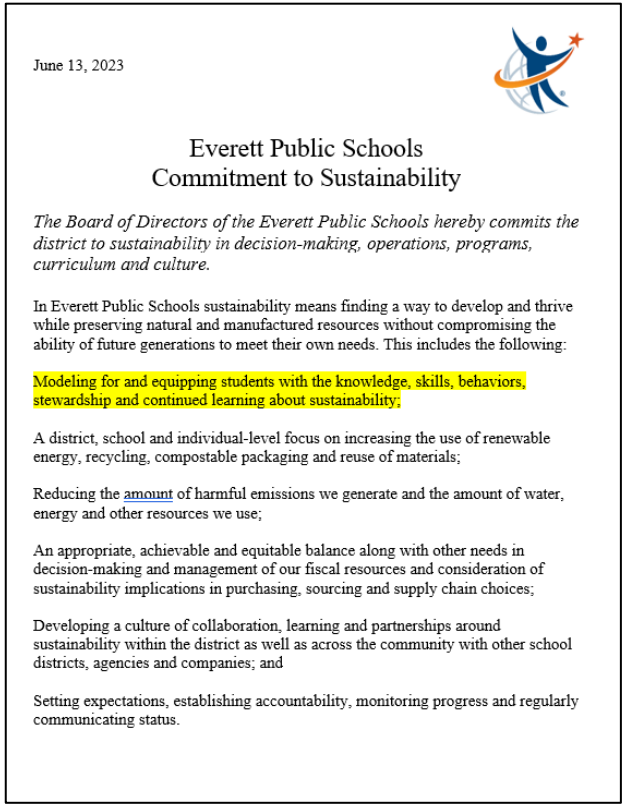
EVERETT PUBLIC SCHOOLS®

COMMITMENT TO SUSTAINABILITY

Welcome to Meeting 3 of the Sustainability Advisory Council!

The Everett Public Schools Commitment to Sustainability

- P-12 education
- Operations
- Decision-making processes
- Partnerships
- Monitor and communicate



June 13, 2023

Everett Public Schools
Commitment to Sustainability

The Board of Directors of the Everett Public Schools hereby commits the district to sustainability in decision-making, operations, programs, curriculum and culture.

In Everett Public Schools sustainability means finding a way to develop and thrive while preserving natural and manufactured resources without compromising the ability of future generations to meet their own needs. This includes the following:

Modeling for and equipping students with the knowledge, skills, behaviors, stewardship and continued learning about sustainability;

A district, school and individual-level focus on increasing the use of renewable energy, recycling, compostable packaging and reuse of materials;

Reducing the amount of harmful emissions we generate and the amount of water, energy and other resources we use;

An appropriate, achievable and equitable balance along with other needs in decision-making and management of our fiscal resources and consideration of sustainability implications in purchasing, sourcing and supply chain choices;

Developing a culture of collaboration, learning and partnerships around sustainability within the district as well as across the community with other school districts, agencies and companies; and

Setting expectations, establishing accountability, monitoring progress and regularly communicating status.

Meetings 2, 3 and 4

- District staff will provide information and slides responsive to topic items/ questions raised in their areas
- This information will be sent to SAC members for review ahead of the next meeting
- About one-half of each meeting will be presentations and Q&A, and the other half will be SAC discussions and deliberations
- SAC will be asked to provide consensus-driven advice or guidance to district staff
- SAC will not provide directions to district staff or make decisions about sustainability issues
- District leaders will consider what actions to take in response to SAC advice and guidance
- Updates on process will be provided to school board in January and May

District staff presenting P-12 Education

Dr. Shelley Boten, Chief Academic Officer
Andrea Cartwright, Director of Science and Engineering

P-12 Education

Modeling for and equipping students with the knowledge, skills, behaviors, stewardship and continued learning about sustainability

Discussion Topics

- Embracing and fostering sustainability in P-12 education system
- Generating more awareness and support for sustainability in our students
- Organization of Green Team clubs in schools

Washington State Learning Standards

K-12 Integrated Environmental and Sustainability Learning Standards

Developed by OSPI in collaboration with educators across Washington

NEXT GENERATION SCIENCE STANDARDS

5-ESS3-1 Earth and Human Activity

Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

Performance Expectation | Grade: 3-5, 5

MS-ESS3-5 Earth and Human Activity

Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.

