



Siuslaw Watershed Council's Annotated Guide: Educational Resources for Nature/Science-Focused Distance Learning

Ready to Use:

1) Nature Vision

<https://naturevision.org/student-packets>

- 7 remote learning student packets topics; 4 grade pods (K-2, 3-5, 6-8, 9-12); each packet includes Teacher Overview, Parent/caregiver Overview, fact & activity pages, main activity, and optional activit(ies); most have links to short videos and to additional resources, especially for older grades.
- Topics for each grade pod include Ecosystem, Watershed, Humans & Water, Ecosystem Impacts, Water Quality, Human Systems, Invasive Plants (these last four are the newest and you click on "here" above the slides to access them --- each grade pod advances prior knowledge with new grade appropriate content and activities
- *** Ecosystems 3-5 is an instant favorite among the ones I investigated ... covers salmon, amphibians, plants, etc. plus has short video links. Invasive plants 6-8 is also impressive.
- An adaptive activity, for example, is to have your students use the WA watershed/water flow maps as examples to create something similar for their home watershed; SWC website has these maps (Siuslaw.org.) Further adaptations to WA specifics can be instructive or simply omitted.

* I highly recommend this ready to go science-based, place-based creative curriculum --- a gold mine full of treasure chests!

* Annotations thoughtfully gathered by Jim Grano, former Mapleton and Siuslaw Schools teacher and member of the Siuslaw Watershed Council Board of Directors.

2) Nuhop K-6 “At Home” Outdoor Science Education

<https://nuhop.org/online-home-outdoor-education>

“We hope that your distance learning is going well and you have begun to adjust to your new normal. We at Nuhop understand the pressure you are under as K–12 educators. We want to support you and help you to create meaningful curriculum for your students.

The Nuhop Team will be adding classes to the **Online “At Home” Outdoor Education Modules** and look forward to sharing these on a rolling basis.

Stay tuned and check back often. All of us are going to be at this at home thing a bit longer than expected and we all need to go outside during this unprecedented time.

This curriculum will do just that, give teachers and students a framework to take part in online learning that is connected to outdoor and kinesthetic engagement. Enjoy! Our team is having so much fun creating this for you! Feel free to share this ever changing resource with anyone you feel could benefit from this content. It is open source and available to all!”

* A highly-praised source of ready-to-use science activities; praised by educators throughout Canada and US!

3) Ecology in the Classroom and Outdoors

<https://www.ecologyoutdoors.org/>

“ecology in classrooms and outdoors (eco) inspires students to care for nature and their local communities through hands-on science education.”

5 ready to use at-home ECO lessons are available now, with videos planned to be released soon.

* ECO is a partner with SWC, and will assist with field trips and classroom instruction when these can resume safely.

* Annotations thoughtfully gathered by Jim Grano, former Mapleton and Siuslaw Schools teacher and member of the Siuslaw Watershed Council Board of Directors.

4) Gould Lake Outdoor Centre

https://gouldlake.limestone.on.ca/teachers/outdoor_education_at_home___lesson_plans_

"The Gould Lake Outdoor Centre staff have created some fun and easy Outdoor Education activities that you can do at home. Click on the links for a PDF copy of each lesson."

* I looked at two of the many lessons, and was impressed !

5) Wildsight

https://wildsight.ca/programs/education-at-home/Environmental_Education_Resources

"Teachers, we know you're all superheroes! In light of an education model turned upside down, you came up with plans, scheduled classes and taught students with grace and gusto through a time of great uncertainty.

We want to help you navigate a new school year with solid resources to help bring your students into nature. Research shows that students fare better mentally, physically and emotionally when they're outside, and outdoor learning is proving a safer option these days too. We have dozens of lesson plans, videos, art ideas and more to help you get your students learning from, and in, the great outdoors. Like the great Dr. Seuss said, "It's opener there, in the wide open air."

* About 50 different lessons, identified by topic and grade level(s) --
- standalone or enhanced by you. Enthusiastic guides from NW Canada, with charming accents!

