

Task	Grade Level	Key Question	Example Field Work	Resources, Lessons, and Student Journals
A Visit to the Pond, Lake or Beach	K	What do we see at a pond or lake or beach?	A visit to a pond, lake or beach to observe what children see.	Kindergarten Unit: What is Water – City of Eugene, Or https://www.eugene-or.gov/DocumentCenter/View/14021
A Walk in the Woods	1	What do we observe in the woods using our senses?	A walk in the woods collecting observations using the senses.	*Using Your Senses (FOOS ,Unit 4B, Lesson 1) *Wildlife is Everywhere (Project Wild): http://www.projectwild.org/documents/WildlifeisEverywhere_000.pdf *Looking at Leaves (Project Learning Tree): http://www.projectwild.org/documents/WildlifeisEverywhere_000.pdf
Estuaries	2	What is an estuary and why are estuaries important?	Field experience at a local estuary.	Instructor background: https://www.nationalgeographic.org/encyclopedia/estuary/
Vegetable Gardens*	3	What does it take to start a vegetable garden?	Growing a Classroom Vegetables Garden	Soil Temperature Investigation & Seed Germination (3 rd Grade) http://www.pltwa.com/field-study-investigations.html
Clean Water Healthy Fish	3	What can we do to keep the water clean for our fish population?	Aquarium visit Community Outreach: What actions can we take to keep the water clean?	Drain Rangers (Lesson 4): Introduction to Water in the Schoolyard: https://pacifieducationinstitute.org/wp-content/uploads/2017/03/FINAL-Elementary-Drain-Rangers.pdf
Bioblitz!	3/4/5	What is Bioblitz and why is a Bioblitz important?	Schoolyard Bioblitz	Nature Mapping Programming PLT School Site Investigation www.greenschools.org
Forest Benefits*	4/5	What are the benefits of a forest and why are forests worth keeping?	Forest Walk: Finding evidence of the four forest benefits: recreation, habitat protection, clean environment, and forest products	PLT Trees as Habitats #22 http://www.pltwa.com/field-study-investigations.html Tree Benefits- www.treebenefits.com

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Forest Management	4/5/6	What is forest management and why is it important to the future of forests in our state?	Visit to a managed forest <i>This task has a career focus.</i>	PLT -Forest for the Trees #69 PLT-Who Works in this Forest? #34 Sustainable Forestry: http://www.wfpa.org/sustainable-forestry/
Save Our Salmon: Clean Water	4/5	How is clean water important to the survival of salmon?	Work Fish hatchery visit Assessing stream as good Salmon Habitat	Puyallup Journal example Lessons from Seattle Public Utilities Salmon Journals- http://www.pltwa.com/salmon-journals.html
Save Our Salmon: Water Flow	4/5	What is water flow and how is it important to the survival of salmon?	Fish hatchery visit Fish ladder visit	Salmon Journal http://www.pltwa.com/salmon-journals.html Aquatic WILD To Dam or Not to Dam p260 and Dam Design p. 269 Protecting stream flow: https://ecology.wa.gov/Water-Shorelines/Water-supply/Protecting-stream-flows
Marine Debris*	5/6/7	What is marine debris and how is it a threat to marine life?	Clean up at a local beach and categorize debris	Aquatic WILD Plastic Voyages p 189 PLT Pollution Search #36 Microplastic webpage describing doing a Microplastic survey. https://civiclaboratory.nl/2015/07/25/microplastic-survey/
Storm Water Pollution*	4/5/6	What is stormwater pollution and how can we control it?	Mapping the school campus for water flow features, storm water problems, and solutions	Drain Rangers-Engineering Design http://www.pugetsoundstartshere.org/drain-rangers FI-Soils as Sponges http://www.pltwa.com/field-study-investigations.html Aquatic WILD-Where Does Water Run? P44 Seattle utilities http://www.seattle.gov/Util/EnvironmentConservation/Education/index.htm

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Rain Gardens	5/6/7	What is a Rain Garden and how does it work?	Developing a rain garden (engineering design) on campus or in the community. School rain garden teaching site or visit to a local rain garden.	PEI Project Based Learning Model using Rain Gardens. WSU Rain Garden Handbook https://fortress.wa.gov/ecy/publications/documents/1310027.pdf 12000 Rain Gardens Organization http://www.12000raingardens.org/
Stormwater Engineers*	5/6/7	What is stormwater runoff and how can engineers address the problem of stormwater pollution?	Mapping the school campus stormwater solutions <i>This task has a career focus.</i> Percolation study on school grounds testing different land surfaces for permeability	Engineering Solutions-Engineering Design Puget Sound Starts Here http://www.pugetsoundstartshere.org/drain-rangers Aquatic WILD-Where Does Water Run? P44 Permeability study http://www.pltwa.com/soils-as-sponges-fi-and-assessment.html Seattle utilities http://www.seattle.gov/Util/EnvironmentConservation/Education/index.htm
Healthy Waters	5/6/7	How do sewage treatment plants work to clean our water?	Field Experience: Visiting a local sewage treatment plant	Healthy Forests, Healthy Waters Tahoma Curriculum Waste Water Treatment Brochures (City of CdA): https://www.cdaid.org/2687/departments/wastewater/wastewater-informational-brochures
Water Quality Monitoring*	6/7/8	How is our water polluted and what tests can we use to monitor its quality?	Water quality testing at a local river, lake or stream	Project WET-Healthy Water Healthy People Student Journal pages Sound Salmon Solutions Student pages. River & Stream Water Quality Monitoring https://ecology.wa.gov/Research-Data/Monitoring-assessment/River-stream-monitoring/Water-quality-monitoring

Sustainability English Language Arts Performance Tasks with Examples of Field Experiences