Performance Expectation | Grade: Middle School (6-8)

HS-ESS3-5 Earth and Human Activity

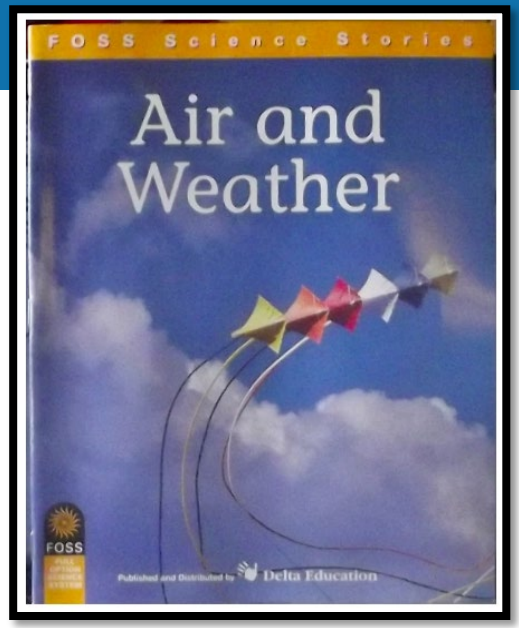
Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.

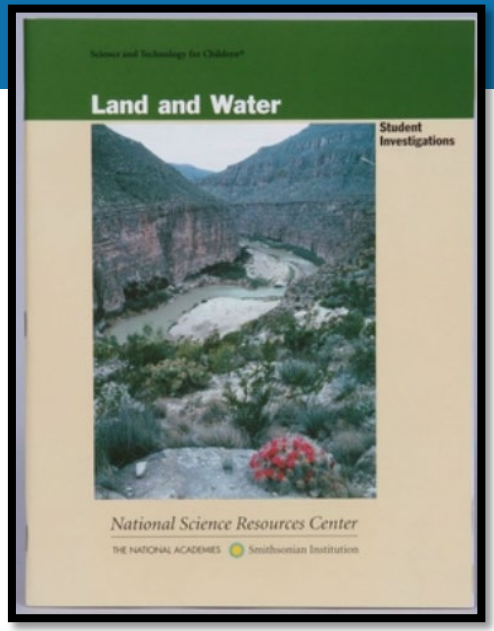
Performance Expectation | Grade: High School (9-12)

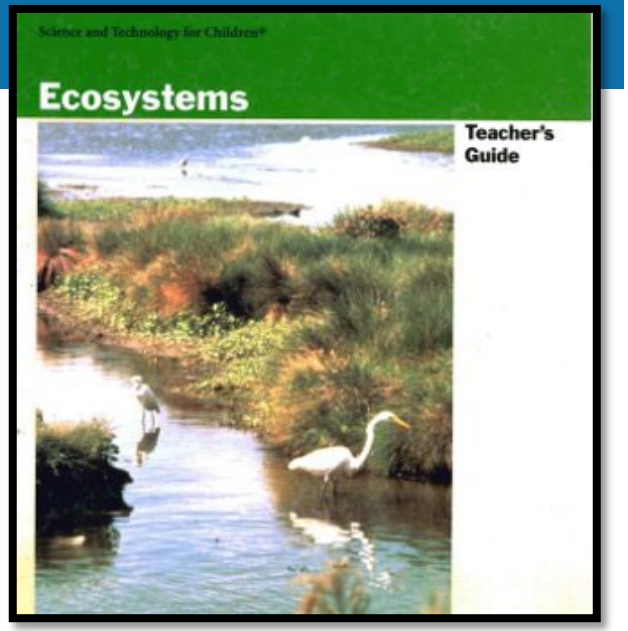
K-12 Science Learning Standards

Next Generation Science Standards

Everett Public Schools Adopted Curriculum
Elementary Science







Everett Public Schools Adopted Curriculum
Middle School Science

6.3 Weather, Climate & Water Cycling

Why does a lot of hail, rain, or snow fall at some times and not others?

6.5 Natural Hazards

Where do natural hazards happen and how do we prepare for them?

7.6 Earth's Resources & Human Impact

How do changes in the Earth's system impact our communities and what can we do about it?

Everett Public Schools Adopted Curriculum
High School Science

Human Impacts on Ecosystems

Life and Earth & Space Science

Climate and Ecosystems

Life and Earth & Space Science

INSTRUCTIONAL SEGMENT 1

Combustion, Heat, and Energy

INVESTIGATION 1 Combustion—Matter, Energy, and Change

INVESTIGATION 2 Energy Transfer and Conservation

INVESTIGATION 3 Earth's Interior

INSTRUCTIONAL SEGMENT 4

The Chemistry of Climate Change

INVESTIGATION 12 Weather and Climate

INVESTIGATION 13 Global Climate Change

INSTRUCTIONAL SEGMENT 5

The Dynamics of Chemical Reactions and Ocean Acidification

INVESTIGATION 14 Reaction Rates and Equilibrium

INVESTIGATION 15 Acid-Base Equilibria

INVESTIGATION 16 Ocean Acidification

Career and Technical Education Pathway

Course Selections

- AP Environmental Science
- Biology & the Environment
- Sustainable Agriculture

State and Industry Certifications

- Agricultural Biology Certification
- Natural Resource Certification
- Plant & Soil Science Certification

Career Opportunities

- Agricultural Manager - $68k average salary
- Wildlife Biologist - $72k average salary
- Environmental Specialist - $54k average salary

AP ENVIRONMENTAL SCIENCE

BIG IDEA 1: ENERGY TRANSFER (ENG)
Energy conversions underlie all ecological processes. Energy cannot be created; it must come from somewhere. As energy flows through systems, at each step, more of it becomes unusable.

