

K/1st THEMATIC UNITS FOR ENVIRONMENTAL EDUCATION

The purpose of these units is to help students understand their environmental impact and how they can help mitigate the environmental challenges our community faces. A unit consists of four lessons and a related experience. Units are focused on Waste Management or Water Quality. For each unit, there are two required lessons and an additional two lessons from a list of provided options that must be performed to complete a unit. Units are complimented by additional lessons and books available for checkout by teachers.

Waste Management

Related Experience: Truck Visit

Students get a visit from one of Lexington's own waste collection trucks! The truck can be explored by students as they learn how it works and who operates it.

*Can only be scheduled on Wednesdays

Required Lessons

Waste Not Presentation

This activity is a general overview of what is and is not recyclable in the students' community. The method for recycling the materials is discussed. Students are asked to name ways they can reduce and reuse materials prior to recycling. (K-ESS3-3)

Waste Audit

Students help sort through their trash, pulling out any recyclable material. Students weigh recyclable materials separately and determine a total percent of recycling found in trash. Results of the waste audit are shared with students and staff. (K-ESS3-3)

Additional Lessons (Pick 2)

Trash Bashers

Students sort waste materials between recycling and landfill using either stickers or a display board. Students are guided through the process or the lesson can be used to assess what the students have learned. The students are given something to take home for reference. (K-ESS3-3)

Warming up to Worms

Students carefully explore red wiggler worms up close. Students will be invited to touch and feel worms as they make observations about how the worm feels, how it moves, what color the worm is, etc. Students will also learn about the diet of a worm and the integral part they play in decomposition, vermicomposting, and reducing food waste in a landfill. (K-LS1-1)

What Am I Made Of?

Students will identify the recycled material used to make new products in this sorting activity. For example, when shown a tissue, students will determine whether it was made from aluminum, plastic, or paper. (K-ESS3-3)

What Do You Want?

Students explore examples of the things we use every day. They work together to sort which of these items are needs and which are wants. This culminates in a class display showing the key result - we often want more than we need. (K-ESS3-3)

Lessons Available for Checkout

Recycle Relay

Students sort through clean waste to determine whether an item is recyclable locally or is landfill-bound waste. Each student chooses one item and races to place it in the correct container. This is repeated by each student until all waste has been sorted. (K-ESS3-3)

Recycled Paper

Students will create their own paper product from shredded, used paper. Students will discover the papermaking process from the forest to the classroom and learn how recycling paper helps to reduce the use of natural resources. (VA: Cr2.1.K)

Recycle Sorting IQ

Students learn what can and cannot be recycled locally by sorting out a bag of waste items into appropriate bins together. (K-ESS3-3)

Reused Art

Students will reuse (a) plastic, glass, paper and/or metal item(s) to create a work of art to show that items can be used again before being recycled or put into a landfill. (VA:Cr2.1.K)

Theme-Related Books

Michael Recycle

In this children's book, the super hero Michael Recycle comes to Abberdoo-Rimey, a town filled with litter, and teaches them not only to clean up their "garbage" and take pride in their home, but to reduce the amount of trash by recycling their paper, plastic and cans and reusing clothing, utensils, etc. (K-ESS3-3, RL.K.3, RL.1.3)

Michael Recycle Meets Litter Bug Doug

In this children's book, the super hero Michael Recycle meets a littering villain named Litter Bug Doug. Michael shows Doug that littering is wrong and how to clean up to keep his town healthy. (K-ESS3-3, RL.K.3, RL.1.3)

The Day the Trash Came Out to Play

This book shows that even one piece of litter can cause a problem and emphasizes the impact of litter on animals as well as people. Students are then asked to think about all that litter and what would happen to animals and people if the litter made its way into our watersheds. The story helps students make the connection to the environment and how everyone must do their part to keep the earth clean. (K-ESS3-3, K-LS1-1, RL.K.3, RL.1.3)

The Giving Tree

This moving story helps students understand how much trees give to all of us throughout their life and how humans can sometimes overuse our resources. (RL.K.3, K-ESS3-3, RL.1.3)

2nd/3rd THEMATIC UNITS FOR ENVIRONMENTAL EDUCATION

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Waste Management

Related Experience: Haley Pike Waste Management Facility

Tour Lexington's mulch pad and see how industrial-sized wind rows help speed up the decomposition of home yard waste. Also tour the capped landfill and see what a mountain of waste looks like as it is breaking down!

