



**OFFICE OF  
SUSTAINABILITY**  
COUNTY OF SAN MATEO

## 4R'S CURRICULUM AND ACTIVITIES FOR TEACHERS

SUBJECT	GRADE(S)	CURRICULUM	DESCRIPTION	KEYWORDS
Environmental Education	K – 12	<a href="#">Environmental Education Initiative</a>	<b>K–12 environmental based curriculum units:</b> – Correlate with the Next Generation Science Standards and the Common Core Standards	– Multi-disciplinary – Environmental literacy – People and their impact
4Rs Natural Resources and Resource Recovery	K – 6	<a href="#">Closing the Loop</a>	<b>Interdisciplinary K6 curriculum in:</b> – Waste prevention – Recycling and composting – Hands-on activities	– 4R's – Composting – Worms
4Rs Natural Resources and Resource Recovery	4 – 12	<a href="#">Recycling Ethics in the Science Classroom</a>	<b>Presents a hypothetical scenario to:</b> – Discuss the importance of recycling (groups) – Each group strives to reach a consensus decision – Group devises a role-play skit of the hypothetical scenario	– Environmental values – Law and ethics – Personal responsibility – Effective communication – Negotiating consensus
4Rs Natural Resources and Resource Recovery	4 – 12	<a href="#">The Landfill</a>	<b>Students discuss:</b> – The risks a landfill may pose to a community – Scenario: A school board decision to close a school until landfill is capped – Students determine and defend how they vote	– Prioritizing values – Risking health vs. lowering property values – Role of environmental experts in public policy
4Rs Natural Resources and Resource Recovery	K – 12	<a href="#">Trash a Pizza!</a>	<b>A visualization activity to:</b> – Categorize types of trash buried in landfills – Use pie charts and percentages – Create a "trash pizza" model using solid waste	– Hands-on visualization – Landfill and solid waste – Resource recovery – Reuse and recycle

SUBJECT	GRADE(S)	CURRICULUM	DESCRIPTION	KEYWORDS
Food Conservation 4Rs Natural Resources and Resource Recovery	K - 12	<a href="#">Project Food, Land and People</a>	<b>Correlated K-12 curriculum covering:</b> <ul style="list-style-type: none"> <li>- Food systems and waste management</li> <li>- Gardening and nutrition</li> <li>- Interrelationships between food, resources, people</li> </ul>	<ul style="list-style-type: none"> <li>- Food systems</li> <li>- Natural resources</li> <li>- Interdependencies</li> </ul>
4Rs Natural Resources and Resource Recovery	K - 2	<a href="#">Recycle Often, Recycle Right</a>	<b>Lesson plans for teaching the 4R's:</b> <ul style="list-style-type: none"> <li>- Help students develop recycling habits</li> <li>- Understand how to recycle correctly</li> <li>- STEM based resources and materials</li> <li>- Align with Next Generation Science Standards</li> </ul>	<ul style="list-style-type: none"> <li>- Recycling</li> <li>- Natural resources</li> <li>- Waste management</li> </ul>
4Rs Natural Resources and Resource Recovery	K - 8	<a href="#">4R's Lesson Plans for Every Subject</a>	<b>Multi-disciplinary extensions:</b> <ul style="list-style-type: none"> <li>- Promote sustainability best practices</li> </ul>	<ul style="list-style-type: none"> <li>- ELA, Literacy, Arts</li> <li>- Science and Math</li> <li>- Advocacy</li> <li>- Monitoring</li> </ul>
4Rs Natural Resources and Resource Recovery	K - 8	<a href="#">Recycling and Waste Reduction</a>	<b>Corresponding activities and lessons in:</b> <ul style="list-style-type: none"> <li>- Recycling</li> <li>- Waste management</li> <li>- Composting</li> <li>- Plastic pollution</li> </ul>	<ul style="list-style-type: none"> <li>- 4R's</li> <li>- Composting</li> <li>- Plastic pollution</li> </ul>
4Rs Natural Resources and Resource Recovery	4 - 5	<a href="#">Doing the 4R's</a>	<b>Classroom activity guide to teach:</b> <ul style="list-style-type: none"> <li>- Reduce and reuse</li> <li>- Recycle and rot</li> </ul>	<ul style="list-style-type: none"> <li>- Activities</li> <li>- Lesson plans</li> <li>- Curriculum</li> </ul>
4Rs Natural Resources and Resource Recovery	K - 12	<a href="#">Waste/Recycling Lessons</a>	<b>This resource website contains:</b> <ul style="list-style-type: none"> <li>- Comprehensive lesson plans</li> <li>- A variety of earth science topics</li> <li>- Links to hundreds of content specific resources</li> </ul>	<ul style="list-style-type: none"> <li>- Recycling</li> <li>- Reduce and reuse</li> <li>- Rot/compost</li> </ul>
Energy and Climate	6 - 12	<a href="#">Energy Literary Series</a>	<b>Interactive program examining:</b> <ul style="list-style-type: none"> <li>- Renewable energy resources</li> <li>- Nonrenewable energy resources</li> </ul>	<ul style="list-style-type: none"> <li>- Energy</li> <li>- Renewable</li> <li>- Non-renewable</li> </ul>