BIG IDEA 2: INTERACTIONS BETWEEN EARTH SYSTEMS (ERT)
The Earth is one interconnected system. Natural systems change over time and space. Biogeochemical systems vary in ability to recover from disturbances.

BIG IDEA 3: INTERACTIONS BETWEEN DIFFERENT SPECIES AND THE ENVIRONMENT (EIN)
Humans alter natural systems and have had an impact on the environment for millions of years. Technology and population growth have enabled humans to increase both the rate and scale of their impact on the environment.

BIG IDEA 4: SUSTAINABILITY (STB)
Human survival depends on developing practices that will achieve sustainable systems. A suitable combination of conservation and development is required. The management of resources is essential. Understanding the role of cultural, social, and economic factors is vital to the development of solutions.

CHS APES students' ecocolumns

JHS Community Sustainability Project

By: Noor, Leah, Josh, Liam

Factors of Social Sustainability

Our factors of social sustainability that the proposed solution addresses are **community engagement**, and **environmental education.**

Aspects of Ecological Sustainability

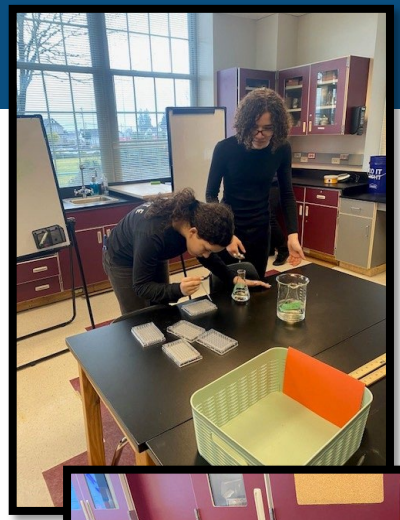
The aspects of ecological sustainability that should be improved by our proposal include **water quality**, **biodiversity**, and **ecosystem services**.

Factors of Economic Sustainability

The factor of economic sustainability that our proposal should address is **careers in environmental science**.

BIOLOGY AND THE ENVIRONMENT

EHS BATE students making closed ecosystems and gathering initial data, using Vernier probes (temperature, pH, dissolved oxygen)



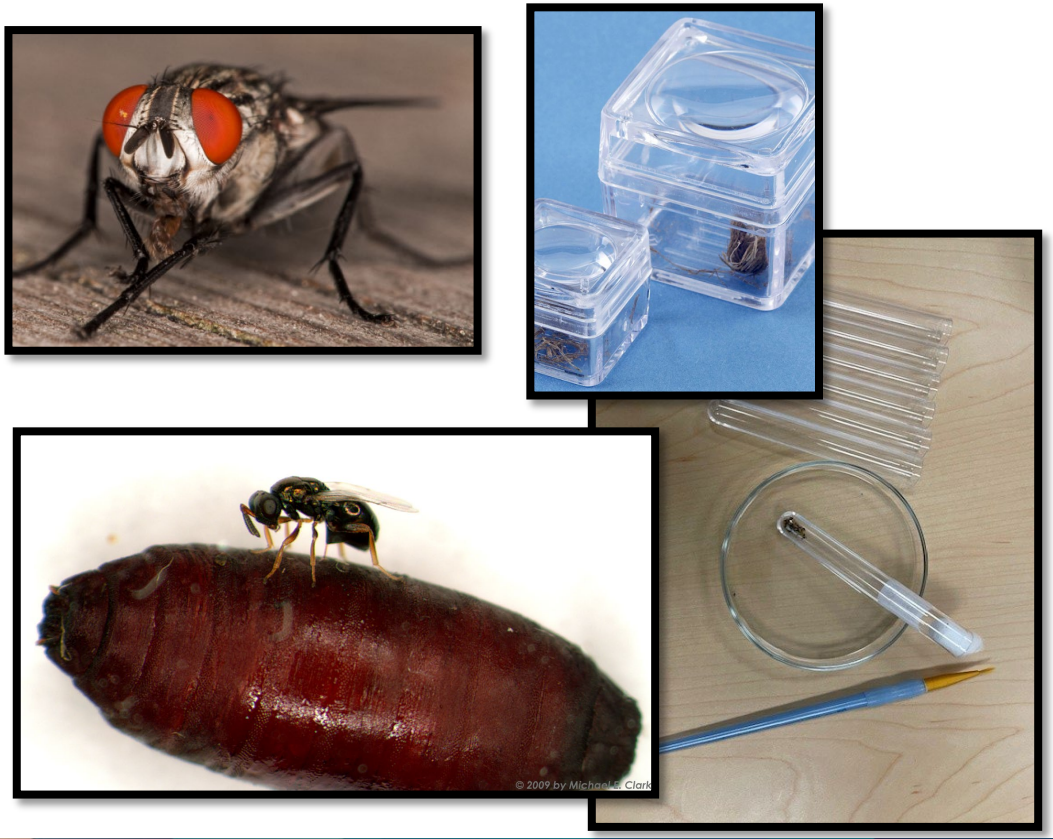
SHS BATE students using phyt oplankton to test potential outcomes of human impact on the ocean ecosystem