Required Lessons

Waste Not Presentation

This activity is a general overview of what is and is not recyclable in the students' community. The method for recycling the materials is discussed. Students are asked to name ways they can reduce and reuse materials prior to recycling. (SS-P-E-S-1)

Waste Audit

Students help sort through their trash, pulling out any recyclable material. Students weigh each recyclable material separately and determine a total percent of recycling found in trash. Results of the waste audit are shared with students and staff. (2-PS1-1)

Additional Lessons (Pick 2)

Garbage Pizza

Students construct a three dimensional pie chart that represents the school's Municipal Solid Waste with each slice representing a different solid waste category. (2.MD.D.10)

Partners in the Pile

Students work cooperatively to create a compost system by matching pictures of the ingredients needed to create compost. Each student is given an ingredient card (a nitrogen, carbon, or processing element). It's up to the student to formulate a complete group (pile of compost) with all necessary ingredients. (2-LS4-1)

Recycled Writing

Students "recycle" text to create new, original works. These can be texts from old newspapers and magazines to create poems, writing short narratives and "recycling" portions to create new stories, or developing a new song by "recycling" different song lyrics. Students learn that recycling is about breaking things down to create something new. (W.3.4)

Small Bag Bust

Students explore the way that consumers must make decisions that are cost-effective for their families. Can money be saved by buying in bulk instead of single packaging? By comparing the cost of, amount of, and waste generated by a product, students see the way goods are distributed differently and the hidden environmental costs connected to them. (KAS SS-EP-3.4.1)

Trash Bashers

Students sort waste materials between recycling and landfill using either stickers or a display board! Students are guided through the process and it can be used to assess what the students have learned while giving the students something to take home for reference.

Lessons Available for Checkout

Paper Pots

Students learn to make biodegradable paper pots by reusing old newspaper. This lesson introduces students to ideas about reusing waste and composting. (2.G.A.1)

Recycle Relay

Students sort through clean waste to determine whether an item is recyclable or is landfill-bound waste. Each student chooses one item and races to place it in the correct container. This is repeated by each student until all waste has been sorted. (PL.P.LPW.S.4)

Recycled Paper

Students will create their own paper product from shredded, used paper. Students will discover the papermaking process from the forest to the classroom and learn how recycling paper helps to reduce the use of natural resources. (VA:Cr2.1.2)

Reused Art

Students will reuse (a) plastic, glass, paper and/or metal item(s) to create a work of art to show that items can be used again before being recycled or put into a landfill. (VA:Cr2.1.2)

The Year is Right

In this team lesson, students rank items by the length of time they believe each item would last in a landfill. (2-PS1-2)

Theme-Related Books

Garbage Monster

This book is about a young girl who does not want to take out the garbage. One day the garbage comes alive. It's discovered that it is not garbage at all, but items that can be reused or recycled. (RL.2.3, RL.3.3)

4th/5th THEMATIC UNITS FOR ENVIRONMENTAL EDUCATION

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Waste Management

Related Experience: Lexington Recycle Center Tour

Students travel through the Lexington MRF (Materials Recovery Facility - also called The Recycle Center) to learn how materials are sorted and processed in a typical recycling facility.

Required Lessons

Waste Not Presentation

This activity is a general overview of what is and is not recyclable in the students' community. The method for recycling materials is discussed. Students are asked to name ways they can reduce and reuse materials prior to recycling. (5-ESS3-1)

Waste Audit

Students help sort through their trash, pulling out any recyclable material. Students weigh each recyclable material separately and determine a total percent of recycling found in trash. Results of the waste audit are shared with students and staff. (5-PS1-3, 5-ESS3-1)

Additional Lessons (Pick 2)

A Peek at Packaging

Packaging is made from a variety of resources and materials, with a variety of purposes. Students will identify the purposes and benefits of certain packaging, while also deciding if it is recyclable or biodegradable. (4-ESS3-1)

I Made Some Money

Students model the life cycle of aluminum can after it has been recycled. Students learn how recycling creates jobs and the importance of buying products made from recycled materials to "close the loop." (KAS SS-P-E-U-6)

Landfill EnviroScape

This demonstration educates students about how a modern landfill is set up and functions. (5-ESS3-1, SS-4-G-U-4)

More or Less

"Everything is connected to everything else" is the first law of ecology. This is an important concept when making decisions about the present, the future and the resources humans depend on. This activity demonstrates the importance of reducing resource use by exploring the relationships that can be drawn between the overuse of resources and a harmed environment. (5-ESS3-1, SS- 5-G-S-3)

One for All

Students learn about carrying capacity, natural resource planning, and working cooperatively to reach goals. (5-ESS3-1, SS-4-G-U-4, SS-4-G-U-4)

