NWESD Coordinator Updates - Science

SCIENCE

CLIME TIME

CLIMATE SCIENCE LEARNING

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Focusing On Climate Science in 2018-2019

"We're the first generation to feel the impact of climate change and the last generation that can do something about it." - Governer Jay Inslee

The 2018 Washington State Legislature heard Governor Jay Inslee when he said, "We're the first generation to feel the impact of climate change and the last generation that can do something about it." Part of "that something" is $4,000,000 of the general fund to be spent between July 1, 2018 and June 30, 2019, by ESDs and community-based organizations to train teachers of science in the 2013 Washington State Science Learning Standards (WSSLS) also known as Next Generation Science Standards (NGSS) which include standards around climate science.

Locally at Northwest Educational Service District, we will approach climate science for our educators in a multi-faceted approach. Our project will be implemented statewide as a collaborative effort by the Association of Educational Service Districts (AESD) to improve systems of support around climate science education for schools identified for targeted and comprehensive supports. We will localize our work in conjunction with our regional community based organizations that are already providing climate science curricula in a field-centered, experiential manner. The climate science project will enhance the work of NWESD 189 science educators, building climate science into our work with Science Fellows, the Science Leadership Network, the Collaboration for Ambitious Science Teaching and Learning (CASTL), and the NWESD Science Materials Center Cooperative. We also plan to work with our local tribes to expand on existing Tribal work by helping teachers understand indigenous ways of knowing and engaging in science as well as to work with teachers to develop some P-K climate science activity stations for young learners.

The NWESD climate science learning opportunities provide access to teachers across multiple grade levels and have been designed to intentionally address underserved populations in a number of ways. The universal outcomes of this project are to:

- Increase teacher understanding of climate science in the context of the WSSLS.
- Improve ability of teachers to deliver three-dimensional instruction as defined by the WSSLS, focused on science and engineering practices as they support the core ideas of climate science.

For more information contact:

Joanne Johnson: jjohnson@nwesd.org or
Brian MacNevin: bmacnevin@nwesd.org

NWESD Climate Science Education Projects

**Professional Development - Grade Level
1. Indigenous Ways of Knowing Climate Science in the NWESD Region
2. Field Experiences in Climate Science
3. STEM Speakers Lecture Series
4. OpenSciEd Piloting
5. CASTL
6. NGSS 101B: Engineering for Climate Science in Elementary Classrooms with Migrant Students
7. Piloting K and 3rd Grade Amplify Kits
8. Climate Science for K and Pre-K

K-5 Middle School High School

**The funding provides learning opportunities for all grade levels. The key (above) paired with the descriptions on page 11 will help you to find appropriate climate science learning opportunities for your grade level.

The NWESD is eager to partner with the following community-based organizations who were also awarded climate science education grants:

- Snohomish Conservation District
- Padilla Bay National Estuarine Research Reserve
- Whatcom County Collaborative Project:
  - Wild Whatcom
  - Garden of the Salish Sea Curriculum
  - Common Threads
  - Nooksack Salmon Enhancement Association
  - North Cascades Institute
  - RE Sources for Sustainable Communities

nwesd.org | (360) 299-4000

NWESD Climate Science Education Project Summary

1. Indigenous Ways of Knowing Climate Science in the NWESD Region

Including staff and STEM teaching tools from the UW Institute for Science and Math Education and our community-based partners, we will work with NWESD school districts with high percentages of Native American students and migrant students around indigenous ways of learning climate science. Our essential question is, how can we change our instruction in climate science to include indigenous ways of knowing? Teachers will come together to learn, try out their learning with their students and come back together in critical friends groups to understand and share their learnings.

2. Field Experiences in Climate Science

The NWESD is uniquely situated to take advantage of the locale and expertise of our neighboring community-based science education organizations including Nooksack Salmon Enhancement Association, North Cascades Institute, Padilla Bay National Estuarine Research Reserve, the Snohomish Conservation District, and the Whatcom County Collaborative Project. Partnering with NWESD will allow climate science to be part of field study curricula moving forward. These efforts will focus on preparing teachers with climate science instruction for their students' pre and post field experience and allow teachers to get into the field to share the same experiences as their students.

3. STEM Speaker Lecture Series

This project makes climate science learning flexibly available to high school teachers -- most of whom in Washington State are not climate science specialists. NWESD will facilitate a three-part speaker series, facilitating climate scientists sharing cutting-edge research in both the north and south end of our region. Each lecture will be offered as a single event so that teachers can avail themselves of specific speakers and/or topics. As the speaker concludes, NWESD will provide facilitated discussions with the climate scientist and high school teachers to highlight connections to standards and solidify the understanding of the concept. Look for registration information an coming soon.

