NGSS – TAJIGUAS LANDFILL & RESOURCE CENTER FIELD TRIP – ALL GRADES

Lesson Name	Grade Level
ReSource Center Field Trip	5th

NGSS Standard (performance expectation)	Related Lesson Activities
5-PS1-3. Make observations and measurements to identify materials based on their properties.	- Students review natural resources and trace common objects back to their source - Students sort materials into their appropriate waste stream (recycling/landfill/green waste) based on their properties
5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environments.	- Students are introduced to the concepts of aerobic and anaerobic decomposition - Review of how decomposers help cycle nutrients and repurpose organic material in nature or backyard compost - Discussion of how this process can occur without decomposers and the production of methane - Students learn about organic vs. inorganic matter and what can and cannot decompose
5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.	- Students learn how the ReSource Center works, how this is one of our local solutions to keeping things out of the landfills and being responsible with our natural resources - Students learn about the Anaerobic Digestion Facility. This keeps food waste out of the landfill and rather than releasing the methane produced it is burned for electricity

3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for a success and constraints on materials, time, or cost.	- Students learn about the issue of disposing of the large amounts of waste generated by humans, particularly in Santa Barbara County. - Students learn how the new ReSource center at the landfill is one solution to reduce the amount of trash that is buried in the landfill, working within the constraints of limited space, time, cost, and geography. - Students learn ways that they individually can increase the success of waste reduction initiatives in the county.

Lesson Name	Grade Level
ReSource Center Field Trip	6th

NGSS Standard (performance expectation)	Related Lesson Activities
MS-PS1-3. Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.	- Students learn about natural resources and trace the objects they throw away back to the natural resource they were derived from. - Students discuss the impact of using renewable vs. nonrenewable resources and items that can be recycled or composted vs. those that cannot.
MS-LS1-7. Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.	- Students review the decomposition cycle. - Students learn that the food they throw away still contains nutrients, and these nutrients are recycled as they pass through the bodies of decomposers and create fertile soil that fosters new plant growth.
MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations or organisms in an ecosystem.	- Students learn to distinguish between renewable and nonrenewable resources. - Students discuss the environmental cost of continuously harvesting natural resources. - Students learn that, due to the lack of oxygen and the mixed quality of trash, decomposers don't have the resources they need to survive in landfills and therefore only anaerobic bacteria can break down organic waste that is landfilled.
MS-ESS3-2. Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.	- Students learn about how the consumption of natural resources and the burning of fossil fuels contributes to climate change.

	- Using the three R's as a guide, students come up with ways to mitigate emissions. - Students are introduced to the technology at the ReSource Center that is greatly improving the way waste is processed.
MS-ESS3-5. Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.	- Students learn how methane and carbon dioxide trap solar energy in the atmosphere. - Students are encouraged to ask questions to make sure they have full retention of how our waste leads to this effect.
MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.	- Students learn about the concern of disposing of the large amounts of waste generated by humans, particularly in Santa Barbara County. - Students learn how the new ReSource center at the landfill is one solution to reduce the amount of trash that is buried in the landfill, working within the constraints of limited space, time, cost, and geography. - Students learn ways that they individually can increase the success of waste reduction initiatives in the county.