6) Turtle Trash Collectors; Marine Quest: Youth Programs

<https://uncw.edu/marinequest/2tc.html>

"Turtle Trash Collectors is a UNCW MarineQuest outreach program funded by the NOAA Marine Debris Program. It is our goal to educate youth about the impacts of marine debris and encourage behavior changes that will reduce the generation of marine debris in the future".

T2C has scheduled public programs via Zoom; presentations to classrooms may be scheduled. Students can become turtle trash collectors and earn badges by

* Annotations thoughtfully gathered by Jim Grano, former Mapleton and Siuslaw Schools teacher and member of the Siuslaw Watershed Council Board of Directors.

taking helpful actions at home and locally via the Citizen Science Project. Posters are available. The Zoom presentation is engaging, informative, interactive, and inspiring for all ages, but particularly elementary (3-6 I think, but teachers --- watch the public program and decide for yourselves)

* This is a wonderful, ongoing at-home science experience!

7) Investigating Crayfish + Freshwater Ecosystems

<https://therivermile.org/>

The River Mile is a network of educators and students collaborating with partners to do real-world science and enhance the health of the Columbia River Watershed, exploring the essential question: "How do relationships among components of an ecosystem affect watershed health?"

Trainings are offered, the excellent, adaptable, grades 2-12 curriculum is downloadable free (or with a ring-bound book) as are classroom posters and possible funding. Portland resident Rick Reynolds wrote the curriculum and presents the training; he is the contact for funding and questions after you visit the TRM website ... (Rick is at engagingeverystudent.com)

I took the two day, 6hr total training and I'd be happy to assist with its implementation into your at-home lessons, and later in the field. This is an opportunity for hands-on, real world science with ecological value, particularly for invasive species detection. * I recommend getting the curriculum and checking it out ... seeking help from Rick or me to begin a project.

8) Beetles Project

<http://beetlesproject.org/all-student-activities/>

35 fully designed outdoor lessons from this prestigious educational organization. Each lesson has a complete teacher's guide. You will have to investigate the lessons and determine appropriate grade and modifications to at-home learning.

* When we return to field trips, SWC will assist in preparation, locating sites, gathering natural resource partners as needed. Beetles materials are high quality!

* Annotations thoughtfully gathered by Jim Grano, former Mapleton and Siuslaw Schools teacher and member of the Siuslaw Watershed Council Board of Directors.

9) Southern Oregon Regional Environmental Education Leaders (SOREEL)

<https://www.facebook.com/Southern-Oregon-Regional-Environmental-Education-Leaders-SOREEL-274741919262040/videos>

15 short videos, OutsideEveryDay posts, that inform and easily lead to at-home explorations. For example, the 90 second “Lichens” introduces lichens, shows 3 different kinds on the same tree, describes the symbiotic relationship without using the term, and suggests ways to discover and record the three types outside nearby or in a forest ... could lead to a discussion of the “canary in the coal mine” aspect of lichen & air quality and continue on to the Beetles lichen lesson.

* A video can be a standalone lesson or are easy to extend for additional learning --- these are student-friendly presentations.

10) Nature Sparks

<https://www.youtube.com/channel/UCNXfoFG2nb09ICW4o3YBC-Q>

10 short videos via YouTube. Like OutsideEveryDay, each of these is short, engaging, and a standalone lesson or extendable. Topics include native plants and animals.

11) Camp Tamarack

<https://www.camptamarack.com/outdoor-school-at-home>

20 ready to use outdoor science activities especially designed for distance learning: topics include decomposition, sensory bingo, backyard field guide, and more. One or more pages of information & fun tasks to do outdoors, mostly nature journaling

* Annotations thoughtfully gathered by Jim Grano, former Mapleton and Siuslaw Schools teacher and member of the Siuslaw Watershed Council Board of Directors.

12) Whole Earth Nature School

<https://www.wholeearth.org/cos/covid19/>

“At Home in the Outdoors” provides an Outdoor School-like experience to students during the pandemic. This program was specifically created for fifth and sixth grade students whose Coyote Outdoor School programs were canceled due to COVID-19. However, we are publicizing the program for everyone, and you will find many activities for all ages to enjoy.