4. OpenSciEd Piloting

Eight teachers in our region will pilot the OpenSciEd Grades 6-8 Open Education Resources (OER) materials developed with support from the Carnegie Institute. Eventually encompassing a K-12 suite of OER instructional materials aligned vision of the Next Generation Science Standards and evaluated for effectiveness, we anticipate this resource and the teachers trained in its use will be an invaluable support to our region.

6. NGSS 101B: Engineering for Climate Science with Migrant Students

This learning opportunity is targeted for teachers who teach migrant students. This course is similar to NWESD NGSS 101; however, it will provide a deliberate focus on climate science disciplinary core ideas (DCIs), engineering and specific connections to best practice for migrant students. This one-day course will be offered five times throughout the 2018-19 school year. Please visit www.nwesd.org to register or contact Nancy Menard: nmenard@nwesd.org.

project expands the work of the Partnership Science Teacher Leaders (PASTL) and Partnership (MSP) into new schools science. Facilitated by PASTL alumni and PASTL faculty, new teachers engage three-dimensional learning around a climate ion. Our focus will incorporate climate NGSS Performance Expectation's into r. A summer institute (August 2018) teacher cadres into the work, and they will join with PASTL alumni ning days.

7. Piloting K and 3rd Grade Amplify Kits

Focusing on schools identified for target and comprehensive support, the NWESD Science Materials Center (SMC) Cooperative will recruit K and 3rd grade teachers from these schools to pilot climate science kits from Amplify Science. SMC school districts have nominated teachers who will receive profesional development in the fall of 2018.

for Pre-K and K

ng Department will work with Pre-K and kindergarten h NGSS Kindergarten Standards and ha practices that support co the teac

ClimeTime

Statewide: $4 million

- $1 million
  for CBO's
- $2 million
  for ESD K-5 work
- $1 million
  For ESDs 6-8 work

NWESD's plan funds:

- Some materials
- PD
- Teacher sub release
- Teacher stipends
- Some contractors

1. Indigenous Ways of Knowing Climate Science in the NWESD Region

Including staff and STEM teaching tools from the UW Institute for Science and Math Education and our community based partners, we will work with NWESD school districts with high percentages of Native American students and migrant students around indigenous ways of learning climate science. Our essential question is, how can we change our instruction in climate science to include indigenous ways of knowing? Teachers will come together to learn, try out their learning with their students and come back together in critical friends groups to understand and share their learnings.

AUDIENCE:

K-5 TEACHERS

DATES:

TBD

2. Field Experiences in Climate Science

The NWESD is uniquely situated to take advantage of the locale and expertise of our neighboring community-based science education organizations including Nooksack Salmon Enhancement Association, North Cascades Institute, Padilla Bay National Estuarine Research Reserve, the Snohomish Conservation District. and the Whatcom County Collaborative Project. Partnering with NWESD will allow climate science to be part of field study curricula moving forward. These efforts will focus on preparing teachers with climate science instruction for their students' pre and post field experience and allow teachers to get into the field to share the same experiences as their students.

AUDIENCE:

K-5, 6-8 TEACHERS

DATES:

TB Announced

3. STEM Speaker Lecture Series 

This project makes climate science learning flexibly available to high school teachers -- most of whom in Washington State are not climate science specialists. NWESD will facilitate a three-part speaker series, facilitating climate scientists sharing cutting-edge research in both the north and south end of our region. Each lecture will be offered as a single event so that teachers can avail themselves of specific speakers and/or topics. As the speaker concludes, NWESD will provide facilitated discussions with the climate scientist and the high school teachers to highlight connections to content standards and solidify the understanding of the climate concept. Look for registration information on our website coming soon.

LIKELY CHANGING TO A DAY LONG

AUDIENCE:

9-12 TEACHERS

DATES:

TBA

4. OpenSciEd Piloting

Eight teachers in our region will pilot the OpenSciEd Grades 6-8 Open Education Resources (OER) materials developed with support from the Carnegie Institute. Eventually encompassing a K-12 suite of OER instructional materials aligned vision of the Next Generation Science Standards and evaluated for effectiveness, we anticipate this resource and the teachers trained in its use will be an invaluable support to our region.