Task	Grade Level	Key Question	Example Field Work	Resources, Lessons, and Student Journals
Renewable and Non-renewable Energy	6/7/8	What are the differences between renewable and non-renewable energy, and what are the benefits of using renewable energy sources?	Visit a renewable energy site like a wind farm, a business using solar energy, a dam that is used to generate electricity.	NREL R.E.A.C.T.: Renewable Energy Activities -- Choices for Tomorrow (Activity 1 & 2: What is Energy & Renew a Bean): https://www.nrel.gov/docs/gen/fy01/30927.pdf
Renewable Energy: Wind	6/7/8	What is wind energy and what are the pros and cons for this type of renewable energy?	A visit to a wind farm	NREL R.E.A.C.T.: Renewable Energy Activities -- Choices for Tomorrow (Activity 6: The Answer is Blowing in the Wind): https://www.nrel.gov/docs/gen/fy01/30927.pdf
Renewable Energy: Solar	6/7/8	What is solar energy and what are the pros and cons for this type of renewable energy?	A visit to a business that uses solar energy	NREL R.E.A.C.T.: Renewable Energy Activities -- Choices for Tomorrow (Activity 11-12: Batch-type Solar Collectors: Which is Best?, Build a Better Solar Greenhouse): https://www.nrel.gov/docs/gen/fy01/30927.pdf
Renewable Energy: Hydropower	6/7/8	What is hydro energy and what are the pros and cons for this type of renewable energy?	A visit to a hydropower plant or dam	NREL R.E.A.C.T.: Renewable Energy Activities -- Choices for Tomorrow (Activity 7: Building a Wind "Turbin-ator"): https://www.nrel.gov/docs/gen/fy01/30927.pdf
Renewable Energy: Biomass	6/7/8	What is biomass energy and what are the pros and cons for this type of renewable energy?	A visit to a farm that uses biomass energy	NREL R.E.A.C.T.: Renewable Energy Activities -- Choices for Tomorrow (Activity 9: Which Grass Produces More Biomass?): https://www.nrel.gov/docs/gen/fy01/30927.pdf
Renewable Energy: Geothermal	6/7/8	What is geothermal energy and what are the pros and cons for this type of renewable energy?	A visit to a location that generates energy from geothermal heat	NREL Geothermal Energy (5 Activities) https://www.energy.gov/eere/education/downloads/geothermal-energy-5-activities

Sustainability English Language Arts Performance Tasks with Examples of Field Experiences

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Summer in the City: Urban Heat Islands (MS)	6/7/8	How can we keep our cities cooler in the summer?	Temperature readings around the campus: Comparative Study	Learn About Heat Islands (EPA) -- includes resources, webcasts, case studies, data, and measurement links: https://www.epa.gov/heat-islands/learn-about-heat-islands
Invasive Plants*	6/7	What are invasive plants and how can we control them?	Data collection: Measuring the percentage of invasive plants and helping with their removal	PLT-Invasive Species #12 PLT Biodiversity https://www.plt.org/biodiversity Invasive Plant lesson including Worst Weed http://www.pltwa.com/invasive-species.html
Microplastics	6/7/8	What are microplastics and how are they a threat to sea life?	Work Beach visit – Testing Sand for microplastics Testing products for microplastics	Aquatic WILD Plastic Voyages p 189 Pacific Shellfish Institute Curriculum Microplastic webpage describing doing a Microplastic survey. https://civillaboratory.nl/2015/07/25/microplastic-survey/
Integrated Pest Management (MS)	7/8	What is IPM and how does it work for both the farmers and the environment?	School gardens: Practicing IPM	PLT- Biodiversity Module-Activity 3: Potatoes, Pesticides, and Biodiversity https://www.plt.org/blog/activity/biodiversity-activity-3-potatoes-pesticides-biodiversity/
The Urban Heat Island Effect	8/9/10	What are urban heat islands, how are they a problem, and what can we do to reduce their impact?	Mapping an urban area and suggesting modifications to reduce the impact of heat from concrete and other surfaces	Field Investigation Guide Surface Temperature Investigation Designing an Approach for Assessing Your City's Heat Island (EPA): https://www.epa.gov/heat-islands/measuring-heat-islands#designing

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Integrated Pest Management (HS)	9/10/11	What is IPM and why is it an important approach for farmers and home gardeners to adopt?	School gardens: Practicing IPM	PLT- Biodiversity Module-Activity 3: Potatoes, Pesticides, and Biodiversity https://www.plt.org/blog/activity/biodiversity-activity-3-potatoes-pesticides-biodiversity/
Ocean Acidification	8/9/10	What is ocean acidification, how is it impacting the oyster industry, and what are possible solutions?	Water testing and monitoring Community education and outreach	NOAA/PMEL Carbon Program – What is OA: https://www.pmel.noaa.gov/co2/story/What+is+Ocean+Acidification%3F Smithsonian Ocean Portal: http://ocean.si.edu/ocean-acidification
Climate Change, Carbon, and Trees	8/9/10	How do we know the climate is changing and what role do trees play in reducing carbon dioxide in our atmosphere?	Tree measuring and calculating the amount of carbon in a tree and how much is sequestered per year	PLT-Focus on Forests-Climate Change and Forests PLT Website with both lbs. and kgs of carbon charts: https://www.plt.org/activity-resources/focus-on-forests-activity-8-climate-change-and-forests/ Tree Benefits www.treebenefits.com
Earth Day*	8/9/10	What is the significance of Earth Day, past, present, and future?	Earth Day activities: tree planting, recycling, planting a community garden	National Earth Day Activities https://www.epa.gov/earthday

***Scoring notes are included for this task.**