BIOLOGY AND THE ENVIRONMENT

What a pest!

You and your team are geneticists that have been hired by the Department of Agriculture to learn more about the inheritance patterns of the *Nasonia* wasp and its impact on the pest insect, *Sacrophaga* fly.

Sarcophaga flies harass livestock on farms and spread disease. *Nasonia* wasps are used as a biological control for *Sarcophaga* in areas where animals are being raised on farms, ranches, and feedlots.



SUSTAINABLE AGRICULTURE

Sustainable Agriculture introduces students to a range of agricultural systems and careers while learning about the importance of soil, water and plant and animal nutrients. **Students will contemplate the ever-changing needs of the human population and how agriculture affects the Earth's climate. Students will learn plant structure and function, livestock anatomy and physiology, and 21st century solutions to feeding the world sustainably.**

Chemistry, biology, physics, and earth science are incorporated and applied; and woven throughout the course are activities to develop and improve employability skills of students through practical applications. Students explore career and post-secondary opportunities in each area of the course.

Students will learn to solve problems, conduct research, analyze data, work in teams, and take responsibility for their work, actions, and learning. Students investigate, experiment, and learn about documenting a project, solving problems, and communicating their solutions to their peers and members of the professional community.

SUSTAINABLE AGRICULTURE

Sustainable Agriculture Practices

Protect Environment	Expand Natural Resources	Improve Soil Fertility	Increase Farm Profit	Increase Production

Soil and Water Conservation

Integrated Pest Management

Nutrient Conservation

AGRICULTURE EDUCATION & SCIENCE CTSO

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FFA Vision

- *Growing the next generation of leaders who will change the world.*

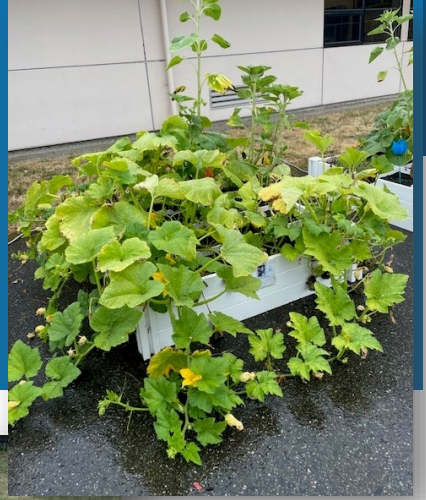
FFA Mission

- *FAA makes a positive different in the lives of students by developing their potential for premier leadership, personal growth and career success through agricultural education.*

The **Agronomy Career Development Event (CDE)** challenges students to build and demonstrate knowledge in the wide field of agronomy. Participation grants students exposure to many ways that science and technology collaborate to grow the world's major food crops.

Teams of four students in this event evaluate a agronomic scenario and develop a crop management plan that includes crop selection, production, problem-solving and marketing. Individually, the team members also complete an agronomic knowledge exam, identify and analyze plant and soil types, evaluate commodity quality, demonstrate pest management and equipment knowledge, and discuss an agronomic issue important to crop production.

Elementary Green Activities



Play and Learn at Lively

Madison Elementary School Gardens

Secondary Green Activities

SHS's Sustainable Agriculture Club competing in Envirothon

AP Enviro Science students at Mt. Rainier Institute

Expansion Green Team Activities

Discussion Topics

- Embracing and fostering sustainability in P-12 education system
- Generating more awareness and support for sustainability in our students
- Organization of Green Team clubs in schools

Next steps

- Encourage schools to do green teams
- Support with resources for assessment/actions
- Budget for stipends and materials

P-12 Education

- Small group discussions to surface key ideas
- Large group share out and discussion
- Filtering ideas and feedback
- Consensus driven guidance and advice to department administrators

THANK YOU!