AUDIENCE:

8 TEACHERS

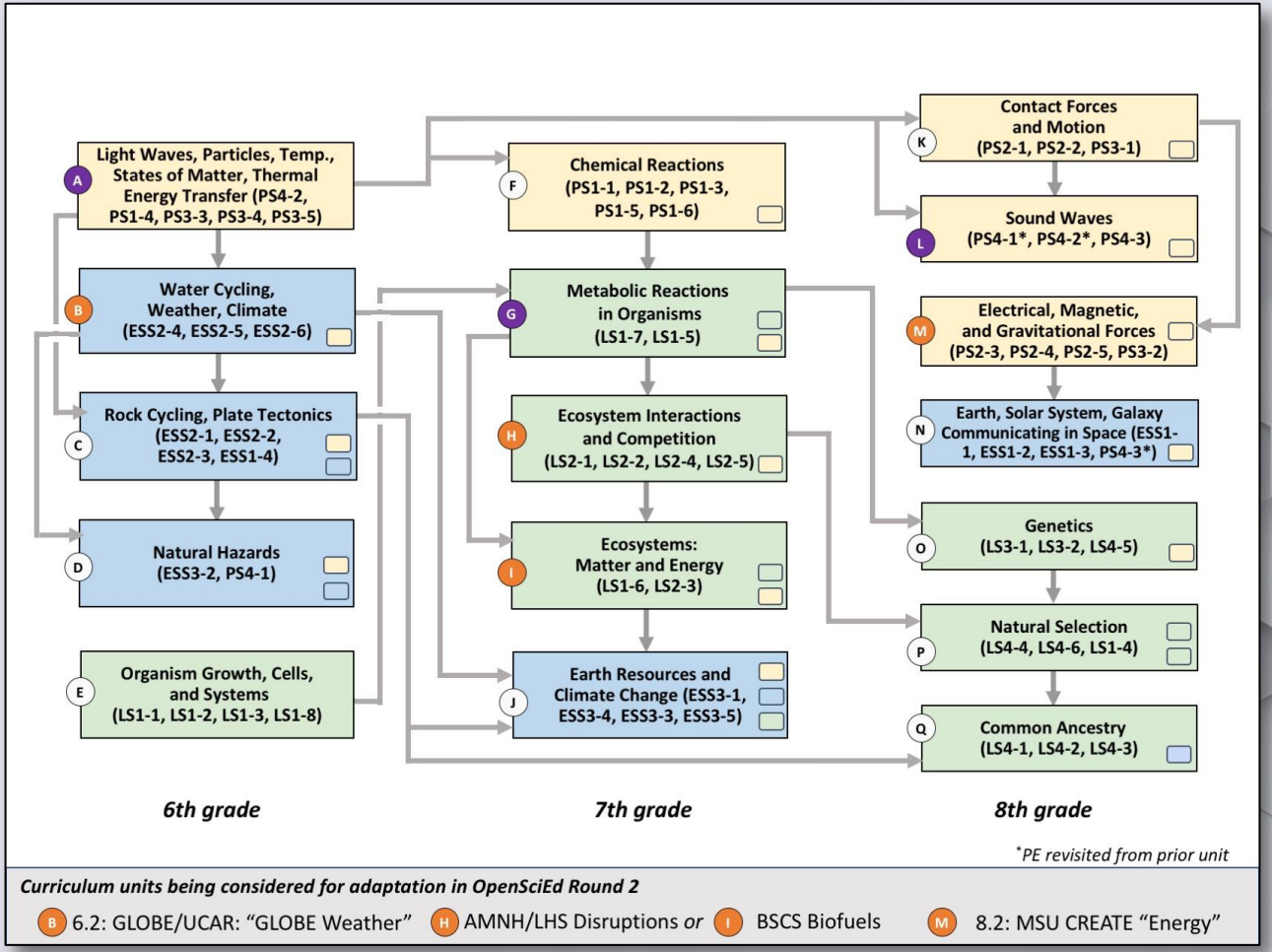
Sedro-Woolley (5),

Concrete (1), Darrington (1),

Monroe (1)

DATES:

2 units this year



Curriculum units being considered for adaptation in OpenSciEd Round 2

B 6.2: GLOBE/UCAR: "GLOBE Weather" H AMNH/LHS Disruptions *or* I BSCS Biofuels M 8.2: MSU CREATE "Energy"

5. CASTL

The CASTL project expands the work of the Partnership for Ambitious Science Teacher Leaders (PASTL) and Math Science Partnership (MSP) into new schools and into climate science. Facilitated by PASTL alumni teacher leaders and PASTL faculty, new teachers engage as learners in three-dimensional learning around a climate science phenomenon. Our focus will incorporate climate science and related NGSS Performance Expectation's into the work for the year. A summer institute (August 2018) will induct two new teacher cadres into the work, and during the school year they will join with PASTL alumni in three reflective planning days.