SUBJECT	GRADE(S)	CURRICULUM	DESCRIPTION	KEYWORDS
Climate	4 - 5	<a href="#">Protect Your Climate</a>	<p>Science-based lessons that investigate:</p> <ul style="list-style-type: none"> <li>- The science and causes of climate change</li> <li>- How to take action to protect our climate</li> </ul>	<ul style="list-style-type: none"> <li>- Hands-on</li> <li>- Air quality</li> <li>- Waste management</li> <li>- Transportation issues</li> </ul>
Gardening	K - 5	<a href="#">Garden as the Classroom</a>	<p>Grade specific comprehensive resources for:</p> <ul style="list-style-type: none"> <li>- Garden programs and curriculum</li> <li>- Professional development and field trips</li> </ul>	<ul style="list-style-type: none"> <li>- Gardening</li> <li>- Edible schoolyard</li> </ul>
Composting	K - 12	<a href="#">Composting with Worms</a>	<p>Classroom experiment:</p> <ul style="list-style-type: none"> <li>- Demonstrates composting</li> <li>- Investigates why worms are "nature's recyclers"</li> </ul>	<ul style="list-style-type: none"> <li>- Composting</li> <li>- Worms</li> <li>- Recycle</li> <li>- Garbage</li> <li>- Biodegradable</li> </ul>
Plastic Pollution	4 - 12	<a href="#">A Plastic Ocean documentary</a>	<p>Educational supplement to movie:</p> <ul style="list-style-type: none"> <li>- Activities and discussion questions</li> <li>- Fact sheets</li> </ul>	<ul style="list-style-type: none"> <li>- Marine debris</li> </ul>
Plastic Pollution	K - 8	<a href="#">Microplastics and the Marine Environment</a>	<p>Grade specific content with:</p> <ul style="list-style-type: none"> <li>- Peer-review activities</li> <li>- Food web interactive</li> <li>- Detailed extensions</li> </ul>	<ul style="list-style-type: none"> <li>- Ecosystems</li> <li>- Food chains</li> <li>- Biogeochemical cycles</li> <li>- Organic chemistry</li> <li>- Natural resources</li> <li>- Pollution</li> </ul>
Plastic Pollution	9 - 12	<a href="#">Bioaccumulation</a>	<p>Lesson and activity examines:</p> <ul style="list-style-type: none"> <li>- Food webs</li> <li>- Mechanisms of plastics moving up in food chain</li> </ul>	<ul style="list-style-type: none"> <li>- Microplastic</li> <li>- Bioaccumulate</li> </ul>
Plastic Pollution	6 - 8	<a href="#">Mitigating Microplastic</a>	<p>Lessons include:</p> <ul style="list-style-type: none"> <li>- Correlated standards</li> <li>- Distinct examination of microplastics</li> </ul>	<ul style="list-style-type: none"> <li>- Sources</li> <li>- Potential impacts</li> <li>- Potential solutions</li> </ul>
Plastic Pollution	9 - 12	<a href="#">Make It or Break It: Bioplastics from Starch</a>	<p>Unit creates:</p> <ul style="list-style-type: none"> <li>- Bioplastics from different plant starches</li> <li>- Tests bioplastics strength and durability</li> </ul>	<ul style="list-style-type: none"> <li>- Bioplastic</li> <li>- Polymers</li> <li>- Tensile strength</li> <li>- Engineering</li> </ul>