Lessons Available for Checkout

Luscious Landfill

Students investigate landfills built in the past and compare them to models of modern landfills. Students will be able to explain how stormwater and groundwater sources near modern landfills are better protected. This activity uses food to simulate a landfill. (5-ESS3-1, SS-4-G-U-4)

Recycle Relay

Students sort through clean waste to determine whether an item is recyclable or is landfill bound waste. Each student chooses one item and races to place it in the correct container. This is repeated by each student until all waste has been sorted. (PL.I.LPW.S.4)

Recycled Paper

Students will create their own paper product from shredded, used paper. Students will discover the papermaking process from the forest to the classroom and learn how recycling paper helps to reduce the use of natural resources. (VA:Cr2.1.4)

Reused Art

Students will reuse (a) plastic, glass, paper and/or metal item(s) to create a work of art to show that items can be used again before being recycled or put into a landfill. (VA:Cr2.1.4)

MIDDLE SCHOOL THEMATIC UNITS FOR ENVIRONMENTAL EDUCATION

The purpose of these units is to help students understand their environmental impact and how they can help mitigate the environmental challenges our community faces. A unit consists of four sequenced lessons and a related, culminating experience. Units focus on Waste Management and Water Quality.

Waste Management

Related Experience: Haley Pike Waste Management Facility

Tour the Haley Pike Waste Management Facility to see what happens to the yard waste we put in our gray bins at home. See a capped landfill where Lexington formerly sent its waste and learn how the City treats the leachate coming from the landfill using biofilters!

Lessons

Visit 1

Landfill EnviroScape

The EnviroScape is a tabletop model that demonstrates how a landfill functions. This lesson educates students about the design and function of a modern landfill. (08-ESS3-3)

Lexington Landfill/Trashy Trivia

Students learn about landfills and municipal solid waste through a class game of Jeopardy. (08-ESS3-3)

Visit 2

Waste Not Presentation

This lesson offers a general overview of municipal solid waste and why it is so important to reduce our consumption. Students will be able to explain what is and is not recyclable in the Lexington community as well as what happens to the items we put in our dumpsters and curbside bins. (08-ESS3-4)

Waste Audit

Students help sort through their trash, pulling out any recyclable material. Students weigh each recyclable material separately and determine a total percent of recycling found in the trash. Results of the waste audit are shared with students and staff. (08-ESS3-4)

Visit 3

Composting Presentation

This activity teaches students about the benefits of composting and how to reduce landfill-bound waste. The class will explore composting by getting up close and personal with a vermicomposting bin. (06-LS2-3)

Partners in the Pile

Students work cooperatively to create a compost system by matching pictures of the ingredients needed to create compost. Each student is given an ingredient card (a nitrogen, carbon, or processing element). It's up to the student to formulate a complete group (pile of compost) with all necessary ingredients. (06-LS2-3)

Visit 4

Household Hazardous Waste

Students will be introduced to the term “hazardous” and come up with a common definition for the class. Students will survey their classroom for hazardous products and learn what makes each of these products hazardous. Through this activity, students learn that proper disposal is important in keeping our water clean and pollution-free when dealing with HHW. They will end the lesson by making their own cleaners that do not contain harsh chemicals.

HIGH SCHOOL THEMATIC UNITS FOR ENVIRONMENTAL EDUCATION

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Waste Management

Related Experience: Active Landfill

Tour an active landfill to see what a mountain of trash looks like up close. Students get the opportunity to see how garbage taken away from our homes doesn't ever just disappear.

Lessons

Visit 1

Waste Not Presentation

This lesson offers a general overview of municipal solid waste and why it is so important to reduce our consumption. Students will be able to explain what is and is not recyclable in the Lexington community as well as what happens to the items we put in our dumpsters and curbside bins. (HS-ESS3-2)

Waste Audit

Students help sort through their trash, pulling out any recyclable material. Students weigh each recyclable material separately and determine a total percent of recycling found in the trash. Results of the waste audit are shared with students and staff. (HS-ESS3-2)

Visit 2

Food for Thought

Students review population, quality of life and resource statistics from different regions of the world. This information is used to facilitate a discussion on how our culture differs from others' dramatically. It helps to show how valuable it is to conserve resources, like trees and metals. (HS-ESS3-3)

Visit 3

Waste Sleuths

Students will investigate waste management methods and technologies. They will learn how to interpret data by learning from multiple sources to present on a waste management topic. (HS-ESS3-2)

Visit 4

City Choices

Students will learn how different municipal solid waste facilities function by using a case study approach. Participating in a democratic decision making process, students will discover the many factors involved when a community makes decisions regarding municipal solid waste facilities. (HS-ESS3-2)