AUDIENCE:

K-12 TEACHERS, already selected

DATES:

Started in August

OCT 02, JAN 18, MAR 13

6. NGSS 101B: Engineering for Climate Science with Migrant Students

This learning opportunity is targeted for teachers who teach migrant students. This course is similar to NWESD NGSS 101; however, it will provide a deliberate focus on climate science disciplinary core ideas (DCIs), engineering and specific connections to best practice for migrant students. This one-day course will be offered five times throughout the 2018-19 school year. Please visit www.nwesd.org to register or contact **Nancy Menard: nmenard@nwesd.org.**

AUDIENCE:

K-5
MIGRANT STUDENT
TEACHERS

DATES:

OCT 25, NOV 06, JAN 29,
MAR 14, MAY 02

7. Piloting K and 3rd Grade Amplify Kits

Focusing on schools identified for target and comprehensive support, the NWESD Science Materials Center (SMC) Cooperative will recruit K and 3rd grade teachers from these schools to pilot climate science kits from Amplify Science. SMC school districts have nominated teachers who will receive professional development in the fall of 2018.

AUDIENCE:

K & 3 SMC TEACHERS

DATES:

PD Oct 11, 2018

Kits in classrooms

FALL/WINTER 2018/19

8. Climate Science for Pre-K and K

The NWESD Early Learning Department will work with Pre-K and kindergarten teachers to design learning opportunities that align with NGSS Kindergarten Standards and help Pre-K and K students develop content knowledge and science and engineering practices that support core climate science ideas through play. Teachers will be recruited to serve on the design team. The teachers will pilot these modules in their classrooms and then reconvene to make adjustments to the modules. Professional learning opportunities will be offered in the spring of 2019. Kindergarten teachers interested in serving on the design team please contact **Sarah Southard: ssouthard@nwesd.org.**

AUDIENCE:

K-2 TEACHERS

P-K TEACHERS

STATUS:

RECRUITING K-2 DEVELOPERS

How can we keep informed?

1. Announcements through T&L and Fellows

2. New web page will be updated with dates and offerings

NGSS Orientation

NGSS 101

NGSS 102

Introducing Coursemapping / Bundling

Elements of Ambitious Science Teaching as helpful

NW LASER Alliance

What is LASER ?

WA STATE LASER initiative - mapping state science assets

What is the NW LASER Alliance?

CALL to ACTION

Advisory Group forming

ASSESSMENT WORLD

WCAS Graduation Requirement

Class of 2021

(this year's sophomores)

Achievement Level Descriptors (ALD's)

ALD SLIDES

https://goo.gl/ietwGB

STEM Re-Certification

STEM CLOCK HOURS

15 STEM CLOCK HOURS

Or

1 GOAL IN A PGP

Or

NATIONAL BOARD CERT

One more thing...

Computer Science Network

Dates

October 9, 2018
January 8, 2019
March 12, 2019
May 21, 2019

Time/Location

October 9 and May 21:
1:00—3:30 pm

January 8 and March 12:
8:30 am—3:30 pm

NWESD, Anacortes

Registration

Register at NWESD.org
Event #82917

Questions? Contact Info

Nancy Menard
nmenard@nwesd.org
360-299-4020

Northwest Educational Service District 189
Together We Can

Description:

Participate in a professional learning community as a leader in computer science education. Your expertise can range from computer science teacher or expert to someone wanting to learn more about computer science and how it supports all K-12 content. Current practices, programs and needs will be discussed while we deepen our knowledge of computational thinking and build resources to support one another.

Participants can come to one, some or all of the meetings, but must be present for a minimum of three hours to receive clock hours. Seventeen STEM clock hours available.

Who Should Come:

Anyone with an interest in computer science and computational thinking. Teachers, TOSAs, principals, club advisors, etc . . .

Outcomes:

- Collaborate with colleagues about your districts' computer science program.
- Understand and build upon the Washington State vision for Computer Science education.
- Participate in shared learning about *Computational Thinking* in the K-12 classroom.