During our “At Home in the Outdoors” program, you can experience every aspect of Coyote Outdoor School, including field studies, interest groups, campfire, and more. Each daily schedule for this 5-day program can take 3-5 hours a day if you do them all. You can also choose to participate in 1-2 activities a day and spread the activities out over several weeks. When possible, we encourage family members to join in on the fun!

We invite you to get creative about how you connect with nature during “At Home in the Outdoors.” Whether we are in a yard, a local park, a grassy area outside an apartment, or even a window with a view of trees: Nature can be anywhere.

* Sequential lessons with videos ... virtual outdoor school!

13) Outdoor School at Home

<http://www.nwoutdoorschool.org/distance-learning.html>

132 diverse topics, most supported by videos or slideshows: multiple lessons on animals, art, connecting with nature, conservation, observation & data collection, ecology, first aid, plants, soil, water, space, weather, and scientists.

* The ones I've looked at are informative and infused with fun & humor.

Here is an index of all offerings ... so simple, just click twice --- once on the one you want, then on the photo:

https://docs.google.com/spreadsheets/d/1A2RQ5uLK_iiSWfKk5GM44Q7afWlyt8AfTHjiQ6YrQfk/edit#gid=1143483608

This is a fabulously diverse collection of ready to go lessons. Reading ability is definitely required by the student or assisted by a parent/caregiver

* Annotations thoughtfully gathered by Jim Grano, former Mapleton and Siuslaw Schools teacher and member of the Siuslaw Watershed Council Board of Directors.

Resources to Aid Lesson Development:

A) Siuslaw Watershed Council

<https://www.siuslaw.org/why-we-restore/>

8 short videos featuring dedicated folks working to restore the watershed, with focus on the Five Mile Bell project.

“Story of the Siuslaw”, a story map with infinite interdisciplinary applications. Each of these could be presented by SWC staff or BOD to classes via Zoom, and eventually in your classroom.

Check them all out --- you'll enjoy while learning; then make lesson plans (we'll help!)

B) NOAA Planet Stewards Education Projects & Resources

https://oceanservice.noaa.gov/education/planet-stewards/welcome.html?utm_medium=email&utm_source=GovDelivery#ourresources

15 awesome resources to explore, topics include fisheries, estuaries, coral reefs, marine debris, and more, plus games. Same page has past projects via the Stewardship Community.

Also, there is a tremendous collection of videos at: [videos.fisheries.noaa.gov](https://www.videos.fisheries.noaa.gov/) or [YouTube.com/NOAA fisheries](https://www.youtube.com/NOAAfisheries)

*** "A Mako shark's last meal" is the most popular --- watch it and figure out a way to use it for your class!

*** 80% watch a whole video; 20% read an entire article; 74% is the increase of understanding via video.

<https://nmfs-ecosystem-tools.github.io/VES-V>

Virtual Ecosystem Scenario Viewer is a newly developed animated model of scenarios that depict how various species in the ocean column are predicted to survive (or not), depending on variables like fishing, climate change, acidification,

* Annotations thoughtfully gathered by Jim Grano, former Mapleton and Siuslaw Schools teacher and member of the Siuslaw Watershed Council Board of Directors.

oil spills. It's engaging, and one of the developers said his 4th grade daughter enjoys "playing" it. A companion slideshow explains how to use it.

www.openchannels.org/webinars

Hoping for accompanying curriculum soon ... contact Howard Townsend.

Howard.Townsend@noaa.gov

C) Oregon Dunes Restoration Collaborative

<https://www.saveoregondunes.org/>

A seven-minute video features history, geology, cultural legacy, plants and animals, current plight, restoration plan, and call to action

ODRC can present the video via Zoom to your classes, and in person when safe. Field trips have been happening since 2011 to several sites; a new grant was secured --- but the virus came.

Other materials are available: books, posters, brochures, newsletters, power point presentations

D) Pacific Education Institute

<https://pacificeducationinstitute.org/work/fieldstem-resources/#fieldstem-guides>

Over 25 detailed teaching guides for a variety of lessons and projects K-8 ... connected to NGSS and WA science standards

E) Freshwaters Illustrated

<https://www.freshwatersillustrated.org/>

Exquisite photography on 5 themes (biodiversity, ecosystems, cultures, impacts, science) and storytelling on 15 videos.

200 photos & some videos are free to the public, but with the purchase of a \$25 license by your District, you have access to everything, particularly NGSS-oriented lesson plans to accompany selected videos.

** Annotations thoughtfully gathered by Jim Grano, former Mapleton and Siuslaw Schools teacher and member of the Siuslaw Watershed Council Board of Directors.*

F) Monterey Bay Aquarium

<https://www.montereybayaquarium.org/for-educators/learning-at-home/online-courses?filterBy=>

“Discover online courses for students grades PreK through 12. These courses teach scientific concepts while encouraging a sense of wonder and connection to the natural world”.

A number of science lessons on a variety of topics ... I watched “Explore Like a Scientist” for grades 3-6 ; the student must be able to read or have assistance, the programs are self-paced and supported by videos.

Other courses include Tidepools, K-2; Birds, 3-5; Teen Stewardship, 6-12; Extreme Ocean, 7-12

Seems like these courses would be a wonderful independent learning experience, with teacher one-on-one guidance & feedback as needed, and an occasional Zoom meeting with Break Outs for classmate-sharing

G) Green Teacher

greenteacher.com

"Great kid-tested ideas for fostering learning and inspiring action on environmental and other global issues! Written by and for educators"

Magazine, videos, webinars. Archived webinar: Nature-based biology activities from a Distance with Cathy Law has 17 activities, at least 14 NGSS, adaptable for grades 1-12, a terrific resource ... subscribe to their magazine and check out the website

H) NW Outdoor Science School

<https://oregonstate.app.box.com/s/gs1z82w93soqfk0f7s97ik4l9svpn7tj>

4 topics: animals (9), soil (5), water (16 --w/ excellent salmon life cycle game), plants (9) --- (# of multiple lesson plans for each)

39 skillfully written activity guides via Oregon State !

* Annotations thoughtfully gathered by Jim Grano, former Mapleton and Siuslaw Schools teacher and member of the Siuslaw Watershed Council Board of Directors.

Other Valuable Resources

STEM Teaching Tools

<http://stemteachingtools.org/tools>

“These very short pieces’ highlight ways of working on specific issues that come up during STEM teaching. If you would like to browse or download the entire collection of tools as eye-catching PDFs:” check out: <http://stemteachingtools.org/link/PDFcollection/>

67 topics with links to related resources. Some I’ve explored include #20 Getting Their Hands Dirty; #6 Productive Talking; #31 Student-directed Inquiry; #28 Anchoring Phenomenon; #57 Place-based Science Learning

International Society for Technology in Education (ISTE)

<https://dev.iste.org/standards>

“Transforming education requires us to rethink how we teach and learn. The ISTE Standards act as a roadmap for bold, innovative educators and education leaders to re-engineer their schools and classrooms for digital age learning no matter where they fall on the journey to meaningful, effective ed tech integration.”

Both “Standards for Educators” (7), and “Standards for Students” (7), should be investigated.

<https://www.iste.org/standards/for-students>

Using this site, you have additional access to short, topic-based videos; I recommend viewing 7d “global collaborator”.

Ecology in the Classroom and Outdoors (ECO)

Tips for Engaging Children in Outdoor Exploration

- Model behavior to engage your children. For example: get down on your hands and knees to look closely at a flower, etc. Invite them to follow your lead!
- Voice your enthusiasm, curiosity and observations.
- Address children as 'scientists' or 'ecologists' to build their science identity.
- Encourage children to use their five senses, with the exception of taste.

*** Jim's add-on: they love to taste what you know is safe ---
Salmon & huckle berries, oxalis, licorice root, spruce tips, etc ***